OFFICIAL RECORDS OF
MARICOPA COUNTY RECORDER
HELEN PURCELL
20160048362 01/25/2016 02:04
ELECTRONIC RECORDING

ORDINANCE694-31-1-1--
Palumboa

When recorded, return to:
Paradise Valley Town Attorney
6401 East Lincoln Drive
Paradise Valley, Arizona 85253

ORDINANCE NUMBER 694

AN ORDINANCE OF THE TOWN OF PARADISE VALLEY, ARIZONA, AMENDING THE ZONING ORDINANCE AND AMENDING THE ZONING MAP TO PROVIDE FOR THE ISSUANCE OF AN AMENDED SPECIAL USE PERMIT FOR PROPERTY ZONED SUP DISTRICT (RESORT) AND THE REZONING FROM SUP DISTRICT (RESORT) TO SUP DISTRICT (RESORT) TO ALLOW FOR A LUXURY RESORT HOTEL WITH INTEGRATED DWELLING UNITS AND RESORT-RELATED RETAIL (THE RITZ-CARLTON, PARADISE VALLEY) FOR THE PROPERTY LOCATED AT 7000 E. LINCOLN DRIVE, GENERALLY BORDERED BY LINCOLN DRIVE TO THE SOUTH, MOCKINGBIRD LANE TO THE WEST, INDIAN BEND ROAD TO THE NORTH, AND THE CITY OF SCOTTSDALE TO THE EAST, WITH THE PROPOSED SUP DISTRICT (RESORT) TO INCLUDE A RESORT COMMUNITY, INCLUDING: A RESORT HOTEL WITH 200 HOTEL KEYS AND SPA, RESTAURANTS, RESORT-RELATED RETAIL, AND MEETING SPACE; 94 RESORT VILLAS; 66 RESORT RELATED LUXURY DETACHED SINGLE FAMILY HOMES; 45 RESORT BRANDED DETACHED SINGLE FAMILY HOMES; 53 RESORT RELATED ATTACHED RESIDENCES; ADDITIONAL RESORT RELATED RESTAURANTS AND RETAIL USES SEPARATE FROM THE HOTEL; AND SITE IMPROVEMENTS INCLUDING PARKING, LANDSCAPING, LIGHTING, AND IMPROVEMENTS TO SITE INFRASTRUCTURE; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the Town of Paradise Valley Planning Commission held public hearings on October 6, 2015 and October 20, 2015, in the manner prescribed by law, for the purpose of considering a rezoning of the property described in Exhibit A attached hereto ("Property") from SUP District (Resort) to a new SUP District (Resort) and for the purpose of making a recommendation on a proposed SUP District (Resort) amendment for the Property (to be known as the Special Use Permit for The Ritz-Carlton, Paradise Valley), and recommended approval of the new SUP District (Resort) to the Town Council; and

WHEREAS, the Town Council at its meetings on December 3, 2015, and December 17, 2015, held public hearings, as prescribed by law, to hear the request for the rezoning of the Property to a new SUP District (Resort) based upon the recommendation made by the Planning Commission as noted above, and to amend the Town Official Zoning Map to reflect the issuance of a new SUP District (Resort) for the Property; and

WHEREAS, pursuant to Article III of the Town Zoning Ordinance, the Town Council finds that the proposed rezoning is consistent with and conforms to the Land Use Map of the Town's adopted General Plan; and

WHEREAS, the Town Council now desires to approve a rezoning of the Property from SUP District (Resort) to SUP District (Resort), subject to the terms and conditions of the Special Use Permit and Related Stipulations for The Ritz-Carlton, Paradise Valley (Exhibit B attached hereto, incorporated herein by reference, and hereinafter referred to as the "SUP" and the "Stipulations," respectively) and to amend the Zoning Map to reflect such rezoning.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND TOWN COUNCIL OF THE TOWN OF PARADISE VALLEY, ARIZONA THAT:

SECTION 1. Findings. The proposed SUP District (Resort) rezoning is in accordance with Articles III and XI of the Town Zoning Ordinance. Specifically:

a. It is authorized by and is in conformity with the Town's adopted General Plan, as amended;
b. It will not be detrimental to, interfere with, or adversely affect existing uses or character of adjacent properties, persons residing or working in the vicinity, the neighborhood, the public health, safety, peace, comfort and general welfare; and
c. It will be in full conformity with any conditions, requirements, or standards prescribed in the Stipulations, in the Zoning Ordinance, and in the other ordinances of the Town.

SECTION 2. Rezoning. A parcel of land, as described in Exhibit A attached hereto, is hereby rezoned from SUP District (Resort) to a new SUP District (Resort; SUP-15-01) designation, with such changes to be made on the Town's Official Zoning Map, such new SUP District (Resort) to allow for use of the Property as a resort and for those other related uses permitted by the SUP and the Stipulations and as limited in the SUP and the Stipulations.

SECTION 3. Severability. If any section, subsection, sentence, clause, phrase, or portion of this ordinance is for any reason held invalid or unconstitutional by a court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions thereof.

SECTION 4. Effective Date. This ordinance shall become effective as of the Effective Date (as such term is defined in the Stipulations).

PASSED AND ADOPTED by the Mayor and Council of the Town of Paradise Valley, Arizona, this 21 day of December 2015

Michael Collins, Mayor

SIGNED AND ATTESTED TO THIS 21 DAY OF December, 2015.

ATTEST:

Duncan Miller, Town Clerk

APPROVED AS TO FORM:

Andrew M. Miller, Town Attorney

STATE OF ARIZONA)
:ss.
COUNTY OF MARICOPA)

CERTIFICATION

I, Duncan Miller, Town Clerk of the Town of Paradise Valley, Arizona hereby certify that the foregoing is a full, true, and correct copy of Ordinance Number 694 duly passed and adopted by a majority vote of the Town Council at a meeting duly called and held on the 21st day of December, 2015. Said Ordinance appears in the minutes of said meeting, and it has not been rescinded or modified and is now in full force and effect.

I further certify that said municipal corporation is duly organized and existing, and has the power to take the action called for by the Ordinance.

TOWN CLERK
TOWN OF PARADISE VALLEY
SEAL
1961
MARICOPA COUNTY, ARIZONA

Duncan Miller, Town Clerk

VOTE

AYES: 4

NAYES: 3

NOT PRESENT: 0

ABSTAIN: 0

PUBLISHED
January 28, 2016
February 4, 2016

EXHIBIT A
TO
ORDINANCE NUMBER 694
LEGAL DESCRIPTION OF THE PROPERTY

(TOWN OF PARADISE VALLEY NET AREA)

PARCEL NO. 2:

LOTS 1 THROUGH 149 AND TRACTS A THROUGH I, 7000 EAST LINCOLN, ACCORDING TO BOOK 1022 OF MAPS, PAGE 23, RECORDS OF MARICOPA COUNTY, ARIZONA;

EXCEPT THAT PORTION OF TRACT C AND G DESCRIBED IN PARCEL NO. 3.

PARCEL NO. 3:

THOSE PORTIONS OF TRACT C AND G, ACCORDING TO BOOK 1022 OF MAPS, PAGE 23, WHICH LIE WITHIN THE FOLLOWING DESCRIBED PROPERTY:

THE SOUTH 15.00 FEET OF THE NORTH 55.00 FEET OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER;

EXCEPT FOR THE WEST 40.00 FEET THEREOF.

TOGETHER WITH THE SOUTH 15.00 FEET OF THE NORTH 55.00 FEET OF THE WEST HALF OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER, ALL IN SECTION 10, TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

PARCEL NO. 2 CONTAINING 104.649 ACRES, MORE OR LESS
PARCEL NO. 3 CONTAINING 0.620 ACRES, MORE OR LESS

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
33851
RICHARD G.
ALCOCER
Date Signed 12-7-15
ARIZONA, U.S.A.
Expires: 6/30/ 2017

EXHIBIT B
TO
ORDINANCE NUMBER 694

TOWN OF PARADISE VALLEY
SPECIAL USE PERMIT FOR THE RITZ-CARLTON, PARADISE VALLEY
SUP-15-01

I. PROJECT DESCRIPTION

Pursuant to Article XI of the Zoning Ordinance of the Town of Paradise Valley, Arizona (the "Town"), the Town hereby grants to Five Star Development Resort Communities, LLC, an Arizona limited liability company, its successors and assigns (collectively, the "Owner"), this Special Use Permit No. 15-01 (with these Stipulations, the "SUP") governing the use the Property. All capitalized terms contained herein shall have the definitions set forth in this SUP.

The Property subject to this Special Use Permit is currently owned by the Owner and is comprised of approximately one hundred and five (105) acres located at the northeast corner of Mockingbird Lane and Lincoln Drive in the Town of Paradise Valley, Arizona, as more particularly described on Exhibit A to Ordinance No. 694.

This SUP is referred to throughout as "this SUP" to distinguish it from the prior Special Use Permit governing the use of the Property. The Town enacted Ordinance No. 603 relating to the prior Special Use Permit for the Property in April 2008. This Special Use Permit supersedes and replaces the prior Special Use Permit effective as of the Effective Date. This Special Use Permit is being granted by the Town to permit the development, construction, use and operation of the Property as a resort subject to and in accordance with these Stipulations and the 2015 Development Agreement.

Subject to these Stipulations, the improvements, facilities, and uses authorized to be developed, constructed, used, operated, and maintained on the Property include the following, which are further described below: Principal Resort Hotel with Hotel Keys and Resort Ancillary Facilities and Uses, Resort Villas, Resort Related Luxury Homes, Resort-Branded Homes, Resort Related Attached Residences, Area E Retail/Restaurant Uses on Area E1 (with the remainder (Area E2) to be further defined by an intermediate amendment to this SUP).

II. DEFINITIONS

"2015 Development Agreement" means the development agreement between the Town and the Owner entered into pursuant to A.R.S. § 9-500.05, which is to be executed concurrently with the approval of this SUP, as amended and restated or supplemented in writing from time to time, and all exhibits and schedules thereto.

"Acceptable Brand" means as defined in the 2015 Development Agreement.

"Affiliate," as applied to any person, means any person directly or indirectly controlling, controlled by, or under common control with, that person (or spouse or children of such person, if such person is a natural person). For the purposes of this definition, (i) "control" (including

with correlative meaning, the terms "controlling," "controlled by" and "under common control"), as applied to any person, means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of that person, whether through the beneficial ownership of voting securities, by contract or otherwise, and (ii) "person" means and includes natural persons, corporations, limited partnerships, general partnerships, joint stock companies, joint ventures, associations, limited liability companies, limited liability partnerships, limited liability limited partnerships, trusts, land trusts, business trusts or other organizations, whether or not legal entities.

"Applicable Laws" means all federal, state, county, and local laws (statutory and common law), and ordinances, rules, regulations, permit requirements, and other requirements and official policies of the Town that apply to the development of the Property.

"Approval Date" means the date on which all of the following have occurred: Ordinance 694 is (i) approved (i.e., voted on) by the Town Council of the Town of Paradise Valley, Arizona, and (ii) signed by the Mayor.

"Approved Plans" means those certain plans and other documents certified by the Town Clerk that are listed in Schedule 1 attached hereto and incorporated herein by this reference.

"Area A," "Area A1," "Area B," "Area C," "Area D," "Area E1," and "Area E2" means those portions of the Property as shown on Page D-1of the Approved Plans. Whenever in these Stipulations a reference is made to an "Area," such reference is to one or more particular Areas on Page D-1 of the Approved Plans.

"Area E1 Retail/Restaurant Uses" means: one or more full service, sit down restaurants (not a fast food restaurant) and/or a gourmet food shop (such as are operated by Dean & DeLuca or Le Grande Orange) and retail facilities, which are open to the general public, offering for sale goods and merchandise or certain services, such as, a café (such as Starbucks or Coffee Bean); full service salon; jewelry store; art gallery; gift items and apparel, sundries, cosmetics, over the counter pharmaceuticals, housewares and related kitchen wares, furniture; fresh or artificial flower sales; art; jewelry; fashion eyewear, fashion clothing, footwear and apparel; cigar or tobacco products; or newspapers, books and periodicals. Area E1 Retail/Restaurant Uses specifically excludes the sale of medical marijuana and stores commonly referred to as convenience store, gas station, or minimart (such as Circle K, 7 Eleven, AM/PM Minimart, Quick Trip, or similar brands of retail establishments that sell as the principal part of their business convenience goods, such as prepackaged food items, tobacco, periodicals, and other household goods, collectively "convenience store"); provided that a convenience store does not include a restaurant or gourmet food shop described above selling the foregoing. Except as provided above, Area E1 Retail/Restaurant Uses does not include establishments that are principally engaged in the provision of services (as opposed to restaurant and retail facilities) that are not subject to the Town's transaction privilege tax or the gross receipts derived from retail sales activities.

"CC&Rs" means one or more sets of conditions, covenants and restrictions applicable to discrete portions of the Property that, among other things, implement provisions of these Stipulations.

"Courtyard Areas" means any residential courtyard areas as defined in Article XXIV of the Town Zoning Ordinance in effect as of the Approval Date of this SUP.

"Effective Date" means the date on which all of the following have occurred: (i) this SUP and the 2015 Development Agreement have been adopted and approved by the Town Council, executed by duly authorized representatives of the Town and Five Star, and recorded (if applicable) in the office of the Recorder of Maricopa County, Arizona; (ii) the Owner has executed and recorded a "Proposition 207" waiver acceptable to the Town that waives certain rights and remedies pursuant to A.R.S. § 12-1134; and (iii) any applicable referendum period has expired without referral, or any proposed referendum has been declared invalid in a final non-appealable judgment by a court of competent jurisdiction, or this SUP (or the 2015 Development Agreement, as applicable) has been approved by the voters at a referendum election conducted in accordance with Applicable Laws.

"Finished Grade" means that the grade that is no more than two (2) feet above existing grade or as depicted on Page E-6 and/or Page H-6 of the Approved Plans.

"Floor Area" means the area under roof added to the floor area of any second and third story; provided, however that "Floor Area" also includes the horizontal solid portion(s) of trellises and/or open weave roofs, and all the horizontal solid portion of area under roof in accessory buildings such as gazebos, ramadas, and other accessory buildings, and the Courtyard Areas in Area B, Area C, and Area D. Floor Area excludes the floor area of any fully subterranean portions of a building, Courtyard Areas for all structures other than in Area B, Area C and Area D. The definition of "Floor Area" shall be subject to the Town Code and Town Zoning Ordinance as of the Approval Date of this SUP.

"Hotel Key" means a hotel room located in Area A, served by a single key, designed, constructed, and maintained with all furnishings, fixtures, and equipment necessary to operate as a single unit for transient occupancy use and used for transient occupancy as part of a Resort Hotel. Each Hotel Key shall have at least one five (5) fixture bathroom and a direct lockable connection from the exterior or a corridor.

"Hotel Quality Standards" means as defined in the 2015 Development Agreement.

"Minimum Hotel Keys" means the two hundred (200) Hotel Keys included as part of the Principal Resort Hotel and owned by a single legal Owner which also owns the Minimum Resort Hotel Improvements.

"Minimum Resort Hotel Improvements" means the minimum improvements included in the initial design and construction of the Principal Resort Hotel and including not less than all of the following elements:

(a) The Minimum Hotel Keys, provided that Hotel Keys in excess of the Minimum Hotel Keys may be owned by an Owner(s) other than the Owner of the Principal Resort Hotel; and providing that one hundred percent (100%) of the Hotel Keys will be a minimum of four hundred and fifty (450) square feet and at least twenty percent (20%) of Hotel Keys will be at least six hundred (600) square feet. All Hotel Keys will have minimum ceiling heights of eight feet six inches (8'6") and a five (5) fixture bathroom.

(b) Two (2) full service restaurants which, together with other restaurants and food service areas, are collectively capable of serving three (3) daily meals and providing room service to the Minimum Hotel Keys.

(c) At least one (1) swimming pool along with facilities (which may be remote from the pool) intended to provide food and beverage service to Resort Hotel guests at the pool.

(d) At least one (1) fitness area to accommodate professional-grade exercise machines and related equipment.

(e) An area or areas for at least one (1) spa, which will provide spa services such as massage services.

(f) A dedicated reception area to accommodate guest check-in, concierge, and cashier; along with an associated lounge with available food and beverage.

(g) A dedicated, covered area to accommodate vehicle or passenger drop off (such as valet parking services) for Resort Hotel guests, including a separate ingress and egress route for vehicles.

(h) A dedicated three (3) division ballroom, a pre-function area, a board room, and an outdoor event space to accommodate meetings and banquets.

"Open Space-Wash Corridor" means an area designated on Page H-6 of the Approved Plans as a wash and greenbelt area that is to be improved and used only for open space and shall not be otherwise developed, except for drainage, landscaping and hardscaping.

"Owner" means Five Star Development Resort Communities, LLC, an Arizona limited liability company and its respective successors and assigns, as well as any subsequent owner of any portion or portions of the Property, including but not limited to, an owner of a Resort Hotel, a Resort Villa, a Resort Related Luxury Home, a Resort-Branded Home, a Resort Related Attached Residence, any part of Area E1 or Area E2, or one or more combinations thereof. An Owner may be an individual, corporation, partnership, limited liability company, trust, land trust, business trust or other organization, or similar entity, which in turn may be owned by individuals, shareholders, partners, members, or benefitted parties under trust agreements, all of which may take any legal form, and may allocate interests in profits, loss, control or use.

"Principal Resort Hotel" means the Resort Hotel in Area A which is designated as the Principal Resort Hotel, is affiliated with one of the Acceptable Brands, meets the Hotel Quality Standards, and includes the Minimum Resort Hotel Improvements. The Principal Resort Hotel shall be owned by a single legal Owner.

"Property" means the real property described in Exhibit A to Ordinance No. 694. The Property is comprised of approximately one hundred five (105) acres of land.

"Resort" means the entire Property and all facilities and other improvements existing, developed or redeveloped and used or useful on the Property in substantial conformance with this SUP.

"Resort Ancillary Facilities and Uses" means: all facilities and uses related or incidental to the operation of a resort or resort hotel, including specifically, but without limitation: restaurants, bars and lounges; spas and salons; fitness facilities; barbershops; indoor and outdoor meeting, convention, display, exhibit, wedding and social function facilities; sale of food and alcohol (for on or off site consumption); catering facilities; outdoor cooking facilities; outdoor dining facilities; gourmet food shops (offering any combination of cooked, frozen, fresh, prepared or pre-packaged foods, beer, wines, liquors, gifts, fresh fruits and vegetables, groceries, sundries, cosmetics, over the counter pharmaceuticals, housewares, and related kitchen, indoor and/or outdoor dining items); deli, coffee, tea, ice cream, yogurt and similar shops or sales; snack bars; central plant, maintenance shop, engineering facilities, housekeeping facilities, laundry, storage and support facilities; valet and other parking facilities, parking decks, garages and areas; automobile rentals; gift and sundries shops; flower sales; art and art galleries; jewelry and jewelry shops; fashion eyewear, footwear and apparel sales; sale of hotel items such as furniture, bedding, art, toiletries; other resort retail; other resort sales and marketing; travel agency offices; tour and other off-site activity offices; administrative, support and other resort offices including temporary offices and facilities for construction, sales, marketing, and design; indoor and outdoor entertainment facilities; ramadas; pools; cabanas; tents; tennis and other recreational or sport uses and services, amenities, recreational facilities and fitness facilities. Any such use or facility may be within any Resort Hotel or separate building(s) located in Area A or A1, individually or grouped in one or more buildings or facilities.

"Resort-Branded Homes" means the forty-five (45) residential units in Area C further described in this SUP.

"Resort Hotel" means the hotel to be designed and constructed within Area A. Resort Hotels provide accommodations for transient occupants (as defined in §4A-477 of the Town Code) and related facilities and services and any Resort Ancillary Facilities and Uses. The Resort Hotel in Area A shall be the Principal Resort Hotel that at all times contains the Minimum Resort Hotel Improvements (subject to force majeure, remodeling, alteration, reconstruction, redevelopment, and similar events).

"Resort Hotel Manager" means the Owner of any Resort Hotel, including any Affiliate thereof or a third party hotel management company which manages any Resort Hotel. A Resort Hotel Manager may also manage any other portions of the Resort, including but not limited to Resort Villas, Resort Related Luxury Homes, Resort-Branded Homes, Resort Related Attached Residences, and Hotel Keys. If any Resort Hotel Manager is not the Owner of a Resort Hotel (or an affiliate of such Owner), it shall initially be a hotel management company which has not less than five (5) years' experience managing full service luxury hotels or resorts or which currently manages not fewer than five (5) full service luxury hotels or resorts.

"Resort Hotel Owner" means the single legal owner of each Resort Hotel.

"Resort Hotel Rental Program" means a rental management program offered and managed by the Owner of the Principal Resort Hotel (or Affiliate thereof) or a Resort Hotel Manager (or Affiliate thereof), which provides rental management service for a Resort Villa or Resort-Branded Home where the Owner of such Resort Villa or Resort-Branded Home elects to include its residence in the Resort Hotel Rental Program.

"Resort Related Attached Residences" means the fifty-three (53) residential units in Area D further described in this SUP.

"Resort Related Luxury Homes" means the sixty-six (66) residential units in Area B further described in this SUP.

"Resort Sign Guidelines" and "Resort Sign Program" means plans and/or a narrative describing signage for the Resort as described in Stipulation 35.

"Resort Villas" means the ninety-four (94) residential units in Area A1 further described in this SUP.

"Special Use Permit" or "SUP" means this Special Use Permit No. 15-01, which includes Schedule 1 and other exhibits thereto and these Stipulations.

"Special Use Permit Guidelines" means special use permit guidelines adopted by the Town and in effect as of the Approval Date.

"Town" means the Town of Paradise Valley, Arizona.

"Town Code" means the Code of the Town of Paradise Valley, Arizona, as amended from time to time, except when this SUP specifically references ordinances or requirements in effect as of the Approval Date, as attached as Schedule 3.

"Town Manager" means the Town Manager or his designee.

"Zoning Ordinance" means the Town's zoning ordinance, as amended from time to time, except when this SUP specifically references ordinances or requirements in effect as of the Approval Date, as attached as Schedule 3.

III. STIPULATIONS

A. GENERAL

1. As of the Effective Date, this Special Use Permit shall supersede and replace any and all prior Special Use Permits related to the Property. Unless and until the Effective Date, the prior Special Use Permit shall remain in effect.

2. This Special Use Permit touches and concerns the land and shall run with the land. Any person having or subsequently acquiring title to any portion of the Property shall be subject to this Special Use Permit, as it applies to the portion of the Property owned thereby and as it may be amended or superseded from time to time. Once an Owner no longer owns a portion of the Property, such prior Owner shall no longer be subject to this Special Use Permit (with respect to such portion of the Property no longer owned) and shall have no further obligations or liabilities hereunder, except that such prior Owner shall remain responsible for its own acts or omissions that resulted in a violation of this SUP during its period of ownership.

3. Development of the Resort shall be in substantial conformance with the Approved Plans and these Stipulations.

4. Lot coverage for the Property as a whole shall not exceed that noted in the Land Density Table in Page D-3 of the Approved Plans.

5. The use of the Property shall at all times conform to this Special Use Permit and all Applicable Laws, except that if there is a conflict between this Special Use Permit and any provision of the Town Code or Zoning Ordinance or other Town requirement, this Special Use Permit shall prevail, except when otherwise required for health, safety, or welfare reasons.

6. If any section, subsection, sentence, clause, or phrase of this Special Use Permit is for any reason held illegal, invalid, or unconstitutional by the final, non-appealable decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Special Use Permit. The Town and the Owner believe and intend that the provisions of this Special Use Permit are valid and enforceable. In the unlikely event that this Special Use Permit is declared by a court of competent jurisdiction to be invalid or unenforceable, the Principal Resort Hotel (if constructed and as then constructed) may continue to be used and operated as a legal non-conforming use in accordance with these Stipulations until such time as a special use permit or other applicable zoning for the Resort is reissued by the Town for the Property.

7. In the case of inconsistencies or conflicts between or among these Stipulations and the Approved Plans, these Stipulations shall govern. In the event of a conflict between the text and the diagrams, drawings or other graphic representations contained in the Approved Plans, the text will prevail and control over the diagrams, drawings, and other graphic representations.

8. Mylar versions and electronic versions of all Approved Plans shall be submitted to the Town within thirty (30) days after the Approval Date.

9. No part of the Resort shall be operated as a Time-Share Project as such term is defined by the Town Zoning Ordinance. No part of the Principal Resort Hotel in Area A may be subdivided for purposes of sale or resale.

10. When applicable, all approvals and determinations by the Town Manager referenced herein shall be governed by the Town Code in effect at the date of that determination, except when this SUP specifically references ordinances or requirements in effect as of a specific date (e.g., see definition of Special Use Permit Guidelines).

11. The Town Manager's approval or determination is provided for in several instances in these Stipulations. The Town Manager shall base his approval on standards and criteria set forth in this SUP, the 2015 Development Agreement, the Town Code, and the Zoning Ordinance, as reasonably applicable, with the intent to implement the viable development of the Resort as provided in this SUP and the 2015 Development Agreement. Recognizing that the final design and building permit process for which any particular

approval of the Town Manager is sought involves multiple stages, including conceptual, schematic, design development and construction documents, an Owner may seek the approval of the Town Manager at one or more stages of such design. Notwithstanding the foregoing, no construction may occur with respect to any particular element or structure until necessary permits for that element or structure are issued. An Owner may rely upon an approval in proceeding from one stage of design to the next. Although the parties intend that this Special Use Permit, the 2015 Development Agreement, the Zoning Ordinance, and the Town Code state a consistent relationship between them, the parties agree that in the event of a conflict between these documents that the order of priority shall be the (1) Special Use Permit, (2) 2015 Development Agreement, (3) Zoning Ordinance, and (4) Town Code; the parties agree that the higher priority document shall control. If the 2015 Development Agreement is declared invalid or unenforceable in its entirety by a court of competent jurisdiction or if a bankruptcy court rejects the 2015 Development Agreement or approves a sale of the Property free and clear of the 2015 Development Agreement, or any portion thereof, then Sections 2.1, 2.2, and 2.3 of the 2015 Development Agreement (together with any exhibits and definitions referenced in those sections) shall be incorporated into this SUP by reference with the same force and effect as if fully set forth herein

12. If any portion of the property is used in violation of the terms of this Special Use Permit, the Town may, after: (1) fair notice; (2) a hearing; and (3) a reasonable opportunity to correct, impose a monetary sanction on the then Owner of such portion, in an amount not to exceed the maximum amount allowed for violations of the Town Zoning Ordinance for each day such violation exists, in addition to all other remedies, orders, or sanctions permitted by Applicable Laws, including, at the Town's election, injunctive relief. No such remedy shall be sought from any other Owner or portion of the Property that is not in violation of this Special Use Permit.

13. Unless otherwise stipulated in this Special Use Permit, amendments to this Special Use Permit shall follow the appropriate process outlined in Article XI, Special Uses and Additional Use Regulations, of the Town Zoning Ordinance, as amended.

B. CONSTRUCTION AND DEVELOPMENT STANDARDS

14. All utilities within the Resort shall be underground (excluding certain equipment typically installed above ground, such as transformers, meters, etc., which shall be appropriately screened) and located within appropriate easements. All water and sewage facilities shall be constructed in accordance with plans approved by the Town Manager.

15. No construction permit shall be issued for any construction on the Property until appropriate engineering or architectural plans are submitted to the Town and the issuance of such construction permit for that particular activity is approved by the Town Manager. Submitted plans shall be required to meet the building code most recently adopted by the Town. However, the Town may issue approvals and/or permits to salvage native plants and stage or prepare the job-site for work with fences, trailers, dumpsters, sanitation, water tanks, material storage, erosion control and dust control measures, and the like, without engineering or architectural plans.

16. During the period of demolition or construction of new improvements, signs shall be posted on the Property (or at the entrance to a particular phase) indicating the name and phone number of a person the public may contact with construction-related concerns. Sign details such as the sign size, height, and location shall be reviewed and approved by the Town Manager.

17. All new construction shall satisfy all fire department requirements for each component of work (which may include temporary fire protection facilities) prior to the issuance of any building permit for such work.

18. Prior to the issuance of a certificate of occupancy for any individual structure, adequate fire, emergency, and other vehicle access and adequate fire service shall be provided for such structure and the particular phase of development in which such structure is located, as determined by the Town Manager.

19. Interiors of the Principal Resort Hotel structure may be remodeled at any time without an amendment to this Special Use Permit or other approvals by the Town (except for appropriate building permits when required by the Town Code so long as such remodeling does not increase or decrease the number of Hotel Keys, the remodeled Principal Resort Hotel continues to comply with the Hotel Quality Standards, and the Principal Resort Hotel continues to include the Minimum Resort Hotel Improvements.

20. One or more locations within the Resort as approved by the Town Manager may be improved and used as a marketing center, inclusive of the construction and occupancy of model homes, for the sales and marketing of the Resort until such time as all construction has been substantially completed and all Resort Villas, Resort Related Luxury Homes, Resort-Branded Homes, and Resort Related Attached Residences have been initially sold.

21. Temporary construction driveway locations are subject to the approval by the Town Manager and are limited to locations on Lincoln Drive and/or Indian Bend Road east of the existing traffic circle.

22. If vertical construction has not commenced within an Area that has been otherwise disturbed by grading or other construction work by a date that is three (3) years after the Approval Date, any such disturbed portion within such Area shall be stabilized and/or landscaped to minimize dust.

23. The Resort Hotel Owner shall submit a construction schedule prior to the issuance of any building permits for a structure to ensure compliance with all Town ordinances and in order to minimize construction nuisances. This construction schedule shall include the following:

    a. Dust and noise control measures

    b. Vehicle/equipment storage/parking

    c. Construction days/hours

d. Location of staging area for construction supplies/equipment

e. Location of any construction trailers and sanitary facilities

f. Location of on-site construction-materials/debris storage

g. Location of fire lanes during the construction period

h. The approximate beginning and ending dates for construction of structures

i. All construction related parking and storage must be contained within the boundaries of the Property and on the adjacent property within the City of Scottsdale owned by Owner.

24. Consistent with the phasing requirements and limitations contained within the 2015 Development Agreement, the Owner shall arrange for construction phasing within an Area (or Areas combined) on the Property in the following sequence:

a. Commence native plant salvage, dust and erosion control measures, job-site mobilization and set-up, and the like.

b. Begin storm water pollution prevention plan and measures.

c. Upon completion of the salvage, erosion and dust control, job-site mobilization, and set-up, commence utility and civil improvements and site work.

d. Upon substantial completion of, or in conjunction with, the utility and civil improvements, commence perimeter walls, and perimeter landscaping (outside the perimeter walls) of the Property along Lincoln Drive, Mockingbird Lane, and Indian Bend Road.

e. Upon substantial completion of above, vertical building improvements for Areas A1, B, C, D, and E1 may commence in accordance with the provisions and limitations contained within the 2015 Development Agreement.

f. Vertical building improvements for Area A may commence at any time after completion of subsections a, b, and c as listed above.

g. Prior to the issuance of any certificate of occupancy for any structure within an Area, all internal streets within such Area, together with the connecting street(s) to a public right-of-way, shall be complete.

25. Subject to requirements for construction of the horizontal or vertical improvements, construction access, emergency vehicle access, erosion control, storm water pollution prevention control, dust control and other measures, portions of the perimeter wall and landscaping may be postponed or re-opened for construction or access, subject to approval by the Town Manager.

26. During construction and development of the Resort, temporary sales and marketing signs may be posted on the Property consistent with a temporary sign program to be submitted by the Owner and approved by the Town Manager.

27. During grading and construction, the Owner shall sweep the streets adjacent to the Property and any other public streets in the Town directly affected by development on the Property using a PM-10 or equivalent capable street sweeper at least three (3) times a week or more, as required by the Town Manager.

28. Screening of any backflow preventer, transformer, or other similar equipment visible from Lincoln Drive, Mockingbird Lane, or Indian Bend Road shall be required and the precise location of such equipment and screening shall be approved by the Town Manager and the utility provider.

29. Stand-alone accessory and service structures over six (6) feet in height (as defined in the Special Use Permit Guidelines) in Areas A and A1, and guard houses (each limited to eight-hundred (800) square feet of Floor Area) in Areas B and C , may be added to the Approved Plans, provided that the total square footage of all the accessory and service structures added together does not exceed fifteen thousand (15,000) square feet of Floor Area, such additions to be provided to the Town Manager as a revised conceptual site plan. Stand-alone accessory and service structures cannot exceed sixteen (16) feet in height and must be set back a minimum of forty (40) feet for any accessory structure and sixty (60) feet for any service structure from any rights-of-way or residential property lines outside of the SUP boundaries and ten (10) feet from any non-residentially zoned property outside of the SUP boundaries.

30. Accessory structures that do not exceed six (6) feet in height above Finished Grade (raising the Finished Grade by placing fill solely for the purpose of adding additional height is prohibited) in Areas A and A1, including, but not limited to, pools, barbeques, fire pits, fireplaces, water features, and other accessory structures, shall be allowed within the boundaries of Areas A and A1, subject to approval by the Town Manager. These accessory structures shall not count towards the fifteen thousand (15,000) square feet of additional Floor Area for stand-alone accessory structures and service structures over six (6) feet in height provided for in Stipulation 29 above.

31. All outdoor lighting not visible off site shall meet the Special Use Permit Guidelines. All outdoor lighting (including fixtures, light source, etc.) visible off site shall be processed through a minor amendment to this Special Use Permit. If the Town receives a complaint from an offsite owner that a lamp or lighting or illumination device within an outdoor light fixture is visible from outside the Property, the Town Manager may inspect the Property and require the Owner of such lighting fixture to shield such light source if the light emitting element is visible from outside the Property.

32. Except as otherwise allowed by Federal or State requirements, antenna and satellite dishes are permitted, as follows:

    a. Satellite dishes must not be located above the roof line. Satellite dishes and antennas greater than twenty-four (24) inches in diameter are permitted, provided that they are

not mounted on the roof and meet all Town Code requirements, including full screening of equipment from view from the public right-of-way or properties not part of this Special Use Permit

b. All wiring shall be contained within a structure, conduit, or underground.

33. Cellular and other wireless transmission antennas are permitted, provided that they comply with this Special Use Permit and all applicable Town ordinances, specifically including the requirement to obtain a conditional use permit pursuant to Article XI of the Zoning Ordinance, as amended; but further provided that no conditional use permit is required for cellular antennas located in the primary structures of the Principal Resort Hotel. Any cellular antennas shall be designed as integrated architectural features within the structures on the Property and any screening shall be in the same finish and color as the structure on which it is located. There shall be no unscreened projections of cellular antennas on any building above the roofline. Any lease agreement with a wireless operator will specifically allow entry by the Town and its agent for the purpose of inspection and compliance with Town ordinances and will require compliance with Article XII, Personal Wireless Service Facilities, of the Town Zoning Ordinance or any successor ordinance.

34. The final design for Indian Bend Road, Mockingbird Lane, and the Visually Significant Corridor of Lincoln Drive shall be in accordance with the terms of the 2015 Development Agreement.

35. Subsequent to the Approval Date, Owner shall submit comprehensive Resort Sign Guidelines for the overall Resort for review and determination by the Town Manager. Any additional signage which is not shown on the Approved Plans and is visible offsite, beyond the boundaries of this SUP, shall be processed as a minor amendment to this SUP.

36. Perimeter landscaping plans shall be in accordance with the terms of the 2015 Development Agreement and this SUP.

C. DEVELOPMENT AREAS

AREA A – RESORT HOTEL AND RESORT ANCILLARY FACILITIES AND USES

37. Area A may only be improved with a Resort Hotel, which shall be the Principal Resort Hotel, and Resort Ancillary Facilities and Uses. No part of Area A may be subdivided with plats or maps for the purpose of sale or resale. The Principal Resort Hotel shall: include the Minimum Resort Hotel Improvements; comply with the Hotel Quality Standards; and comply with the height, setback, and Floor Area limitations as shown on Page D-3 of the Approved Plans.

38. All mechanical equipment, including pool and fountain equipment, shall be screened so that it is not visible from Paradise Valley properties not a part of this Special Use Permit and from Paradise Valley public rights-of-way. All pool heaters are to be low-profile in configuration. Mechanical equipment and mechanical equipment screens shall be

included in the total height of any structure they are attached to. If applicable, mechanical screening may provide the necessary noise attenuation for any mechanical equipment. All mechanical equipment, along with any screens used for attenuation of noise, shall comply with the allowable noise levels as defined in the Town Code provisions relating to noise, as it is amended from time to time. Noise measurement shall include any installed screening or other attenuation devices.

39. The hours of public operation for the Resort Hotel shall be twenty-four (24) hours per day, seven (7) days a week, except for the hours and operational standards set forth below:

    a. Indoor bars/lounges: 6:00 a.m. to close per state statute.

    b. Outdoor banquets, receptions, weddings, and socials: 6:00 a.m. to 2:00 a.m.

    c. Spa & fitness facilities: Outside members limited to 5:00 a.m. to midnight; and resort guests up to twenty-four (24) hours a day.

    d. Trash pickup: 7:00 a.m. to 7:00 p.m.

AREA A1 – RESORT VILLAS

40. Area A1 may only be improved with up to ninety-four (94) attached residential Resort Villas and uses incidental or accessory thereto (specifically including the Area E1 Retail/Restaurant Uses up to the maximum Floor Area for food and beverage uses shown in Page D-3 of the Approved Plans), as well as common areas and common use facilities and/or amenities, provided that the Resort Villa plans comply with the height, setback, and Floor Area limitations shown on Page D-3 of the Approved Plans. Each Owner of a Resort Villa may occupy it, or permit its family and guest(s) to occupy it, or make it available for residential uses. In addition, each Owner of a Resort Villa may voluntarily participate in the Resort Hotel Rental Program and make its Resort Villa available for transient occupancy uses or hospitality uses, at its sole option, under the terms and conditions of the Resort Hotel Rental Program, provided, however, that any rental of any Resort Villa shall only be done through the Resort Hotel Rental Program. The principal guest of a Resort Villa in the Resort Hotel Rental Program shall register with the Principal Resort Hotel. Nothing shall prohibit a Resort Villa from being sold (and thereafter resold) to a third party, or parties, and used as provided herein.

41. Resort Villas are subject to the following requirements:

    a. Resort Villas shall be constructed in conformance with the development standards set forth in this Special Use Permit.

    b. Resort Villas in the Resort Hotel Rental Program must always meet the Hotel Quality Standards for the Principal Resort Hotel.

    c. Rental of Resort Villas will be processed through the Resort Hotel Rental Program or other similar mechanism where the Principal Resort Hotel can track all rental activity.

d. Each floor of a building containing Resort Villas must contain a room or rooms providing housekeeping closet and room service pantry services.

e. Each Resort Villa must have locking entrance doors tied to a remote master key system located at the guest reception area of the Principal Resort Hotel, which system is capable of issuing new key cards for each Resort Villa as it is rented and cancelling key cards upon expiration of the rental term.

f. Each Resort Villas must be connected to a master television system as would typically be found in a full service luxury resort hotel.

g. Each Resort Villas must be connected to a master communication system that allows intra-system calls to the front desk, concierge, housekeeping, room service, and other hotel services, as typically found in a luxury resort hotel.

h. Any part or individual unit of the Resort Villas may be subdivided (if previously combined) or combined for the purposes of sale or resale provided that the total number of units shall not exceed ninety-four (94).

AREA B – RESORT RELATED LUXURY HOMES

42. Area B may only be improved with up to sixty-six (66) detached single-family residential Resort Related Luxury Homes and uses incidental or accessory thereto, as well as common areas and common use facilities and/or amenities, provided that all such improvements comply with the height and Floor Area limitations shown on Page D-3, and setback limitations as shown on Page F-2 of the Approved Plans. Each Owner of a Resort Related Luxury Home may occupy it or permit its family and guest(s) to occupy it, or make it available for residential uses. Nothing shall prohibit a Resort Related Luxury Home from being sold (and thereafter resold) to a third party, or parties, and used as provided herein.

43. Resort Related Luxury Homes are subject to the following requirements:

a. Resort Related Luxury Homes shall be constructed in conformance with the development standards set forth in this Special Use Permit.

b. Additional walls not shown on the Approved Plans may be constructed on the lot within enclosed private yards, provided they do not exceed six (6) feet in height.

c. Air conditioners may be installed on roofs, provided they shall be screened and noise attenuated so as to comply with the allowable noise levels as defined in the Town Code provisions relating to noise, as it is amended from time to time. Noise measurement shall include any installed screening or other attenuation devices. Such screening shall be included in the overall height of the structure.

d. All outdoor lighting shall comply with Town ordinances.

e. A minimum of thirty-three (33) percent of each lot shall be open and pervious, provided that swimming pools (excluding surrounding deck surfaces) shall be deemed to be open and pervious.

f. Accessory structures that do not exceed six (6) feet in height above Finished Grade, including, but not limited to, pools, barbeques, fire pits, fireplaces, water features and other accessory structures, shall be allowed within the boundaries of each lot, provided they are located in a rear yard screened from public streets. The requirements of the preceding sentence shall not apply to accessory structures adjacent to or visible only from private streets. Accessory structures over six (6) feet above Finished Grade (or under six (6) feet in height but not in an enclosed yard), which may include casitas, gazebos, trellises, and patio covers, shall be allowed on each lot, provided that they comply with the Floor Area limitations shown on Page D-3 of the Approved Plans, are limited to sixteen (16) feet above Finished Grade, and comply with the setbacks on Page F-2 of the Approved Plans.

g. Accessory structures containing livable square footage shall meet the setbacks for the main home and may not exceed sixteen (16) feet in height as measured from Finished Grade.

h. House-mounted basketball backboards and pre-fabricated storage sheds shall not be permitted.

AREA C – RESORT-BRANDED HOMES

44. Area C may only be improved with up to forty-five (45) detached single-family residential Resort-Branded Homes and uses incidental or accessory thereto, as well as common areas and common use facilities and/or amenities, provided that all such improvements comply with the height and Floor Area limitations shown on Page D-3, and setback limitations as shown on page F-3 of the Approved Plans. Each Owner of a Resort-Branded Home may occupy it, or permit its family and guest(s) to occupy it, or make it available for residential uses. In addition, each Owner of a Resort-Branded Home may voluntarily participate in the Resort Hotel Rental Program and make its Resort-Branded Home available for transient occupancy uses or hospitality uses, at its sole option, under the terms and conditions of the Resort Hotel Rental Program, provided, however, that any rental of any Resort-Branded Home shall only be done through the Resort Hotel Rental Program. The principal guest of a Resort-Branded Home in the Resort Hotel Rental Program shall register with the Principal Resort Hotel. Nothing shall prohibit a Resort-Branded Home from being sold (and thereafter resold) to a third party, or parties, and used as provided herein.

45. Resort-Branded Homes are subject to the following requirements:

a. Resort-Branded Homes shall be constructed in conformance with the development standards set forth in this Special Use Permit.

b. Resort-Branded Homes in the Resort Hotel Rental Program must always meet the requirements of the Acceptable Brand for the Principal Resort Hotel.

c. Additional walls not shown on the Approved Plans may be constructed on a lot within enclosed private yards, provided they do not exceed six (6) feet in height.

d. Air conditioners may be installed on roofs, provided they shall be screened and noise attenuated so as to comply with the allowable noise levels as defined in the Town Code provisions relating to noise, as it is amended from time to time. Noise measurement shall include any installed screening or other attenuation devices. Such screening shall be included in the overall height of the structure.

e. All outdoor lighting shall comply with Town ordinances.

f. A minimum of thirty-three (33) percent of each lot shall be open and pervious, provided that swimming pools (excluding surrounding deck surfaces) shall be deemed to be open and pervious.

g. Accessory structures that do not exceed six (6) feet in height above Finished Grade, including, but not limited to, pools, barbeques, fire pits, fireplaces, water features and other accessory structures, shall be allowed within the boundaries of each lot, provided they are located in a rear yard screened from public streets. The requirements of the preceding sentence shall not apply to accessory structures adjacent to or visible only from private streets. Accessory structures over six (6) feet above Finished Grade (or under six (6) feet in height but not in an enclosed yard), which may include casitas, gazebos, trellises, and patio covers, shall be allowed on each lot, provided they comply with the Floor Area limitations shown on Page D-3 of the Approved Plans, are limited to sixteen (16) feet above Finished Grade, and comply with the setbacks on Page F-3 of the Approved Plans.

h. Accessory structures containing livable square footage shall meet the setbacks for the main home and may not exceed sixteen (16) feet in height as measured from Finished Grade.

i. House mounted basketball backboards, and pre-fabricated storage sheds shall not be permitted.

AREA D – RESORT RELATED ATTACHED RESIDENCES

46. Area D may only be improved with up to fifty-three (53) attached single-family residential Resort Related Attached Residences and uses incidental or accessory thereto, as well as common areas and common use facilities and/or amenities, provided that all such improvements comply with the height, setback, and Floor Area limitations shown on Page D-3 of the Approved Plans. Each Owner of a Resort Related Attached Residence may occupy it or permit its family and guest(s) to occupy it, or make it available for residential uses. Nothing shall prohibit a Resort Related Attached Residence from being sold (and thereafter resold) to a third party, or parties, and used as provided herein.

47. Resort Related Attached Residences are subject to the following requirements:

a. The Resort Related Attached Residences shall be constructed in conformance with the development standards set forth in this Special Use Permit.

b. Accessory structures that do not exceed six (6) feet in height above Finished Grade, including, but not limited to, barbeques, fire pits, fireplaces, water features and other accessory structures, that are not over one hundred and fifty (150) square feet in size, not shown on the Approved Plans may be constructed on a lot when otherwise in compliance with this Special Use Permit.

OPEN SPACE-WASH CORRIDOR

48. The Open Space-Wash Corridor shown on Page H-6 of the Approved Plans shall be constructed in substantial conformance with the Approved Plans and with landscaping and hardscaping as approved by the Town Manager. Thereafter the Open Space-Wash Corridor shall be maintained by a master association and used only for stormwater conveyance and detention, public trails, benches, and permanent open space and shall not be otherwise developed, except for landscaping and hardscaping, including but not limited to: pathways, seat walls, benches, sculptures, entry monument signage, water features and storm water detention systems. Public access to the Open Space-Wash Corridor may only be restricted when flooding or other conditions exist so as to require such restrictions in order to protect the health, safety, and welfare of the public. No roadways or other motorized vehicular access shall be permitted on or across the Open Space-Wash Corridor, except as provided on the Approved Plans and for temporary access in order to perform landscape maintenance and other related maintenance. No parking of vehicles shall be permitted on any portion of the Open Space-Wash Corridor.

AREA E1 – RETAIL APPROVAL AND FUTURE AREA E2 APPROVAL AREA

49. Current Approvals for Area E1 and Future Uses and Approval Process for Area E2

a. Area E1 may only be improved at this time with Area E1 Retail/Restaurant Uses. All improvements to Area E1 shall comply with the height, setback, parking requirements, and Floor Area limitations shown on Page D-3 of the Approved Plans. Building exteriors in Area E1 shall be maintained in good working condition and absent any visible signs of disrepair.

b. Future improvements to Area E2 shall only be allowed as permitted by an intermediate amendment to this SUP (as provided in Article XI of the Zoning Ordinance). The Town and Owner anticipate Area E2 may include the following uses: resort hotel, resort-related retail, resort-related above-ground parking structure or structures, and resort-related health services. No use for Area E2 shall be deemed approved unless and until the intermediate amendment referenced above is obtained. The intermediate amendment to the SUP shall determine the square footage approvals for each of these uses, as well as the heights, setbacks, and locations of each such use. Processing of any plat approval or building permits for Area E2 shall not be permitted until after the intermediate amendment has been processed by the Town.

c. Stand-alone accessory and service structures over six (6) feet in height (as defined in the Special Use Permit Guidelines) in Area E1 may be added to the Approved Plans, provided that the total square footage of all the accessory and service structures added together does not exceed three thousand (3000) square feet of Floor Area within Area E1, such additions to be provided to the Town Manager as a revised conceptual site plan. Stand-alone accessory and service structures cannot exceed sixteen (16) feet in height and must be set back a minimum of forty (40) feet for any accessory structure and sixty (60) feet for any service structure from any rights-of-way or residential property lines outside of the SUP boundaries and ten (10) feet from any non-residentially zoned property outside of the SUP boundaries.

d. Accessory structures that do not exceed six (6) feet in height above Finished Grade (raising the Finished Grade by placing fill solely for the purpose of adding additional height is prohibited) in Area E1 shall be allowed within the boundaries of Area E1, subject to approval by the Town Manager. These accessory structures shall not count towards the three thousand (3000) square feet of additional Floor Area for stand-alone accessory structures and service structures over six (6) feet in height provided for in Stipulation 49.c above.

D. TEMPORARY USES/EASEMENT/MAINTENANCE

50. Temporary tents or pavilions may be erected in the locations shown on Page E-4 of the Approved Plans, provided that such temporary tents or pavilions shall not remain erected for more than sixteen (16) consecutive days per event. No tent shall be higher than twenty-four (24) feet above Finished Grade.

51. Special events shall be permissible, with or without temporary tents or pavilions, provided these events are in accordance with the Article 8-8, Special Events on Private Property and Public Rights-of-Way, of the Town Code, with the following conditions:

    a. As allowable in said Article 8-8, Special Use Permit properties are exempt from the Special Event permit review process provided that such exempted events are limited to the type of activities that are customary and incidental to the primary uses of this Special Use Permit and any temporary tents or pavilions comply with Stipulation 50.

    b. Exemption from the Special Event permit review process does not exempt the Owner from any applicable required permit inspections related to public health, safety, and welfare by the Town, the State of Arizona, or other applicable jurisdiction. Town permit inspections are determined as follows:

        i. A permit from the Town Fire Marshal, or designee, shall be required for any structure or tent having an area in excess of two hundred (200) square feet or a canopy in excess of four hundred (400) square feet.

        ii. Review by the Town Community Development Department shall be required for the provision for and location of any portable restroom facilities.

c. Any temporary tents or pavilions not in the locations shown on Page E-4 of the Approved Plans may be approved in accordance with Article 8-8-10, Procedure for Review of Application and Appeal of Decision, of the Town Code.

d. Temporary tents or pavilions must meet a minimum setback of forty (40) feet to the exterior property line of the Property.

e. Placement of any temporary tent or pavilion shall have no adverse impact on parking or circulation.

52. The following provisions in this Stipulation 52 shall be set forth in easements and/or CC&Rs or other recorded instruments (which may include recorded plats or maps), to be recorded on (or otherwise encumber title to) the Resort or such part thereof for which such provision is germane. Such recordation shall occur concurrently with or prior to recordation of any applicable final plats or final maps as the case may be for a particular phase of development. As a condition to approval of a final plat(s) or final map(s), if such final plat or final map does not itself address the provisions in this Stipulation 52, then any necessary recorded instruments (other than the plat or map itself) shall be approved by the Town Manager; provided that, (i) the Town's review shall be limited to whether such recorded instrument satisfies the provisions in this Stipulation 52, and (ii) if the recording satisfies the provisions in this Stipulation 52, the Town's approval shall not be unreasonably withheld. Easements within any lot or parcel boundary will not affect setback measurements or determination of lot areas. Any lot within an Area can provide (by easement or otherwise) parking, drives, utilities, and signs for another lot within an Area, including lots owned by different Owners.

a. Easements

i. Vehicular and pedestrian access easements providing access to public rights-of-way as reasonably determined by the Owner and benefiting all Owners within the Resort shall be dedicated and maintained. The adequacy of such easements shall be reasonably approved by the Town Manager.

ii. Utility and drainage easements shall be dedicated to the utility provider, the Town, and/or the Owner as the case may be, as reasonably determined by the Town Manager. Any such easement shall be maintained in accordance with applicable requirements of the utility or the Town, as applicable. Where required by law, such easements shall be shown on the final plats or final maps.

b. General Maintenance Rights and Responsibilities

i. The Resort may be developed in one or more phases as provided in the 2015 Development Agreement. A general infrastructure plan for each phase shall be formulated by each Owner which shall set forth common elements for roadways, utilities (including fire service), lighting, gates, landscape, walls and other elements for the use, benefit, enjoyment and safety of all of Owner's guests, employees and other invitees of the Resort. Some of such common elements

may benefit all phases of the Resort, while others may serve only one or more phases of the Resort.

ii. A maintenance, repair, and replacement regime shall be formulated by Owner(s) and incorporated into one or more CC&Rs, which shall be a first priority lien (junior only to existing matters of record other than monetary liens and the 2015 Development Agreement) on the Resort or each particular phase, as the case may be. Said regime shall provide for governance through a master developer of the Resort or of a phase, or through an authorized or duly formulated association of certain, some, or all Owners of the Resort or phased parts thereof. Said regime shall set forth and contain the minimum following elements:

(a) All exterior portions of all structures and all roadways, parking areas, landscaping, walls, pools and lighting shall be kept and maintained in a first class condition, commensurate with a mixed use resort project serving multiple uses and Owners so that each part is benefited by the first class condition of each other part.

(b) Adequate and reasonable assessments shall be made of each Owner to reasonably fund estimated budgets for the maintenance, repair, replacement, and care of the completed Resort and/or each phase thereof.

(c) A governance mechanism to protect all Owners and insure the reasonable and adequate maintenance of all components of all phases of the Resort, including the power to access and enter upon the property of another for the purpose of enforcing the regime.

(d) Architectural guidelines to insure that the requirements of this Special Use Permit are adhered to in the initial and any redevelopment of the Resort. Such architectural guidelines may be administered through an Owner as master developer of the Resort or phase therein, a master association for the Resort, or an association for a particular phase as the case may be, it being the intention of the Town that the Resort be developed in a cohesive, cooperative and harmonious manner which adheres to the requirements of this Special Use Permit and such other requirements Owner may formulate from time to time.

c. 2015 Development Agreement Provisions

i. A mechanism for the master association to perform obligations under the 2015 Development Agreement that are to be performed by an "Owners Association," as defined in the 2015 Development Agreement.

ii. An acknowledgement applicable to the master association and all of the Owners of property governed by the master association that (i) they are bound by this SUP and the 2015 Development Agreement and (ii) an acknowledgement that this SUP and the 2015 Development Agreement constitute valid, binding and enforceable obligations, enforceable according to their terms.

iii. A release in favor of the Town as a third party beneficiary substantially in conformance with the "Five Star Release," as defined in the 2015 Development Agreement, applicable to the master association and all of the Owners of property governed by the master association.

53. The streets, drives, surface parking lots and common landscaping areas within the Property shall be constructed and maintained by the Owner. A covenant will be recorded on the Property and shall run with the land and shall be binding thereon (which may be set forth in CC&Rs) providing the Town with a right (but not the obligation) to perform repair of streets, drives, surface parking lots and common landscaping areas within the Property. In the event that the Town Manager finds, in his or her reasonable discretion, that the streets, drives, surface parking lots and common landscaping areas within the Property are not reasonably maintained, the Town may give the Owner of the affected area and the Owner(s) of all lot(s) or unit(s) within the Area a written notice to undertake appropriate maintenance to cure such condition. Notice pursuant to this Stipulation 53 shall be given by certified mail to an Owner to the address as shown on the records of the Maricopa County Assessor. If the condition remains uncured for sixty (60) days after notice thereof in writing is given by the Town, or if the condition is such that it cannot be reasonably corrected within sixty (60) days, the correction thereof not having been commenced and thereafter diligently prosecuted within sixty (60) days from receipt of such written notice, the Town may enter the Property and perform such work necessary to cure the condition. In connection with the foregoing work, the Town may assess the actual, reasonable costs and expenses related to such work against the Owner(s) of the lots/units within such Area on a pro rata, per lot/unit basis (based on gross square footage of all lots/units) and such Owner(s) shall remit payment to the Town within thirty (30) days after receipt of an invoice together with the reasonable supporting materials from the Town. If an Owner fails to remit its prorated payment within the thirty (30)-day period, the Town may file a lien against such Owner's lot/unit for any such unpaid amount due to the Town and enforce such lien as provided by and pursuant to Arizona law; provided that the Town shall, under any circumstances, be required to provide no less than thirty (30) additional days written notice to such Owner(s) prior to filing any lien pursuant to this Stipulation 53.

E. PARKING AND CIRCULATION

54. Parking shall meet or exceed the parking requirements set forth on in the parking study incorporated into the Approved Plans. Any change in use of the Resort that increases the parking demand over the parking requirements set forth in the parking study incorporated into the Approved Plans must be approved as a minor amendment to this Special Use Permit. The Owner shall submit a revised parking study which reflects the parking demands of the final Approved Plans within thirty (30) days of the Effective Date.

55. All contracts between the Resort Hotel Owner and any valet company or other parking company shall include an acknowledgment and agreement that such company shall not park any vehicles on public streets in the Town. Buses and other vehicles may be used to shuttle guests or employees to or from parking areas not located on the Resort, and between the Resort and other destinations (e.g., airport, shopping facilities, golf courses,

attractions, etc.). Any catering agreement between Resort Hotel Owner and any resident or guest booking events at the Resort shall include an acknowledgement and agreement that catering vehicles may not park on public streets in the Town.

56. Unlicensed support vehicles (i.e., golf carts, utility vehicles, etc.) may be used to transport guests and residents and provide services to any Area of the Resort, but shall not be used or parked on any public street.

57. All designated fire lanes shall maintain a vertical clearance of fourteen (14) feet above Finished Grade and a horizontal clearance of twenty (20) feet to allow passage of emergency vehicles, and must meet all current Arizona Department of Transportation standards. Emergency access points are only to be utilized for emergency vehicles; no deliveries or other use of emergency access points is allowed.

58. At any time when the parking demand within the Resort is expected to exceed onsite capacity, the Owners of the affected areas shall initiate a parking management plan, which may include valet parking or offsite parking arrangements (but not the use of parking on any public street within the Town).

59. All streets, drives, sidewalks, and paved areas constructed shall remain private; provided, however, that all new streets constructed shall be in compliance with Page D-12 of the Approved Plans and shall be of adequate width and design, as determined by the Town, to permit the provision of fire and police protection to the Property.

60. The eight (8) feet wide public trail located in the Open Space Corridor shall remain ungated and unobstructed at all times except as necessary for storm events and maintenance. The trail must meet Americans with Disabilities Act requirements.

61. Proposed guard gates and guardhouses shall be in the general locations shown on the Resort Wall Master Plan to be approved by the Town Manager and must meet the standards of the Special Use Permit Guidelines and the Zoning Ordinance in effect as of the Approval Date.

62. All proposed cul-de-sacs in Areas B and C shall have a right-of-way radius of not less than forty-five (45) feet with an improved traffic circle having a radius of not less than forty (40) feet.

63. No loading, truck parking, trash containers, or outdoor storage area shall be located within one hundred (100) feet of residentially zoned property outside of the Property's boundaries. All such areas shall provide visual and noise screening to minimize impacts on adjacent residential property.

F. MANAGEMENT

64. There shall be at least one person at the Resort at all times who has been thoroughly briefed on the provisions of this Special Use Permit and who has the authority to resolve all problems related to compliance with this Special Use Permit and compliance with the Town Code. All calls from Town residents to the Town or Resort regarding noise or

disturbances shall be referred to and addressed by such person(s). Maintenance of the Resort in general, and all common areas specifically, shall be coordinated through a single unified management entity, which may be the Owner of the Principal Resort Hotel or a master association of Owners.

65. At all times, the Property shall remain under unified management through a master association and shall be operated as an integrated resort facility. There may be sub-associations relating to specific Area(s) within the overall Property. Area E1 may be under a separate management company on behalf of the owners/landlord(s).

G. COMMUNITY OUTREACH

66. Subsequent to the approval of this Ordinance, the Owner shall implement the Community Outreach Plan set forth on Schedule 2.

H. PLAT AND MAP APPROVAL

67. Plat and map approval shall be processed in accordance with the terms of the 2015 Development Agreement.

SCHEDULE 1
TO
THE RITZ-CARLTON STIPULATIONS

Approved Plans

The Approved Plans consist of Book 1 to SUP-15-01, that book entitled as "Ritz-Carlton Resort Approved Plans" and dated December 17, 2015 along with the following as approved by the Town:

Wastewater Master Plan
Drainage Report
Parking Analysis
Master Traffic Impact Analysis

These documents are on file at the Town of Paradise Valley Clerk's Office and may be viewed during normal business hours.

Town Hall
6401 E. Lincoln Drive
Paradise Valley, AZ 85253

THE RITZ-CARLTON®

The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application

December 17, 2015

FIVE STAR DEVELOPMENT

Approved Plans

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The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
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December 17, 2015 - DRAFT

FIVE STAR DEVELOPMENT

SECTION B - Project Team

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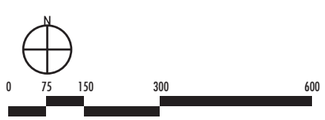
FIVE STAR DEVELOPMENT

SECTION D - Master Plan

MASTER PLAN

Area	Description
A	Ritz-Carlton Resort Hotel
A1	Ritz-Carlton Resort Villas
B	Resort Related Luxury Homes
C	Ritz-Carlton Resort Branded Homes
D	Resort Related Attached Residences
E1	Resort Related Retail
E2	Resort Related Mixed Use (Final Site Plan Deferred)



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FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
Approved Plans

December 17, 2015

THE RITZ-CARLTON®

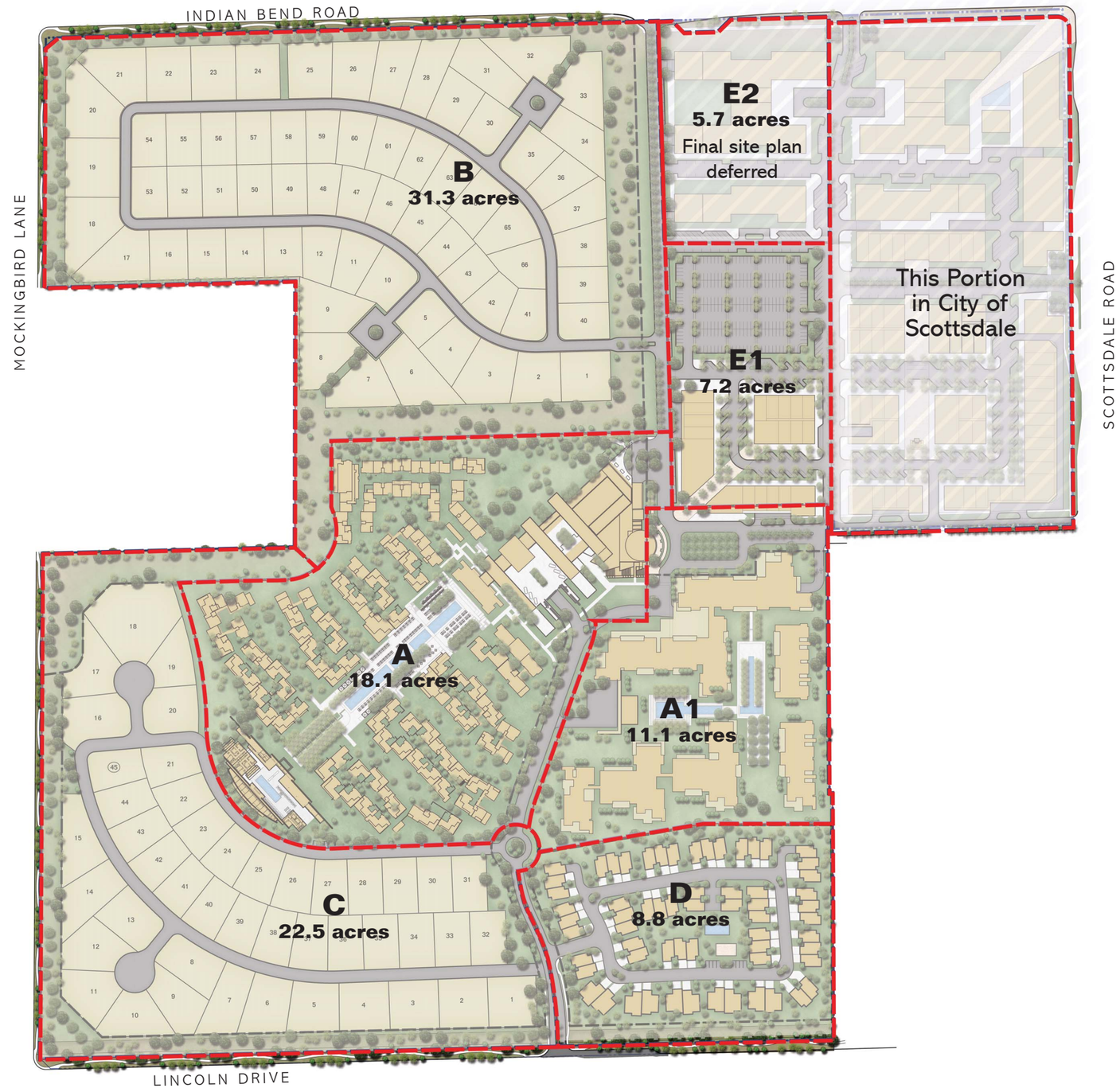
MASTER PLAN

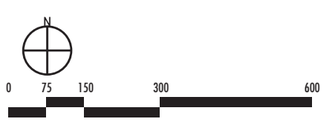
Land Use Plan

D-1

MASTER PLAN

Area	Description	Acreage
A	Ritz-Carlton Resort Hotel	18.1
A1	Ritz-Carlton Resort Villas	11.1
B	Resort Related Luxury Homes	31.3
C	Ritz-Carlton Resort Branded Homes	22.5
D	Resort Related Attached Residences	8.8
E1	Resort Related Retail	7.2
E2	Resort Related Mixed Use (Final Site Plan Deferred)	5.7
	TOTAL	104.7 Acres- Post Dedication





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FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

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AREA PLAN

Land Use Plan

D-2

2015 Proposed SUP Overview

Area	Land Use Product	Gross Acreage	Proposed Residential Units	Residential Lot Sizes	Average Unit Size Conditioned, sf [9]	Maximum Total Residential Floor Area, sf [4]	Maximum Total Resort Related Floor Area, sf [4]	Lot Coverage: Drip Line Area, sf	Area Coverage, Percentage [1]	Maximum Height, ft [2]
A	The Ritz-Carlton Resort Hotel	18.1	Public Spaces				352,000	234,000	29.7%	48'
			200 Hotel Rooms							24'
	Accessory & Service Structures						15,000			16'
A1	Ritz-Carlton Resort Villas	11.1	94 Resort Villas				328,000	149,000	30.8%	36'
	- Food & Beverage						32,000			24'
	Subtotals - A & A1	29.2					727,000	383,000	30.1%	
B	Resort Related Luxury Homes	31.3	66	10,000 sf min	4,000	453,750		336,600	24.7%	20' /24' [3]
				13,540 sf avg [9]						
				20,320 sf max [9]						
C	Ritz-Carlton Resort Branded Homes	22.5	45	12,000 sf min	4,000	309,375		236,250	24.1%	20' /24' [3]
				14,191 sf avg [9]						
				37,605 sf max [9]						
D	Resort Related Attached Residences	8.8	53		2,800	197,175		94,918	24.6%	20'/24'/36' [5]
E1	Resort Related Retail	7.2					78,400	78,400	25.0%	30'
	Accessory & Service Structures						3,000			16'
E2	Resort Related Mixed-Use (Deferred)	5.7 [10]								
	Subtotals B,C,D & E1	69.8				972,825	81,400	748,200	24.6%	
	Total All Parcels (excluding E2)	99.0	Post Dedication			972,825	808,400	1,131,200	26.2%	

Total Square Footage

Residential	960,300
Resort Related	808,400
Total Proposed	1,768,700 sf

Area Setbacks (from post dedication property lines)

North of Lincoln Drive:	50'
East of Mockingbird Lane:	50'
South of Indian Bend Road:	30'
North and East of St. Barnabas Church	10'

Single Family Dwelling Units per Acre

Parcel B	66	du
Parcel C	45	du
Total	111	du

Net Acres	53.8	ac [6]	2.06	du/ac
Gross Acres	54.5	ac [7]	2.04	du/ac
Improved Acres	56.5	ac [8]	1.96	du/ac

Notes:

(1) Area coverage is calculated using drip line of structures including trellises at 50% coverage. Current area coverage values are an approximation. Area Coverage in Area B and Area C will be permitted up to the limits established by the maximum Floor Area for each area.

(2) The maximum heights indicated are measured from finish grade. Finish grade is no more than 2' above existing grade or as depicted on Page E-6 and/or H Page H-6.

(3) Residential lots adjacent to public roadway are limited to one story and a 20' maximum height. Specific lots are depicted on Page F-2 and F-3.

(4) Gross area including at-grade garages, patios, trellises, overhangs but excluding fully subterranean basements

(5) 36' (three story) height only occurs as a buffer along the eastern border. Third floor: interior area will not exceed 50%, exterior covered will not exceed 10%, exterior uncovered will not exceed 10% of the second floor area. One story units are limited to 20' in height, two story units are limited to 24' in height. See Page F-4 for specific unit height limitations.

(6) Post-dedication acreage excluding the 1.1 acres earmarked for the Lincoln Drive right-of-way dedication

(7) Pre-dedication acreage including the 1.1 acres earmarked for the Lincoln Drive right-of-way dedication

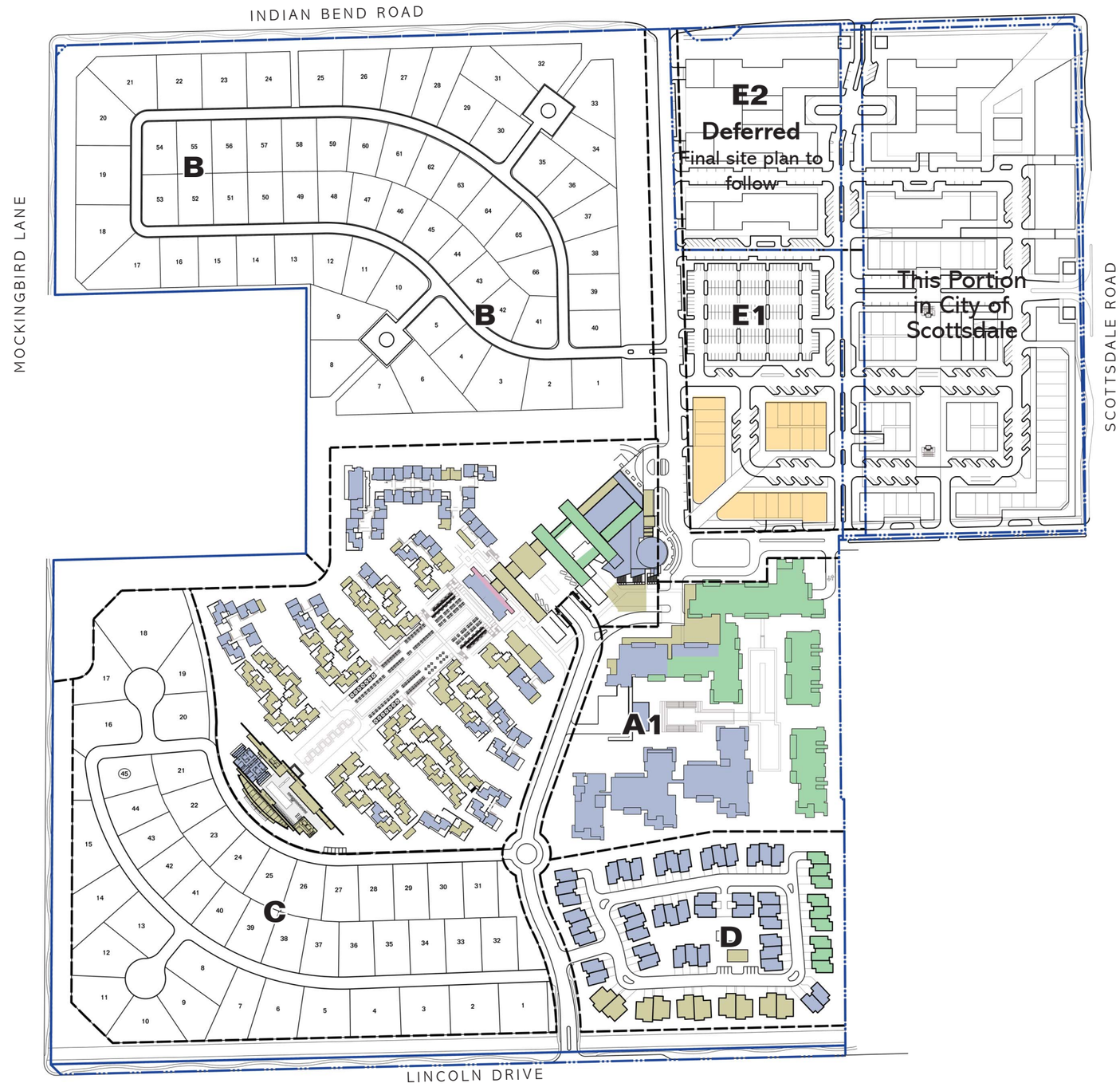
(8) Improved Acres include landscaped right-of-way (to the back of curb) in addition to the perimeter Area Setbacks

(9) Illustrative values only

(10) The acreage for Area E2 is excluded from the overall Area Coverage calculation

LEGEND

One Story Building:	14' - 20' above finish grade
Two Story Building:	20' - 28' above finish grade
Three Story Building	28' - 36' above finish grade
Hotel Lobby Roof	48' above finish grade
Single Story with a	30' maximum height



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FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
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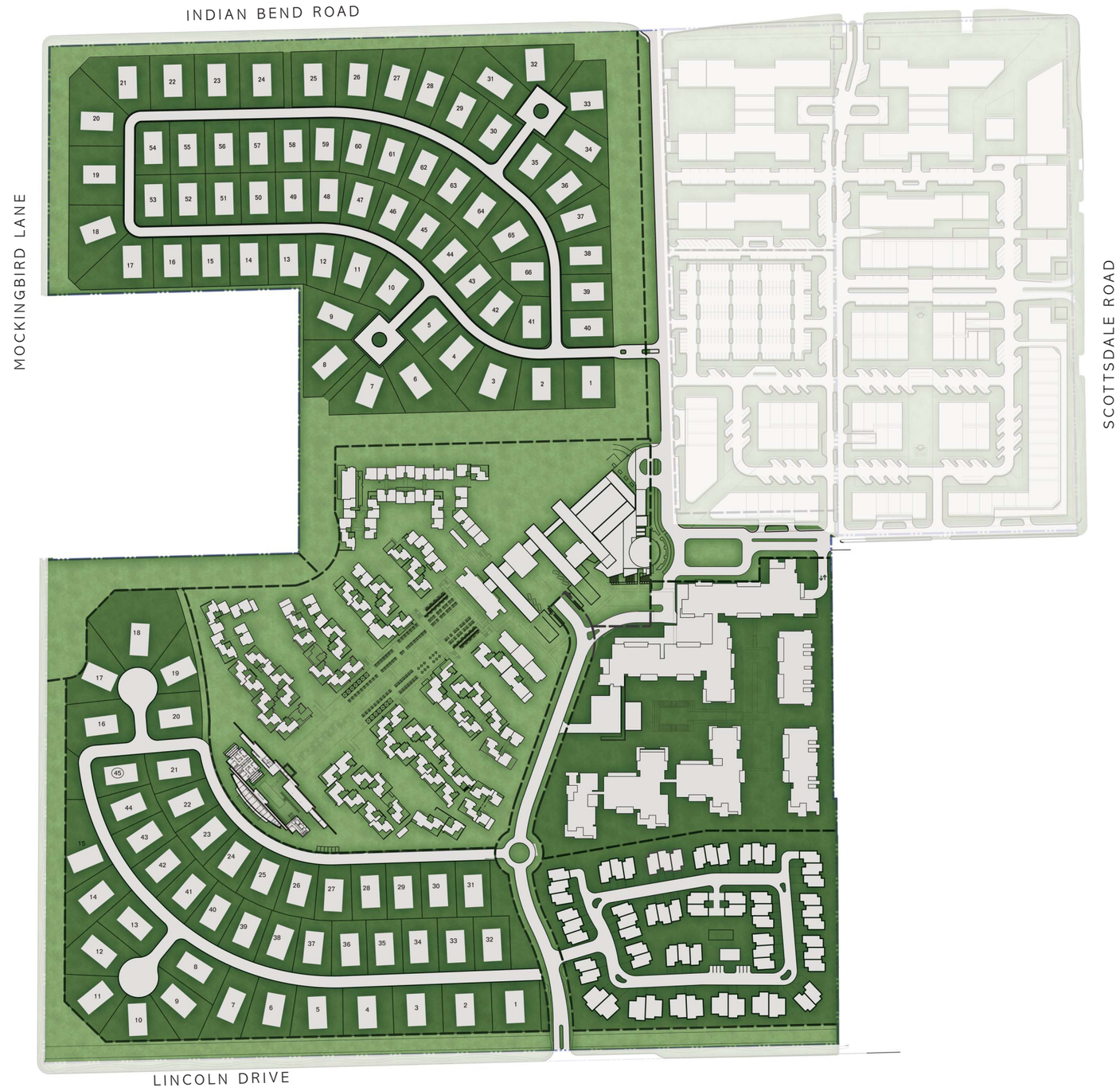
December 17, 2015

THE RITZ-CARLTON®

PROJECT HEIGHTS

Hotel | Residential | Mixed Use



	Open Space (Public)		
	Open Space (Private)		
	Total Open Space	66.08 ac	(71%)
	Roads & Building Structures	26.52 ac	(29%)
	Total	92.60 acres	

Note: At all times, the total of the public and private open space is to meet or exceed 40%.

N

0 75 150 300 600

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FIVE STAR DEVELOPMENT

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OPEN SPACE PLAN

PLANT PALETTE

to occur at the base of the two entry monuments which may include but not limited to the following:

Trees
Blue Palo Verde
Desert Willow
Ironwood

Shrubs
Hopbush
Fairy Duster
Desert Bird of Paradise
Desert Ruellia
Brittle Bush
Chuparosa
Globe Mallow

Accents
Agave sp.
Opuntia sp.
Dasylirion sp.
Desert Milkweed

Ground Cover
Lantana sp.
Verbena sp.
Desert Marigold

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ENTRY RENDERINGS

Welcome to Town of Paradise Valley

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ENTRY RENDERINGS

Lincoln Drive at Mockingbird Lane

D-7

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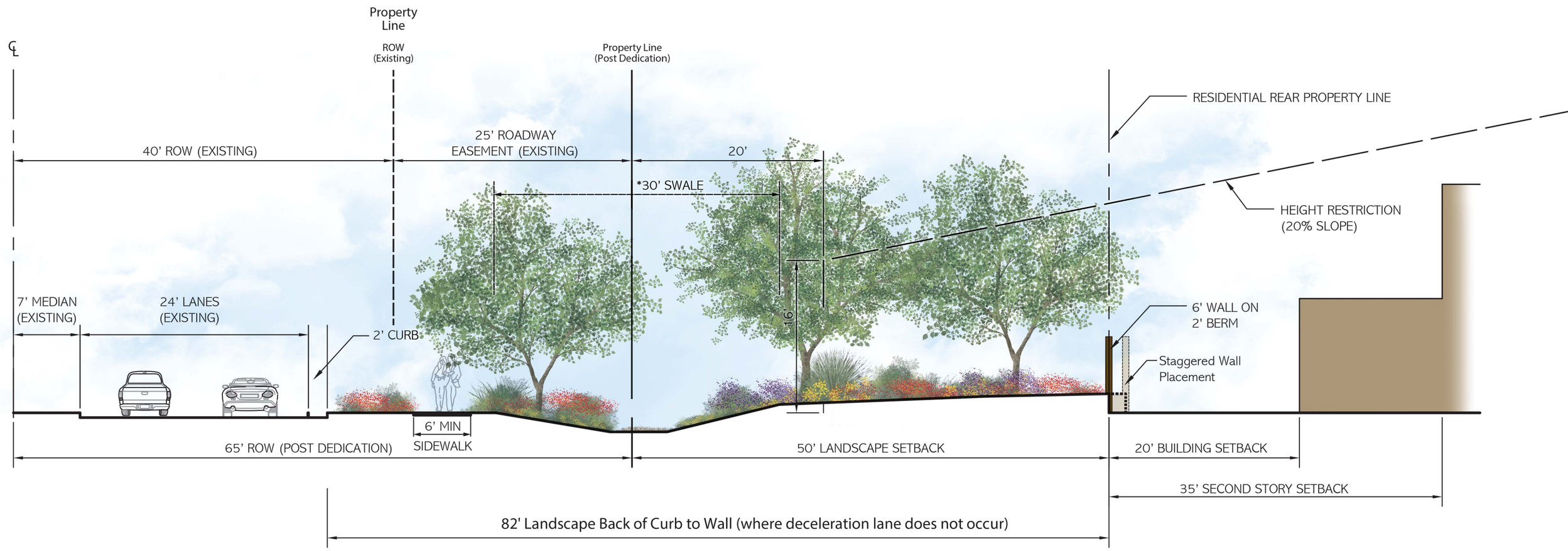
ENTRY RENDERINGS

Lincoln Drive at Resort Entrance

D-8



*PENDING FINAL TOWN APPROVED ENGINEERING

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THE RITZ-CARLTON®

ROAD SECTIONS

Lincoln Drive Typical

D-9

ANTICIPATED TRANSITIONAL DESERT PLANT PALETTE

(May include but not limited to)

Trees

Foothills Palo Verde
Desert Willow
Ironwood

Shrubs

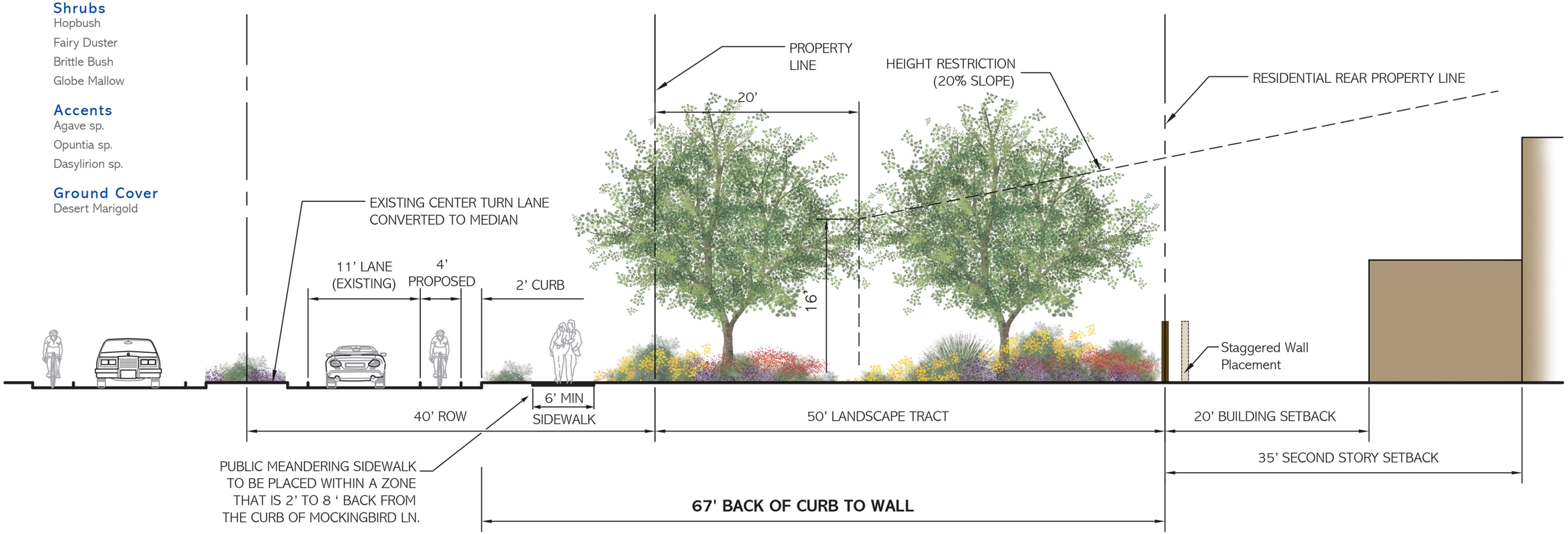
Hopbush
Fairy Duster
Brittle Bush
Globe Mallow

Accents

Agave sp.
Opuntia sp.
Dasylirion sp.

Ground Cover

Desert Marigold



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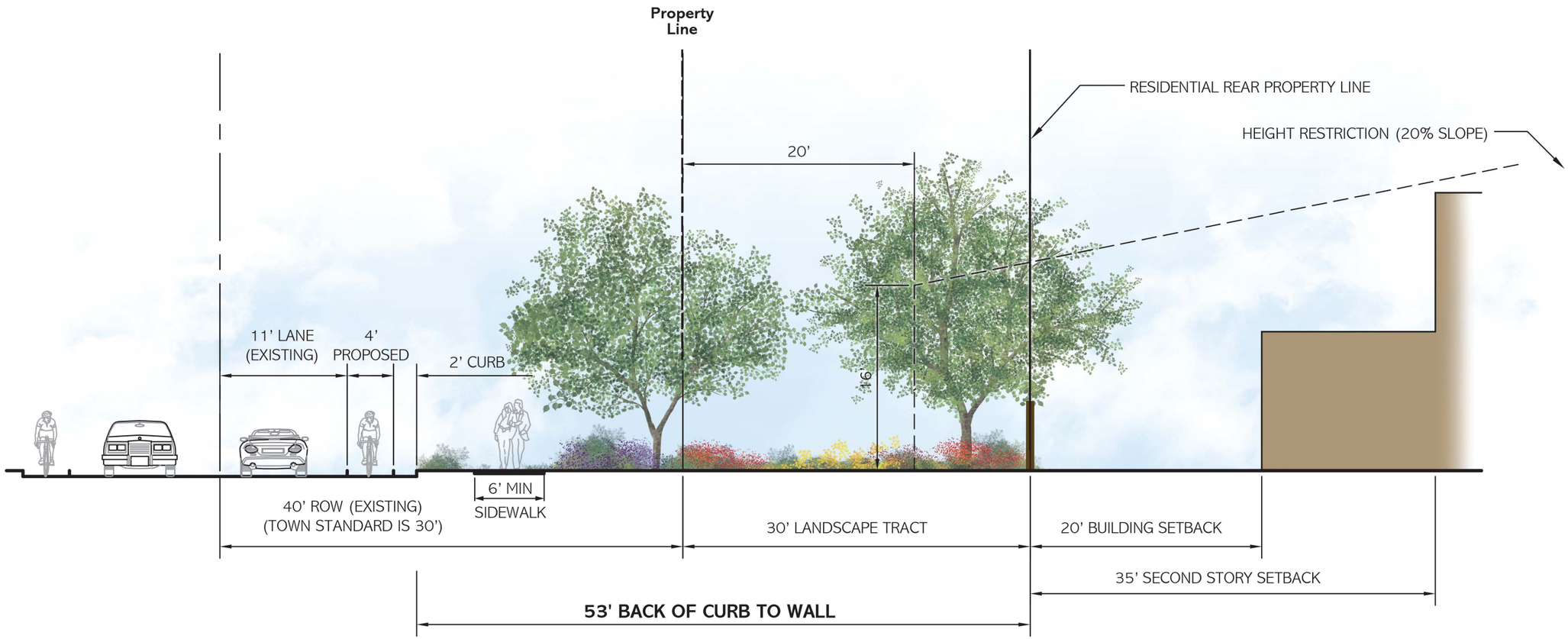
ROAD SECTIONS
Mockingbird
D-10



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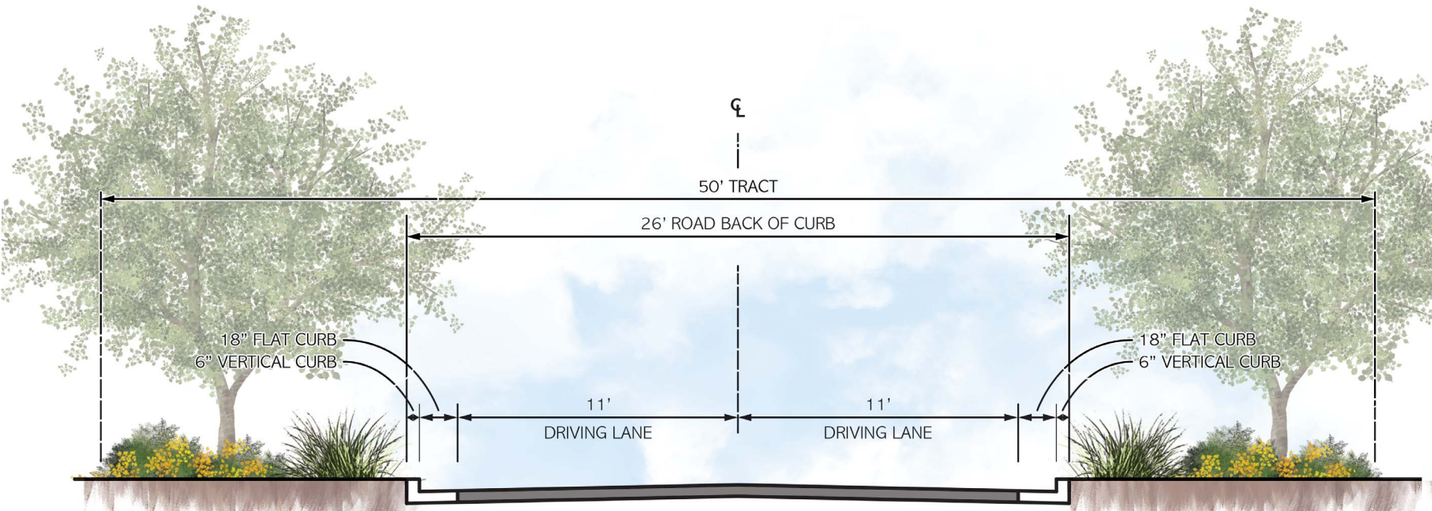
THE RITZ-CARLTON®

ROAD SECTIONS

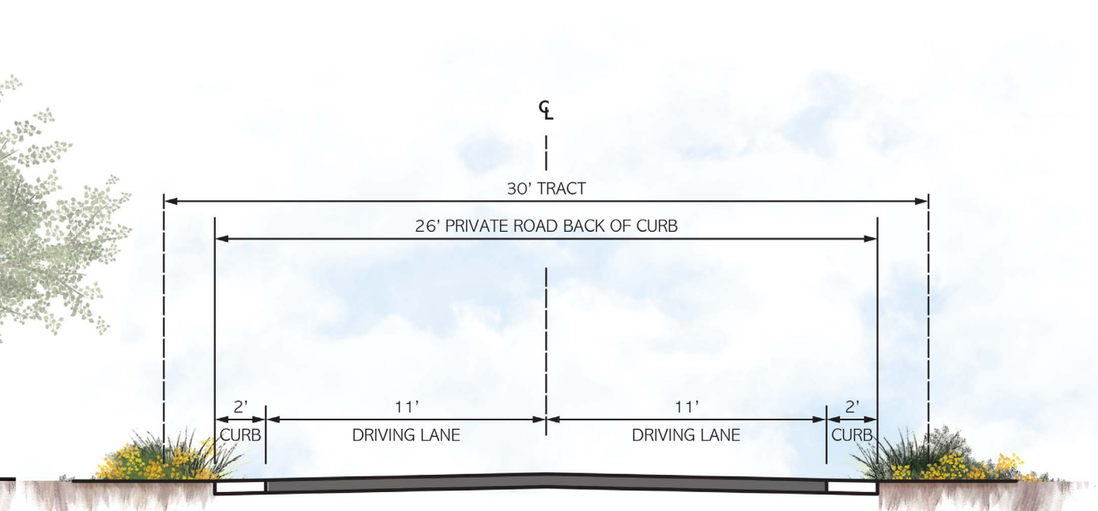
Indian Bend (No Channel)

D-11



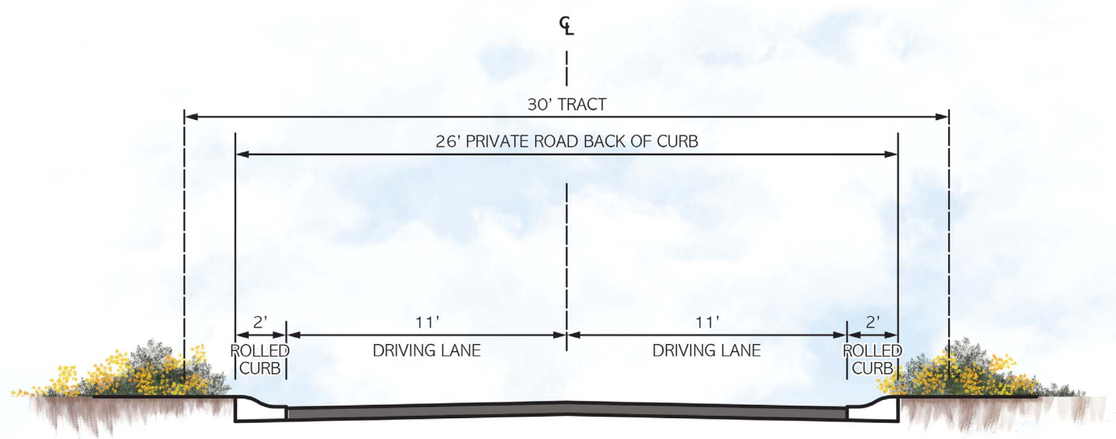
RESORT ENTRY DRIVE

(Northbound from Lincoln)
(Southbound from Indian Bend)



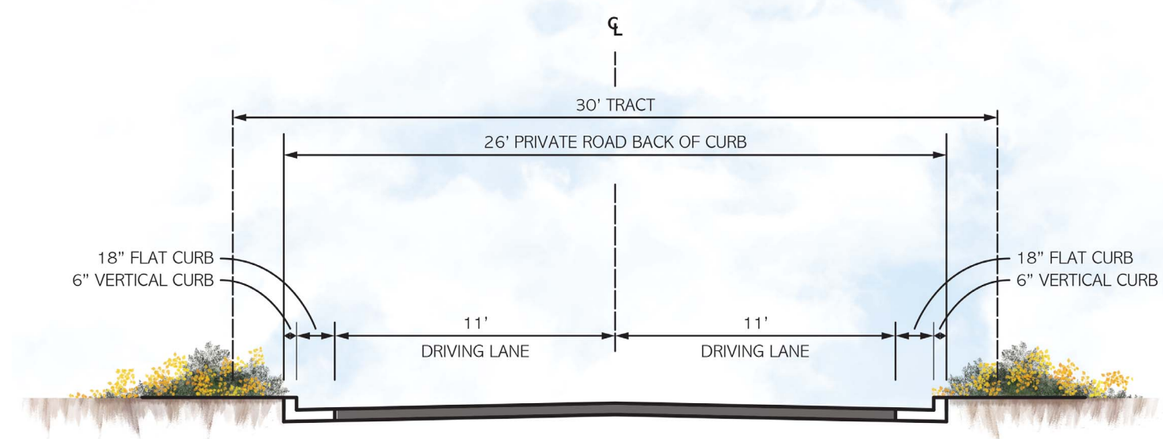
FLAT CURB

Local Private Road
(Area B, C, and D)



ROLLED CURB

Local Private Road
(Area B, C, and D)



VERTICAL CURB

Local Private Road
(Area B, C, and D)

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FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
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THE RITZ-CARLTON®

ROAD SECTIONS

Internal Sections

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The Ritz-Carlton Resort

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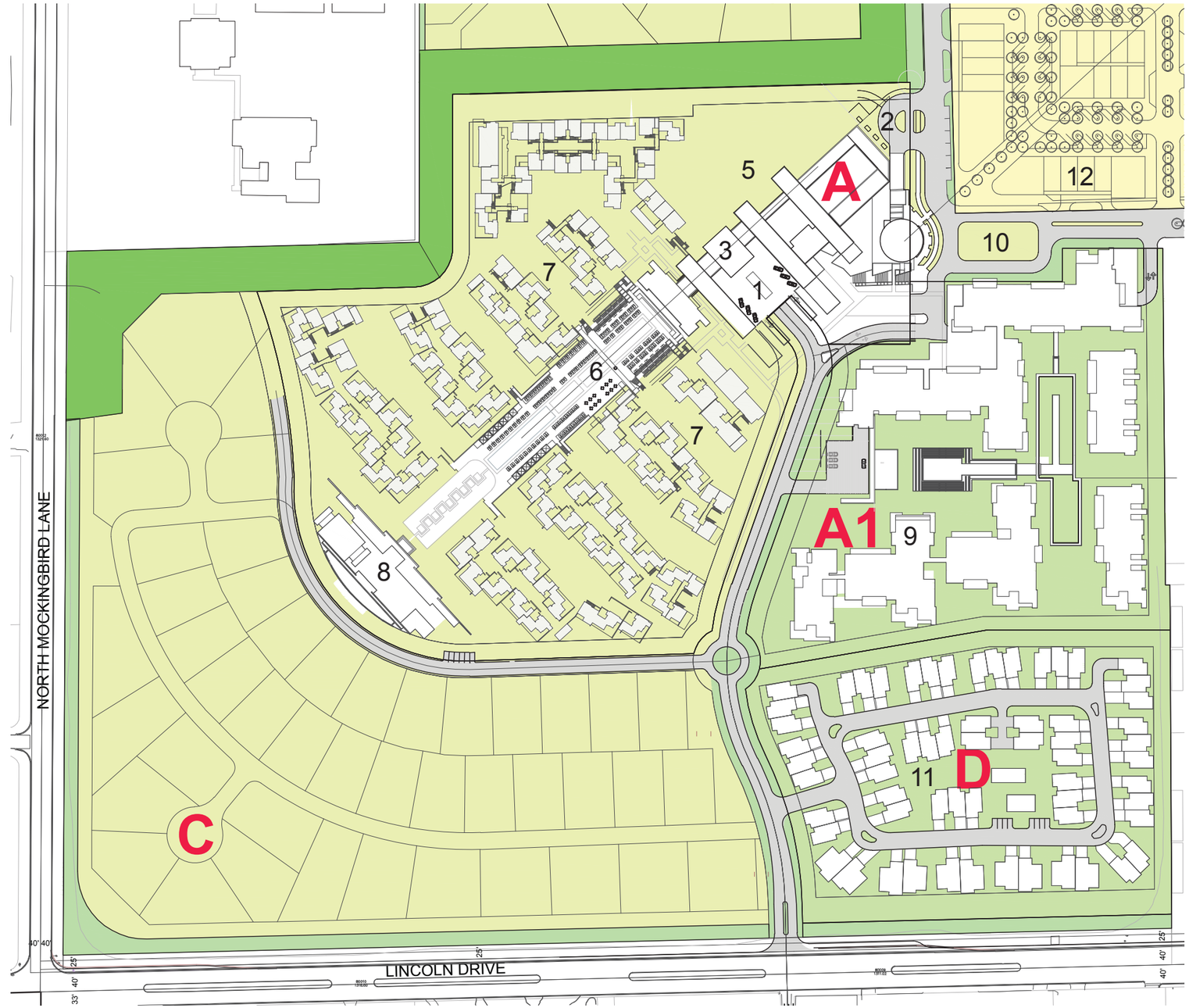
FIVE STAR DEVELOPMENT

SECTION E - Resort Hotel



LEGEND

1	Arrival Court | Reception
2	Ballroom Dropoff
3	Lobby
4	Ballrooms | Meeting Space
5	Outdoor Function areas
6	Oasis Pool Area
7	Guestroom Casitas
8	Spa | Fitness
9	Ritz-Carlton Resort Villas
10	Palm Court Plaza
11	Resort Related Attached Residence Village
12	Palmeraie Retail Center

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FIVE STAR DEVELOPMENT

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THE RITZ-CARLTON®

RESORT HOTEL

Site Plan

E-1

HOTEL SUMMARY PROGRAM

GUESTROOMS	
Typical Guestrooms (120)	67,000 sf
Suites (80)	90,000 sf
Guestroom Support	13,800 sf
PUBLIC AREAS	
Lobby | Lobby Bar | Reception | Retail	7,000 sf
Restaurants (2)	6,000 sf
Ballrooms | Meetings	35,000 sf
Spa | Fitness | Club Lounge	15,000 sf
Misc	15,000 sf
BACK OF HOUSE AREA	60,200 sf
TOTAL HOTEL	290,000 sf
Underground Parking (390 stalls)	168,000 sf

RITZ-CARLTON RESORT VILLA PROGRAM

VILLA UNITS (94 units)	259,700 sf
VILLA SUPPORT (Lobby | support | circulation | MEP)	68,300 sf
TOTAL RESIDENTIAL VILLA PROGRAM	328,000 sf
Underground Parking (268 stalls)	91,000 sf

Note: All area sizes are approximate and are subject to modification within the limits of the Total Floor Area identified on Page D-3.

LEGEND

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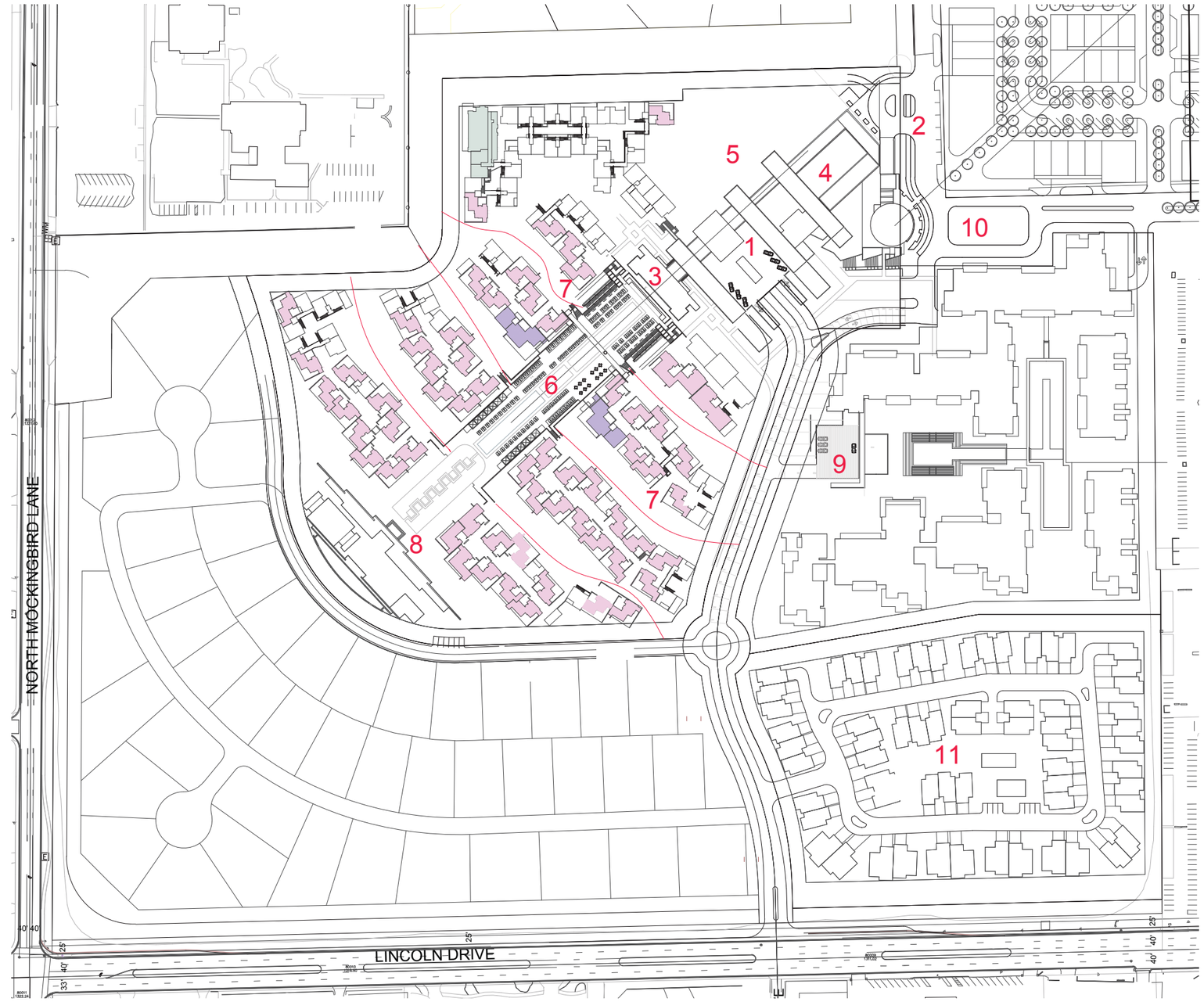

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THE RITZ-CARLTON®

RESORT HOTEL

Hotel Program | Suite Locations

E-2

LEGEND

EQUIPMENT SCREENING NOISE MITIGATION

1 Hotel Cooling Tower -
- Full height perimeter sound wall
- Trellised roof
- Integral sound attenuation

2 Hotel Guestroom Mechanical -
- Perimeter sound wall at roof
- Trellised roof
- Integral sound attenuation

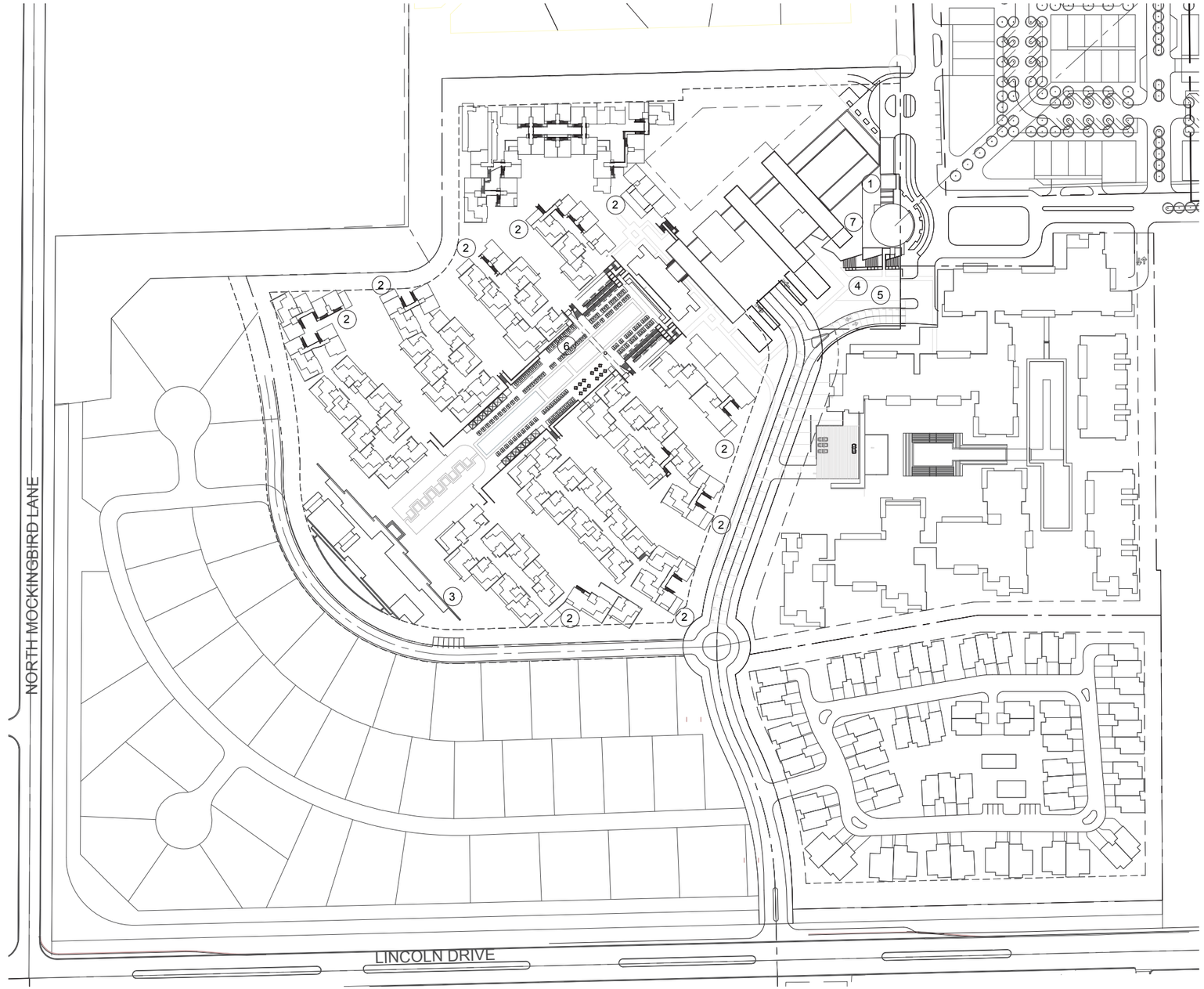
3 Spa Mechanical -
- Perimeter sound wall at roof
- Trellised roof
- Integral sound attenuation

4 Emergency Generator -
- Fully enclosed within building
- Sound attenuation louvers

5 Loading Dock -
- Full height perimeter walls
- Solid loading yard gate

6 Pool Equipment Room -
- Fully enclosed within building
- Sound attenuation louvers

7 Air Handler Rooms -
- Fully enclosed within building
- Sound attenuation louvers



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The Ritz-Carlton Resort

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THE RITZ-CARLTON®

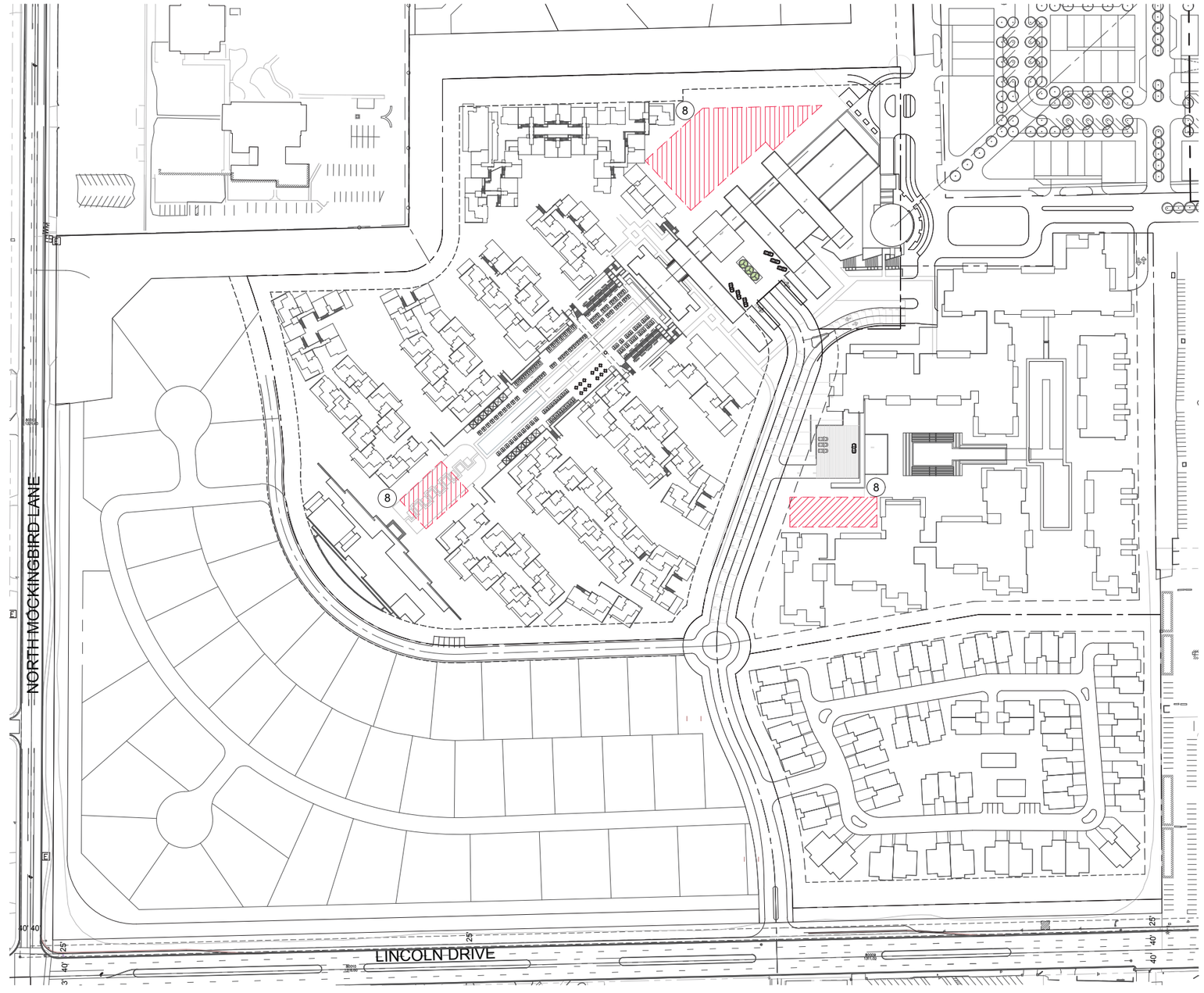
RESORT HOTEL

Equipment Screening Noise Mitigation

E-3

LEGEND

8 Event Lawn Tent Location



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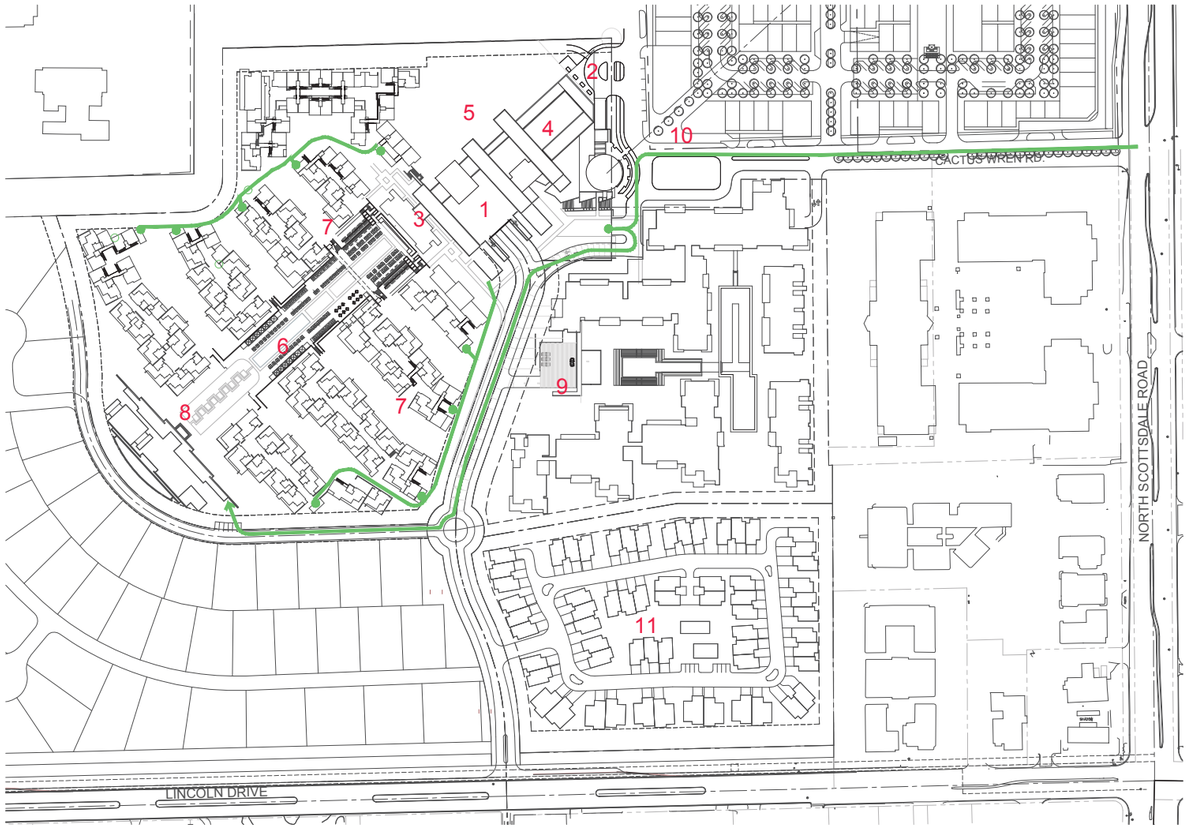
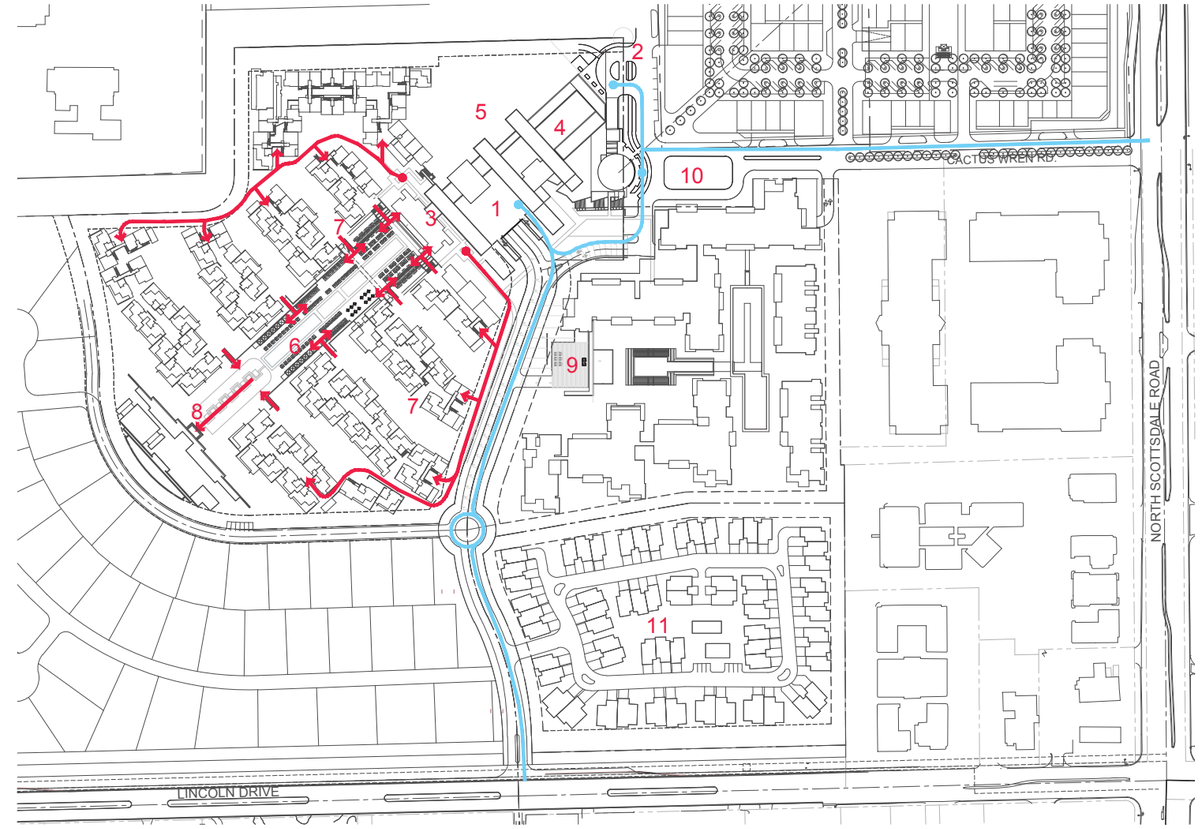
THE RITZ-CARLTON®

RESORT HOTEL

Event Tent Location

E-4





Off Site Public Circulation Routes

On Site Public Circulation Routes

Service Circulation Routes

LEGEND

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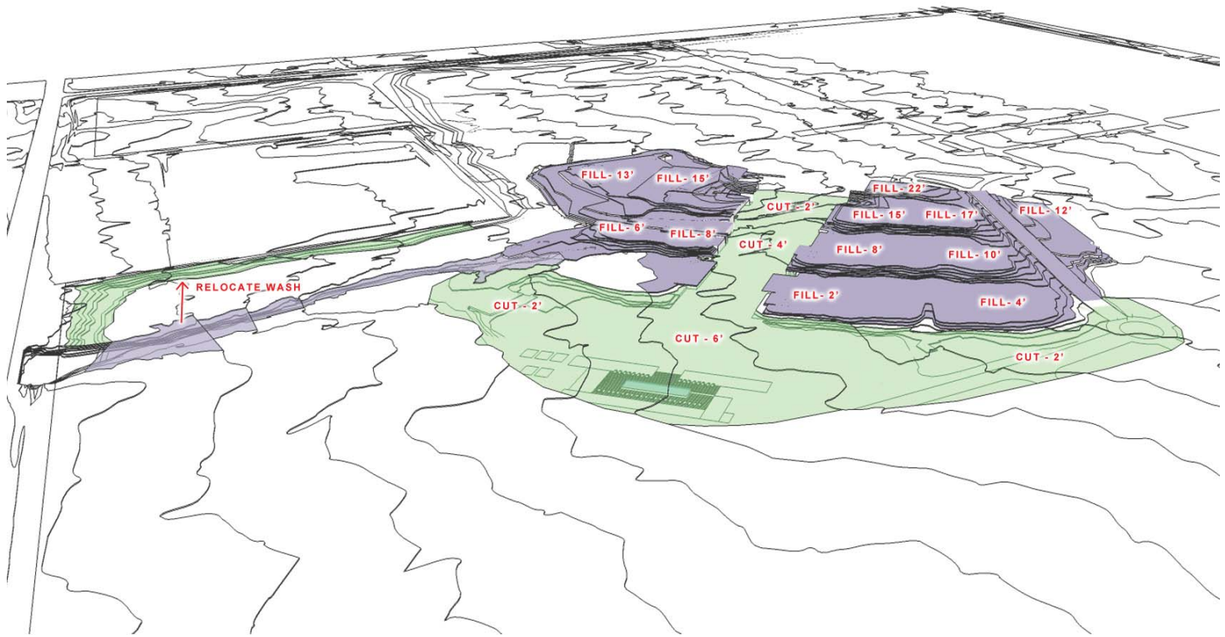
THE RITZ-CARLTON®

RESORT HOTEL

Hotel Circulation

E-5



CUT + FILL DIAGRAM

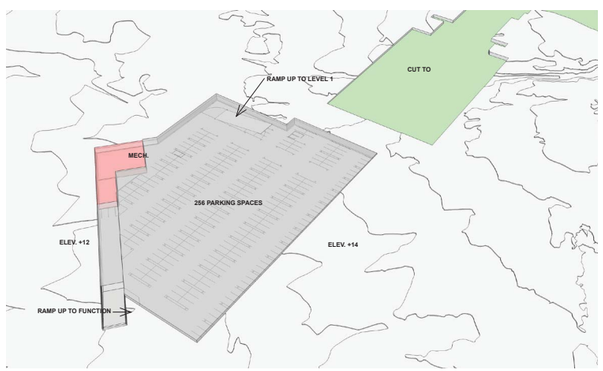
HOTEL GRADING

The hotel site slopes down, away from Camelback Mountain. In order to create and maintain views toward the mountain, the site is being re-contoured to raise the hotel lobby approximately 22 feet above existing grade. The hotel entry drive will rise up to the Lobby | Porte Cochere from Lincoln Drive. The hotel site grades are set as follows:

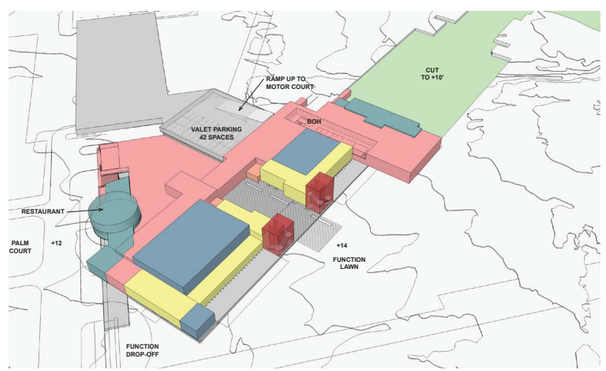
- The central axis of the Oasis Pools is set at elevation 10.
- The Spa is set at elevation 8.
- Level 01 of the Main Hotel building is set at elevation 14.

The fill areas are not massive. The main building creates the transition from the Lobby Level to the Palm Court | Palmeraie Shopping District.

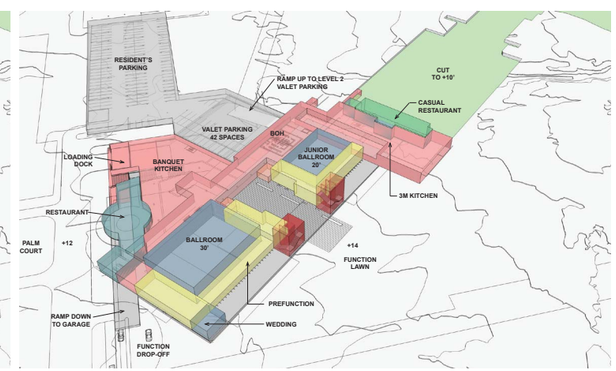
Contour elevations shown are based on NAVD29 survey datum. Elevations will be adjusted during the final design to the currently accepted NAVD88 Town of Paradise Valley datum.



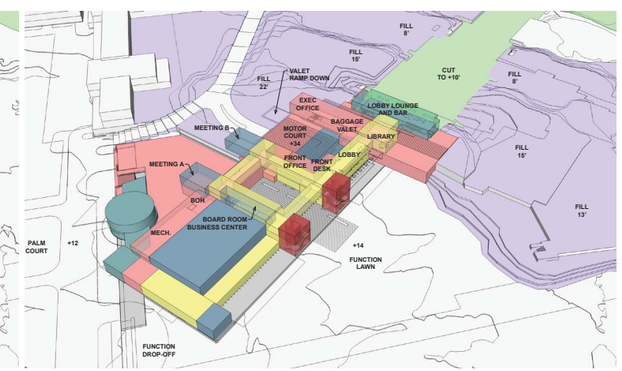
BASEMENT PARKING
EL 0



LEVEL 1 - BALLROOMS | BOH
EL 14



LEVEL 2 - VALET PARKING | RESTAURANT
EL 24



LEVEL 3 - LOBBY
EL 34

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FIVE STAR DEVELOPMENT

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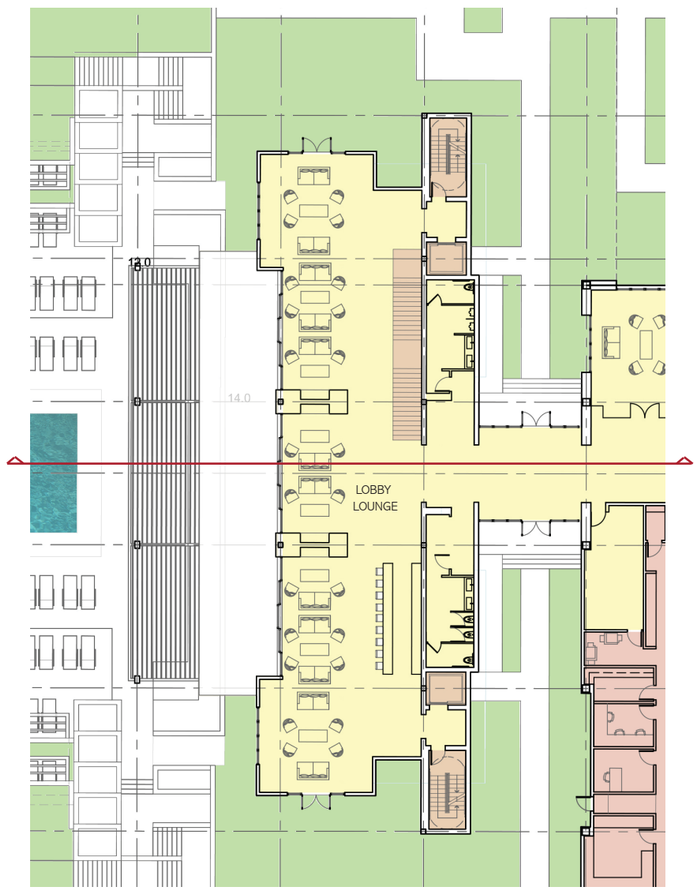
THE RITZ-CARLTON®

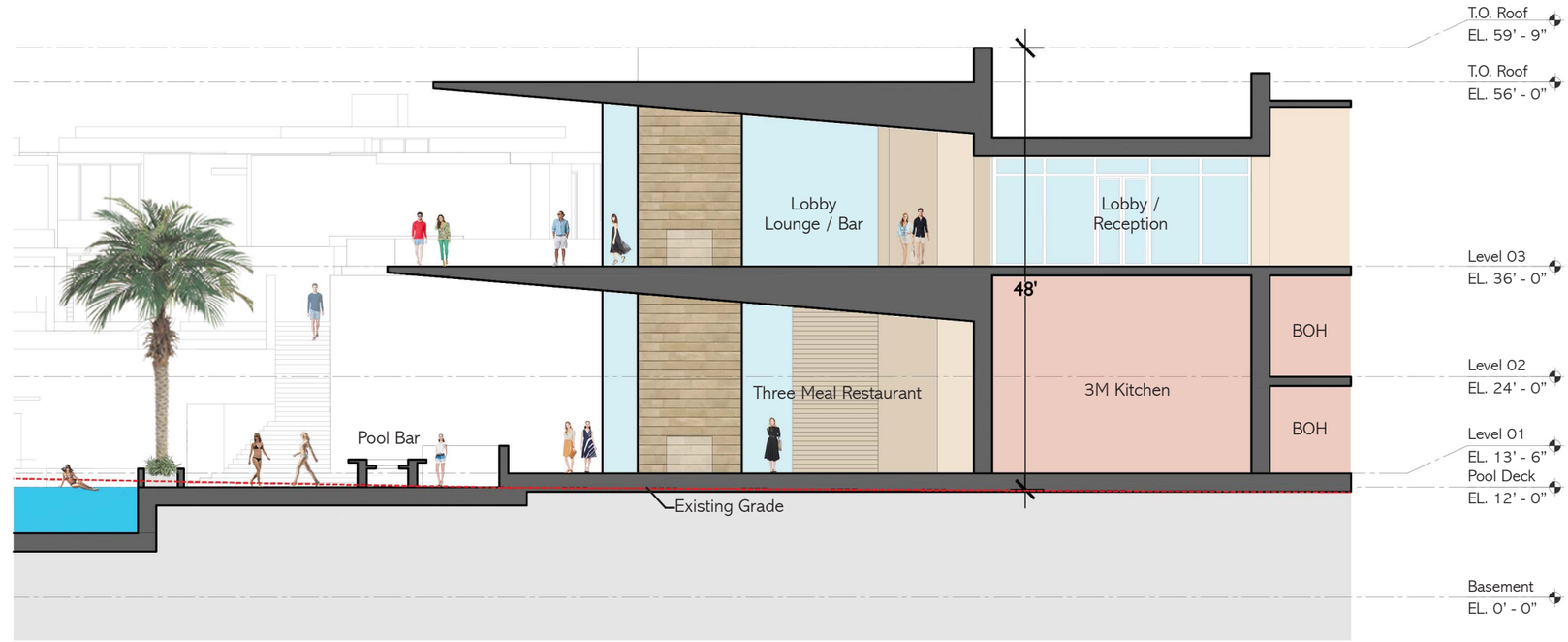
RESORT HOTEL

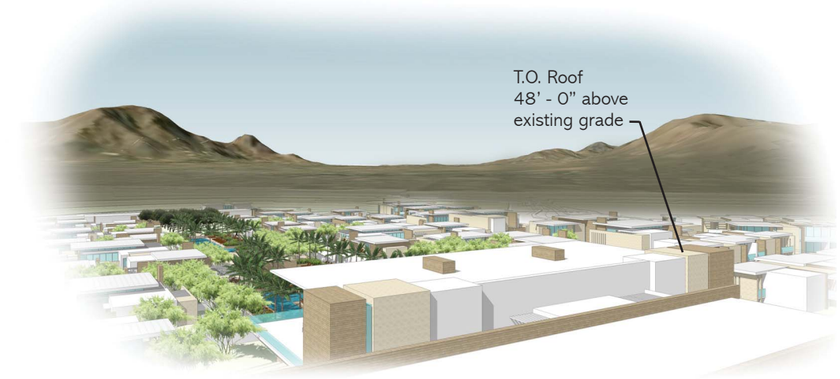
Illustrative Hotel Site Grading

E-6



LOBBY LOUNGE - LEVEL 03





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THE RITZ-CARLTON®

RESORT HOTEL

Enlarged Lobby Building Section

E-7

1A

1B

2

3

4B

2

5

4A

KEYNOTES

- 1A STUCCO A
  3/4'TH INTERGRAL COLOR SMOOTH STUCCO
  LIGHT BEIGE
- 1B STUCCO B
  3/4'TH INTERGRAL COLOR SMOOTH STUCCO
  TAN
- 2 STONE
  DARK HONED LIMESTONE
- 3 STONE PAVERS
- 4A GLAZING WITH DEEP MULLION CAPS
- 4B GLAZING WITH GLASS FINS
- 5 GLASS RAILING

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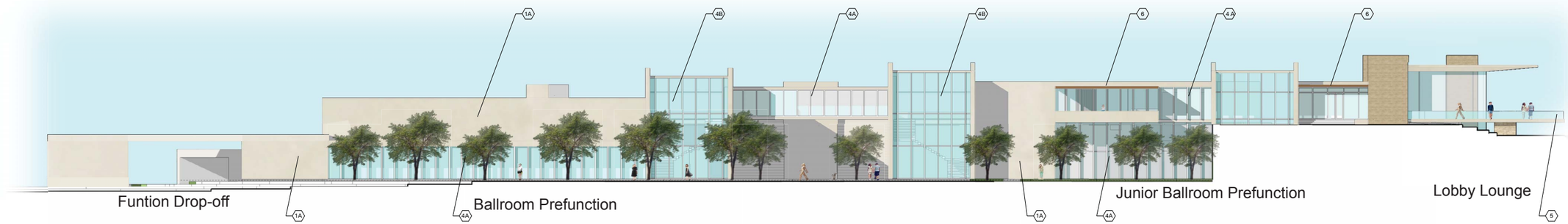
THE RITZ-CARLTON®

RESORT HOTEL

Main Building Materials

E-8



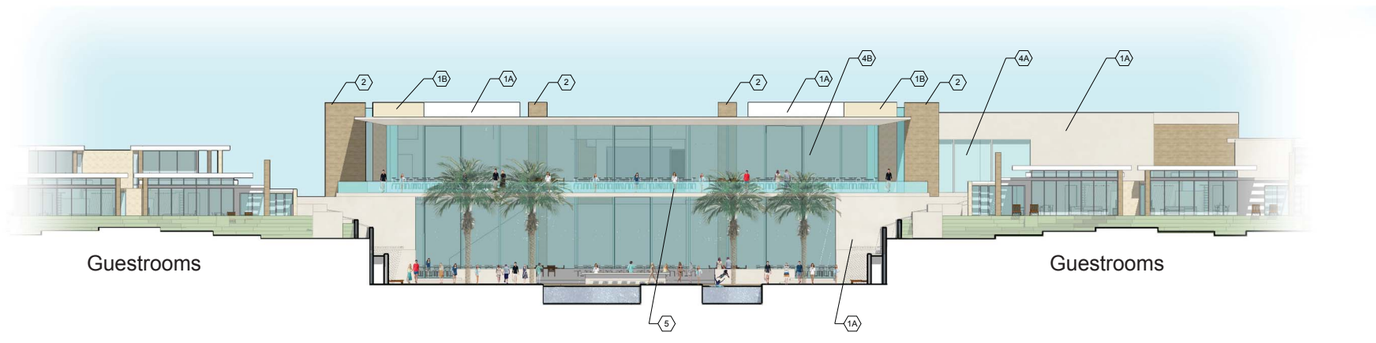
MAIN BUILDING - NORTHWEST ELEVATION (FUNTION LAWN)

MAIN BUILDING - EAST ELEVATION (PALM COURT)

KEYNOTES

- 1A — STUCCO A
  3/4"TH INTERGRAL COLOR SMOOTH STUCCO
  LIGHT BEIGE
- 1B — STUCCO B
  3/4"TH INTERGRAL COLOR SMOOTH STUCCO
  TAN
- 2 — STONE
  DARK HONED LIMESTONE
- 3 — STONE PAVERS
- 4A — GLAZING WITH DEEP MULLION CAPS
- 4B — GLAZING WITH GLASS FINS
- 5 — GLASS RAILING

Note: These images are conceptual in nature and minimal design changes can be expected before construction.



MAIN BUILDING - NORTHEAST ELEVATION (LOBBY LOUNGE)

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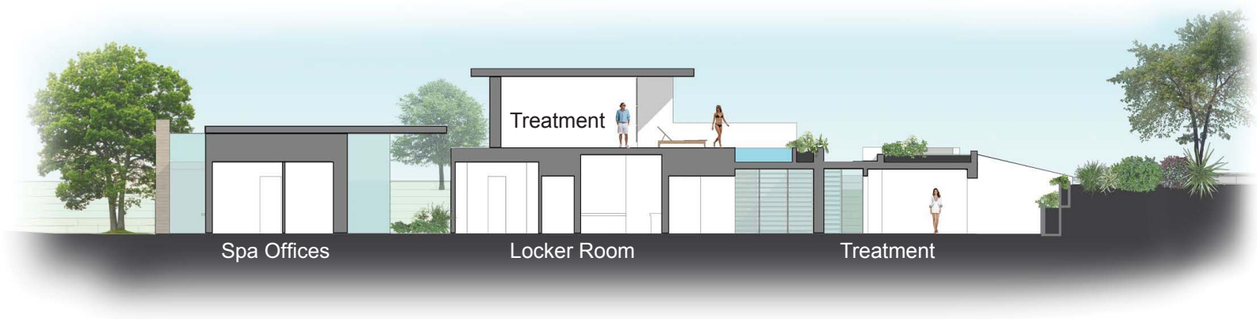
RESORT HOTEL

Main Building Elevations

E-9



SPA SECTION THRU LOCKER ROOMS

SPA SECTION THRU LAP POOL COURT

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RESORT HOTEL

Spa Sections

E-10

GUESTROOM CASITAS

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THE RITZ-CARLTON®

RESORT HOTEL

Casita Clusters

E-11

	Use	# Levels	Total
A	Retail / Restaurant	1.0	9,600 sf
B	Retail / Restaurant	1.0	9,793 sf
C	Retail / Restaurant	1.0	17,349 sf
D	Retail / Restaurant	1.0	17,585 sf

One Level Retail

Tabulations

Total Building SF	**54,327 sf**
Overhangs and Canopies	24,073 sf
Total Lot Coverage	**78,400 sf**

Parking Required

Comm Reqd code@ 1/300gsf

Restaurant Reqd code@ 1/120gsf

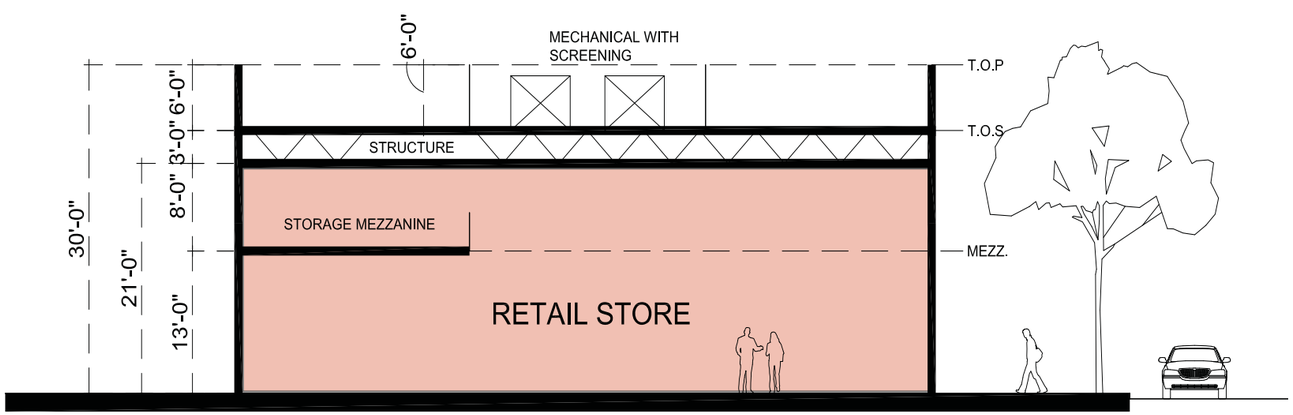
Parking Provided

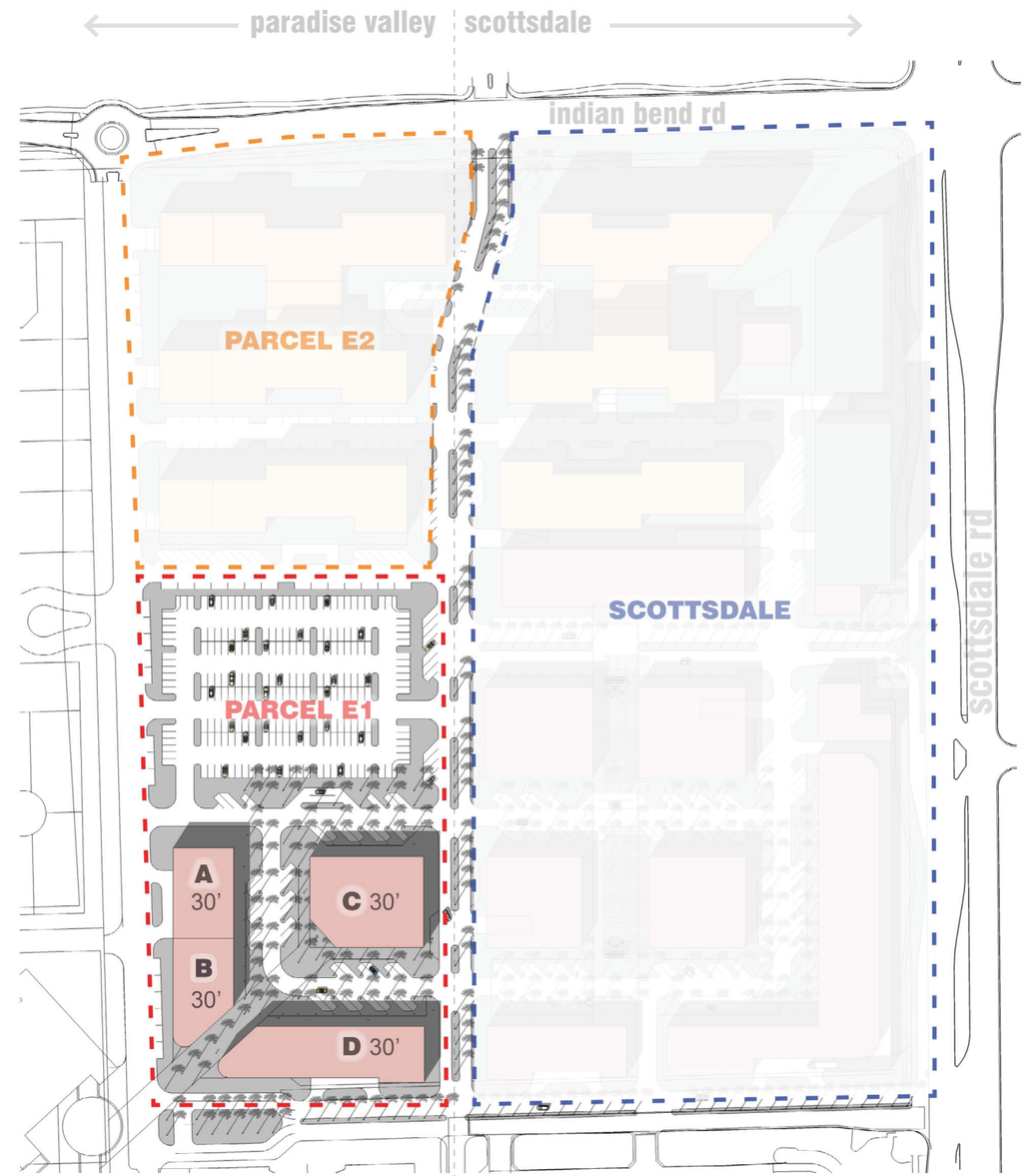
Surface Off-Street Parking	222 cars
Surface On-Street Parking	77 cars
Total Parking Provided	**299 cars**

Note: At no time can the restaurant use exceed 43% of the total building area

Coverage Calculation

Parcel E1 Area (7.2 acres)	314,790 sf
Total Building Area	54,327 sf
Coverage	**17%**





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FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
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THE RITZ-CARLTON®

RESORT RELATED RETAIL

Area E2

E-12

THE RITZ-CARLTON®

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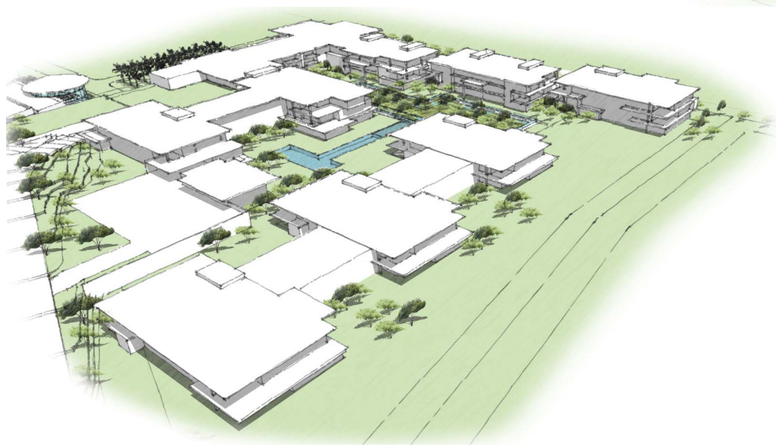
FIVE STAR DEVELOPMENT

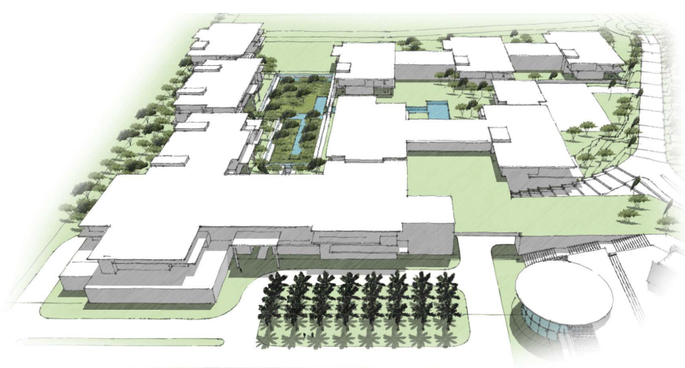
SECTION F - Resort Residential

RITZ-CARLTON RESORT VILLAS

AERIAL VIEW TOWARD NORTHWEST



AERIAL VIEW TOWARD NORTHEAST



AERIAL VIEW TOWARD LINCOLN DRIVE - From Palm Court

Aerial views depict the general massing only and do not reflect the actual building layouts

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THE RITZ-CARLTON®

AREA A1

Ritz-Carlton Residential Villages

F-1

Area B & C Accessory Building Setbacks	
Front Yard	10'
Side Yard	5'
Side Yard	10' (that abuts a street)
Rear Yard	10'

Area B & C Main Building Setbacks	
Front Yard First Floor	20'
Front Yard Second Floor	25'
Side Yard Lots greater than 15,000 sf	15' each side
Side Yard Lots 10,000 - 15,000 sf	20' total (not less than 5')
Rear Yard First Floor	20'
Rear Yard Second Floor	35'
Lot size greater than 15,000 sf	▲
Single story home with construction limited to a maximum of 20' in height	⬡

Guest Parking:
2 cars in the driveway at each home

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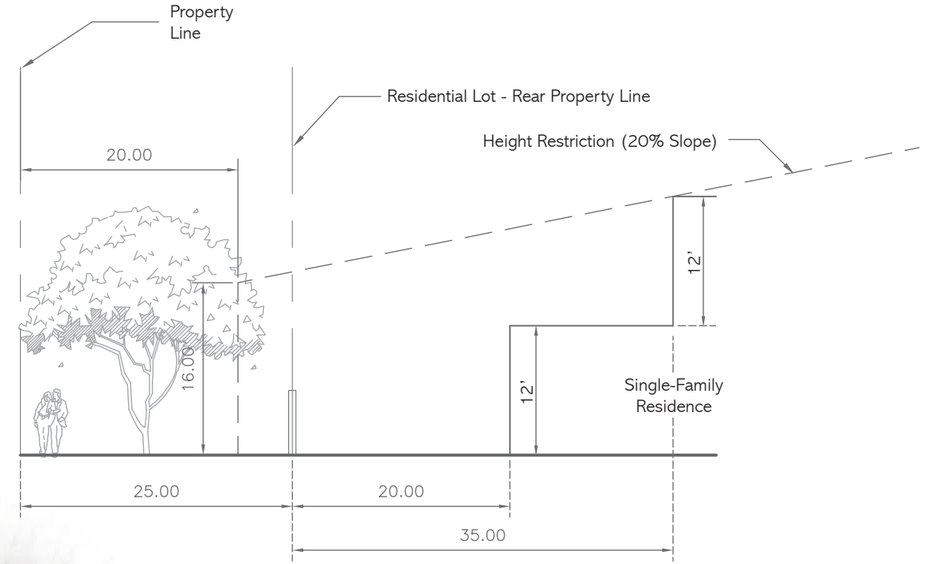
THE RITZ-CARLTON®

AREA B

Resort Branded Residential Lots

F-2



Open Space Criteria

Area B & C Main Building Setbacks	
Front Yard First Floor	20'
Front Yard Second Floor	25'
Side Yard Lots greater than 15,000 sf	15' each side
Side Yard Lots 10,000 - 15,000 sf	20' total (not less than 5')
Rear Yard First Floor	20'
Rear Yard Second Floor	35'
Lot size greater than 15,000 sf	◆
Single story home with construction limited to a maximum of 20' in height	◆

Area B & C Accessory Building Setbacks	
Front Yard	10'
Side Yard	5'
Side Yard	10' (that abuts a street)
Rear Yard	10'

N

0 40 80 160 320

Guest Parking:
2 cars in the driveway at each home

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AREA C

Ritz-Carlton Residential Lots

F-3

LEGEND

RESORT RELATED ATTACHED RESIDENCE VILLAGE

- 51 AMENITIES | ADMINISTRATIVE OFFICE
- 53 GUEST PARKING
- 54 RESIDENT'S POOL
- 55 ATTACHED RESIDENTIAL UNITS

AREA D - RESORT RELATED ATTACHED RESIDENCE VILLAGE

Setbacks: Front and Rear Yard Setbacks = 10' each

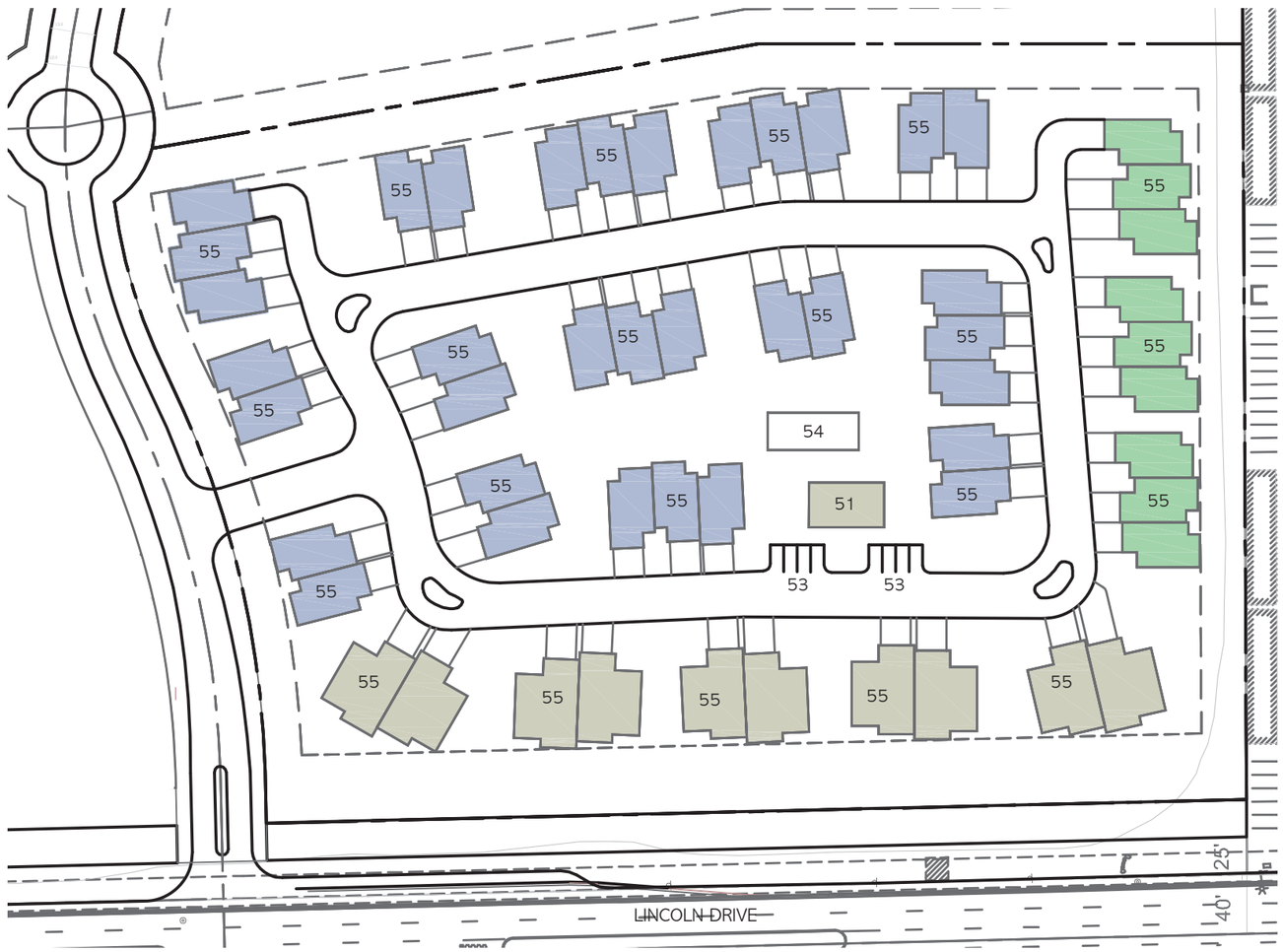
LEGEND

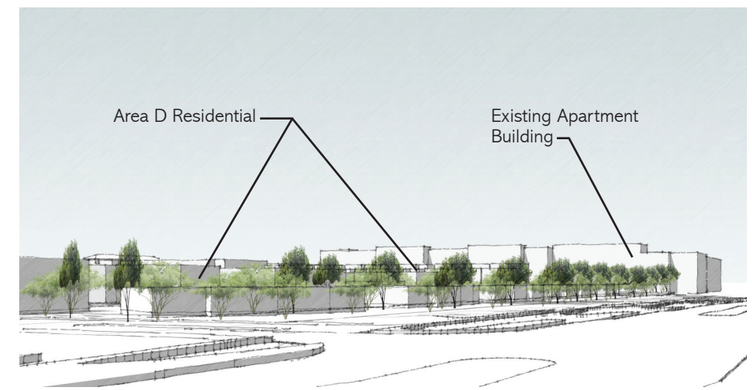
One Story Building

Two Story Building

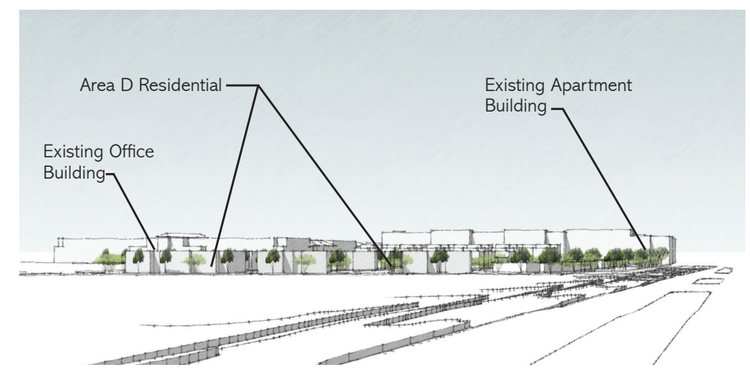
Three Story Building

Guest Parking:
2 cars in the driveway at each home





VIEW TOWARD SCOTTSDALE ROAD - at Ritz Carlton Entry



VIEW TOWARD SCOTTSDALE ROAD - Near Mockingbird Intersection

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FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

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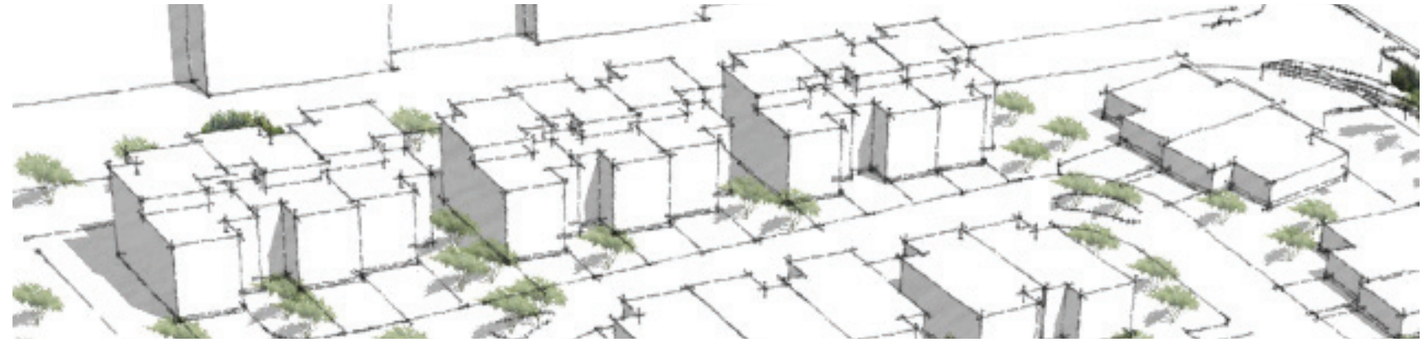
THE RITZ-CARLTON®

AREA D
Attached Residence Village
F-4



ENLARGED VIEW OF THREE STORY ATTACHED RESIDENCES

AERIAL VIEW TOWARD LINCOLN DRIVE

Massing illustrations do not depict the required 50% reduction of enclosed floor area at the three story units.

ENLARGED VIEW OF THREE STORY ATTACHED RESIDENCES MASSING

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FIVE STAR DEVELOPMENT

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AREA D

Attached Residence Village

F-5

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FIVE STAR DEVELOPMENT

SECTION G - Landscape Architecture

RESORT LANDSCAPE MASTER PLAN (CHARACTER AREAS)

The Ritz-Carlton Resort landscape provides a key opportunity to express a sense of place in context to the Sonoran Desert character of Paradise Valley. At the same time, the fabric of the landscape will tie together the various uses within the resort while transitioning from the urban oasis character along Scottsdale Road to the xeric residential landscape along Mockingbird and further west. The following Landscape Character Areas have been integrated into the resort design to accomplish these goals.

Hotel / Oasis Landscape Character Area

The Hotel / Oasis Landscape Zone will be comprised of a mixture of native Sonoran Desert, desert adapted, and tropical/exotic plants to create a rich and varied plant palette. Palm trees will provide filtered shade for the entry courtyard and pool areas, and create a sense of oasis within the desert. Turf areas will be utilized for outdoor functions and to enhance the oasis character.

Guest Casitas and Villas / Oasis Landscape Character Area

Similar to the hotel, the Guest Casitas / Oasis Landscape Zone will be comprised of a mixture of native Sonoran Desert, desert adapted, and tropical/exotic plants, but will be less formal in character.

Mixed Use / Oasis Landscape Character Area

This zone will be formal in design, with low level plant masses defining outdoor uses while providing visibility, and tree alleys providing shade for pedestrian comfort. Thorny and spiny plant material will be minimized near pedestrian areas.

Resort Related Attached Residences / Lush Desert Landscape Character Area

Similar to the Mixed Use zone, this higher density lifestyle zone will be landscaped for comfort, while also minimizing water use. Terraced living areas will be accented with cascading desert adapted vines, while elevated planters bring more detailed and finely textured plant palette closer to the resident.

Single Family Residential / Transitional Desert Landscape Character Area

The single family residential areas provide a transition point to the Riparian Desert landscape. Planting within these areas will be selected from the Arizona Low Water Use Plant List, yet will highlight the brighter more vibrant colors of the desert.

Riparian Desert Corridor Landscape Character Area

The Riparian Desert Corridor Landscape Zone will emphasize native Sonoran Desert plants that naturally grow along desert arroyos, rivers, and springs to create a lush desert feel. Native plants will be supplemented with naturalized plant material that are riparian in character and will coincide with on-site drainage channels, retention areas, and constructed arroyos.

Interior Streets and Entries / Oasis Landscape Character Area

This character area begins at the main resort entry off of Lincoln, and includes the approach to the hotel, the palm court and the street entering from Indian Bend Drive. This zone will create a unique entry experience for residents and resort guests, and will be characterized by formal planting arrangements, palm trees, and sculptural accent plant masses.

Perimeter Streets / Lush Desert Landscape Character Area

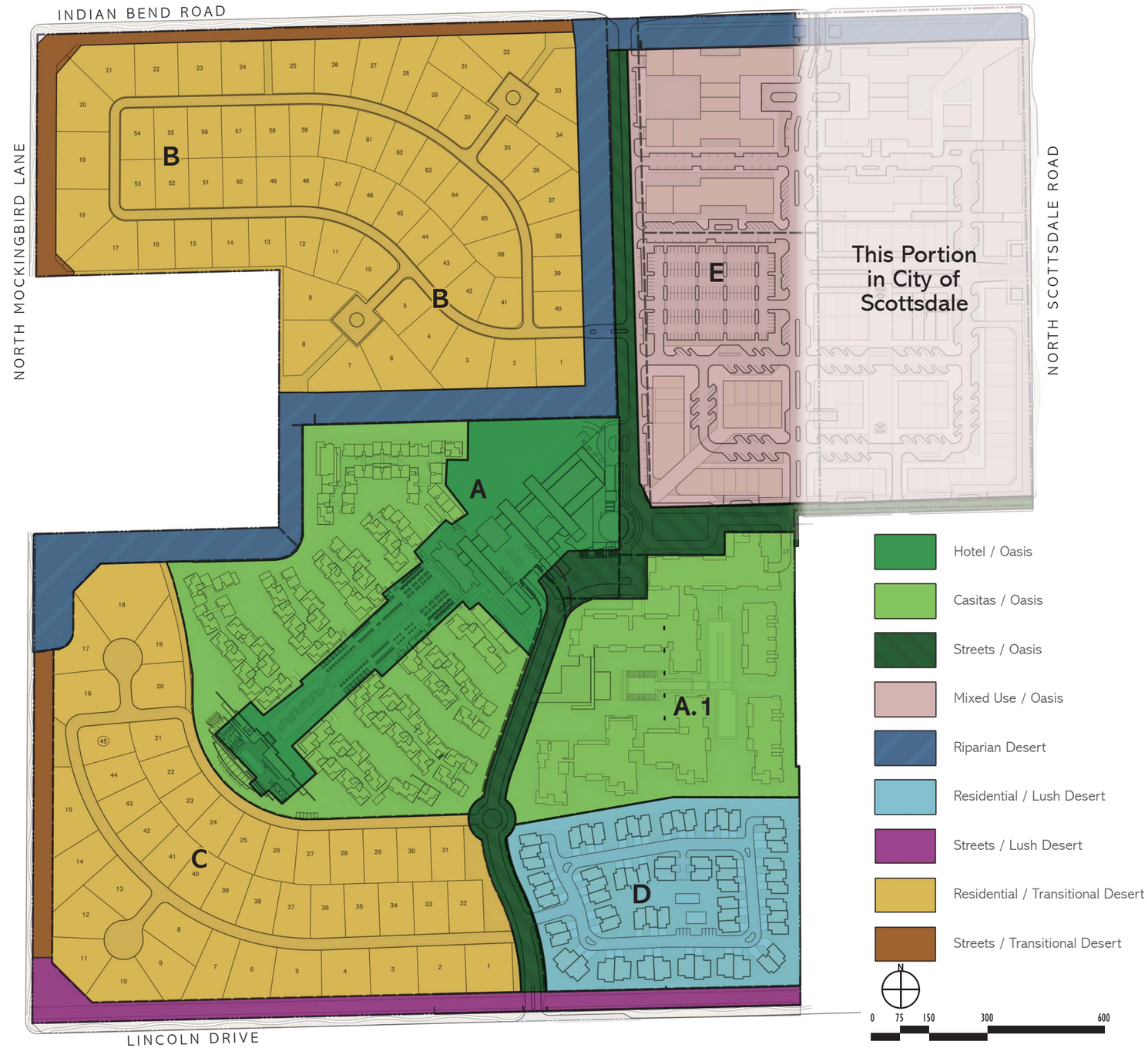
This area of Lincoln Drive will transition from the Oasis character of the entry drive, to the xeric landscape along the west boundary. Planting will be informal, with sweeping masses of desert color.

Perimeter Streets / Transitional Desert Landscape Character Area

Mockingbird Lane, and the western portion of Indian Bend will be planted in a naturalized desert character utilizing native and desert adapted planting, strictly selected from the Arizona Low Water Use Plant List.

NOTES:

- Private rear-yard landscapes for the residential lots, and courtyards within the luxury attached residence developments are excluded from the above landscape zones.



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FIVE STAR DEVELOPMENT

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RESORT LANDSCAPE
Character Zones Master Plan
G-1

RESORT WALL MASTER PLAN

Initial locations of site walls have been identified in the exhibit to the right. The design intent of the walls will be to provide both security for residents and guests, while also respecting view corridors and a sense of open space. As such, view fences have been used where possible, and solid walls and screen walls are limited to areas that require enhanced privacy or security, or to shield resident views to utility or back of house uses.

Perimeter walls have been identified on this exhibit. The Hotel area will contain additional landscape walls of varying heights to define open space areas and uses.

Notes:

- Private yard walls provided by owner.
- Screen wall and fence guidelines: Screen walls are used to shield delivery areas, service areas, truck courts, mechanical, electrical, plumbing, and fire protection equipment, storage areas, recycling containers, dumpsters, and the like, from public view. Screen walls must respond in form to architecture. The height of screen walls should be as low as possible, but are limited to fifteen feet (15') limited to the hotel loading dock and central plant, as measured from the grade of the outside of the wall.

LEGEND

- 8' Solid (6' Wall + 2' Berm)
- 6' Solid
- 6' View
- Wall Jog Locations (to be located near or on lot lines)
- Primary Resort Entry Monument
- Town Entry Monument
- Resort Branding Sign
- Guardhouse
  Manned Access control point. Not to exceed 16' in height, 250sf in size with a gate not to exceed 8' in height
- Electric Gate
  Access control point with visitor call box. Adequate vehicular turn around to be provided per the Town standards. Reconfiguration of adjacent lots may be necessary to accommodate the required turn around, vehicle stacking and emergency access. Gates are not to exceed 8' in height.

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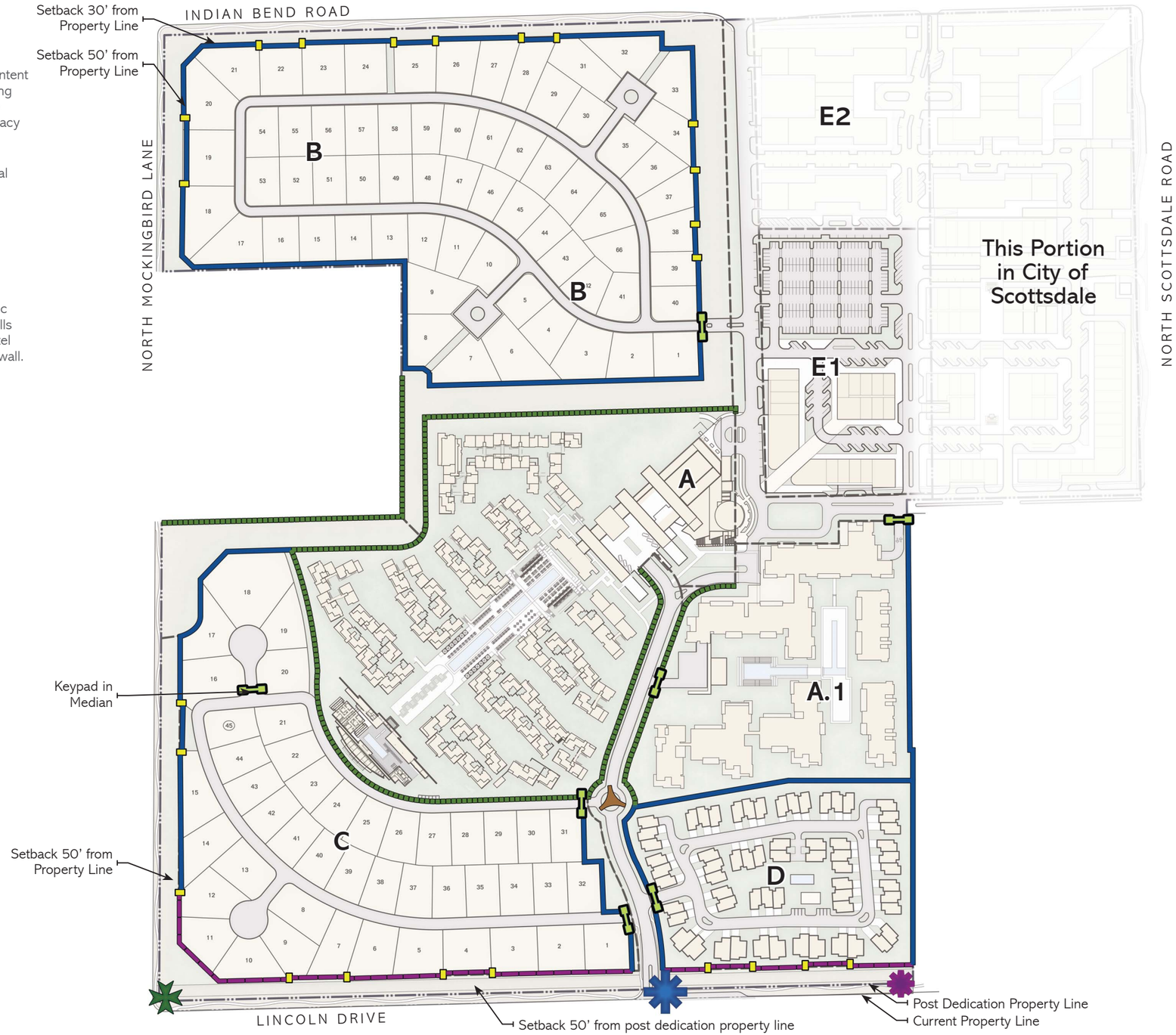

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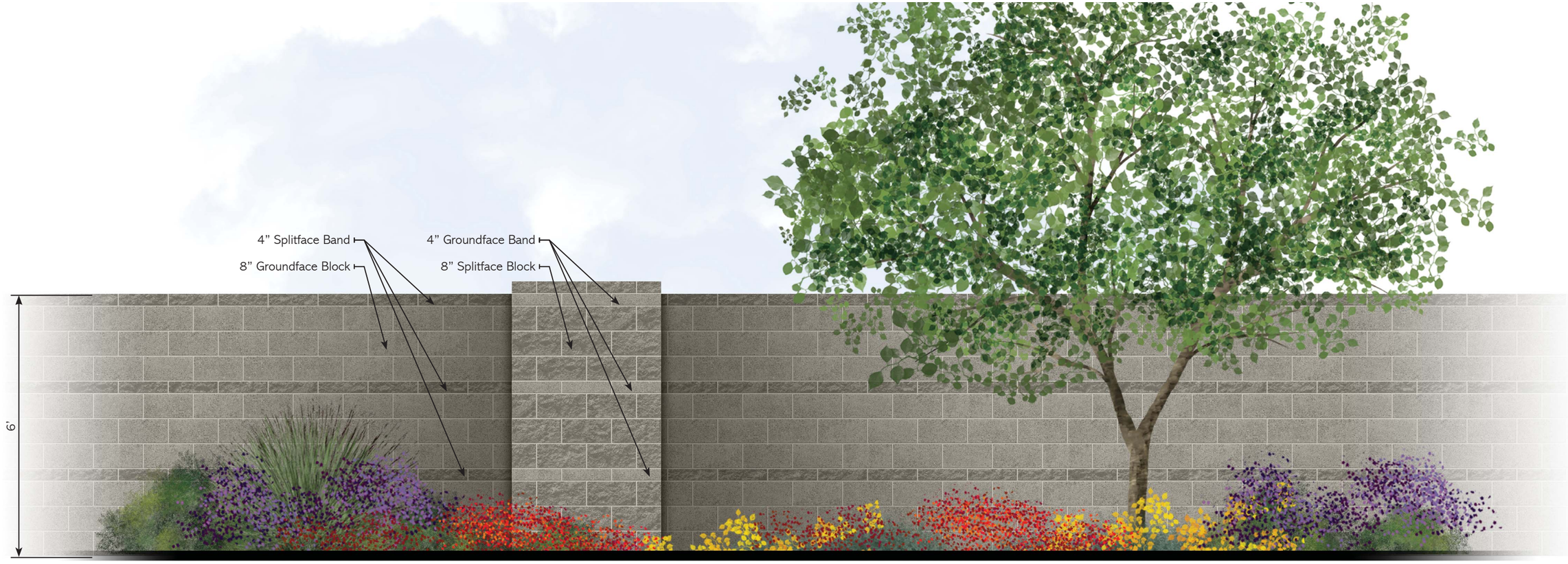
RESORT LANDSCAPE

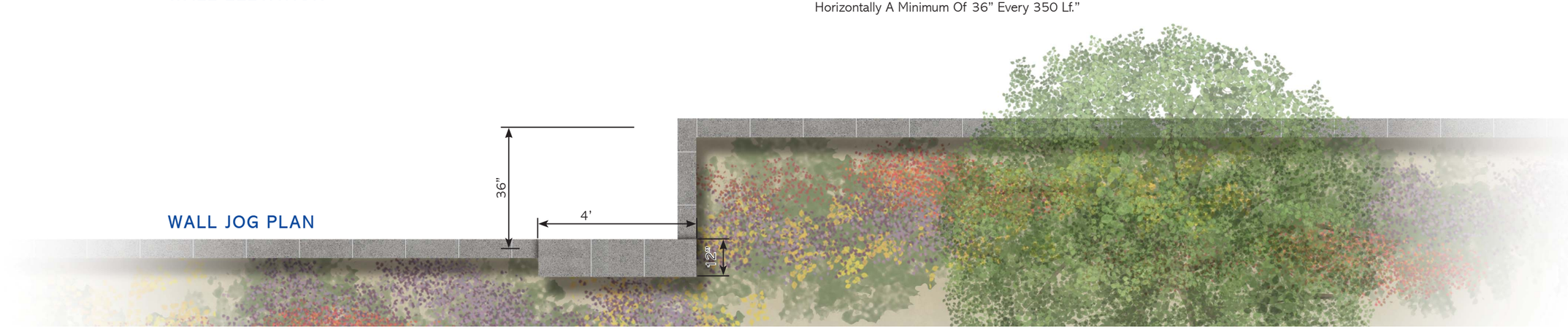
Resort Wall Master Plan

G-2



WALL ELEVATION

Perimeter Wall Along Lincoln To Undulate
Horizontally A Minimum Of 36” Every 350 Lf.”



WALL JOG PLAN

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FIVE STAR DEVELOPMENT

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RESORT LANDSCAPE

Resort Wall Detail

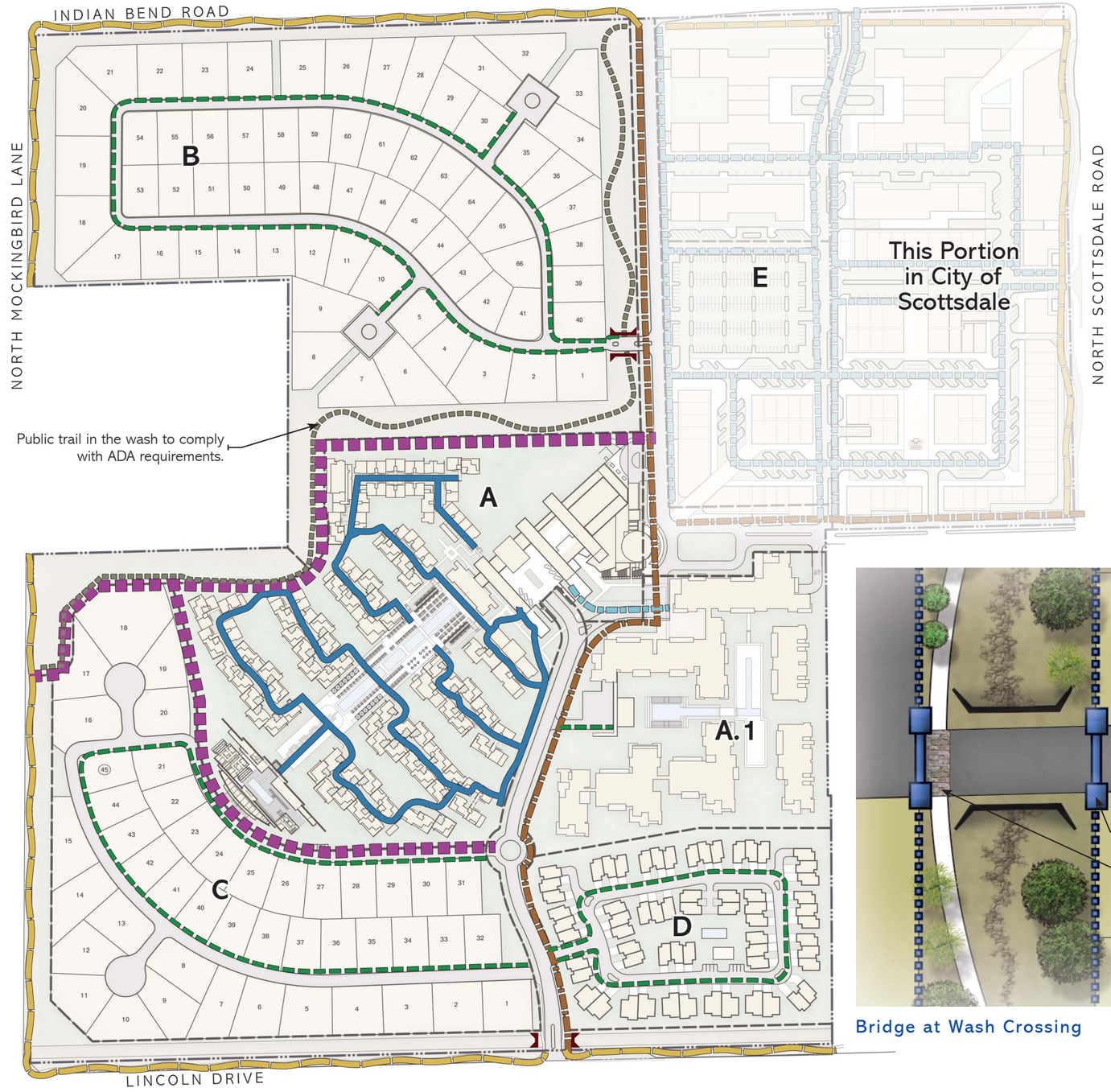
G-3

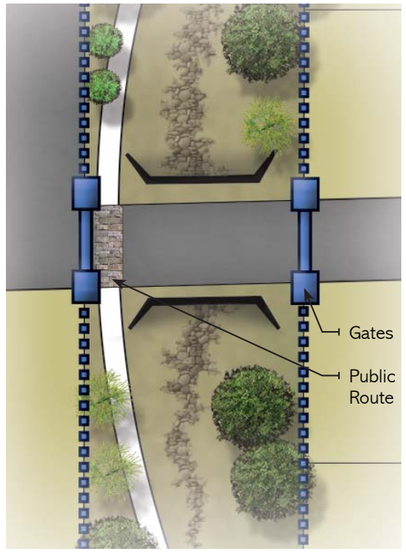
LEGEND

- 6' Major Concrete Pathway (Public)
- 6' Minor Concrete Pathway (Public)
- Varying Width Resort Pathway (Ritz-Carlton Controlled Public Access)
- 6' New Perimeter Sidewalk (Public)
- 5' Neighborhood Walk (Private)
- 8' Stabilized Compacted DG Trail (Public)
- 20' Emergency Access Lane/Pedestrian Pathway
- Bridge at Wash / Swale Crossing

Example of Box Culvert Bridge.

Wash Crossing In Parcel B to be Similar In Design.





Bridge at Wash Crossing

N

0 75 150 300 600

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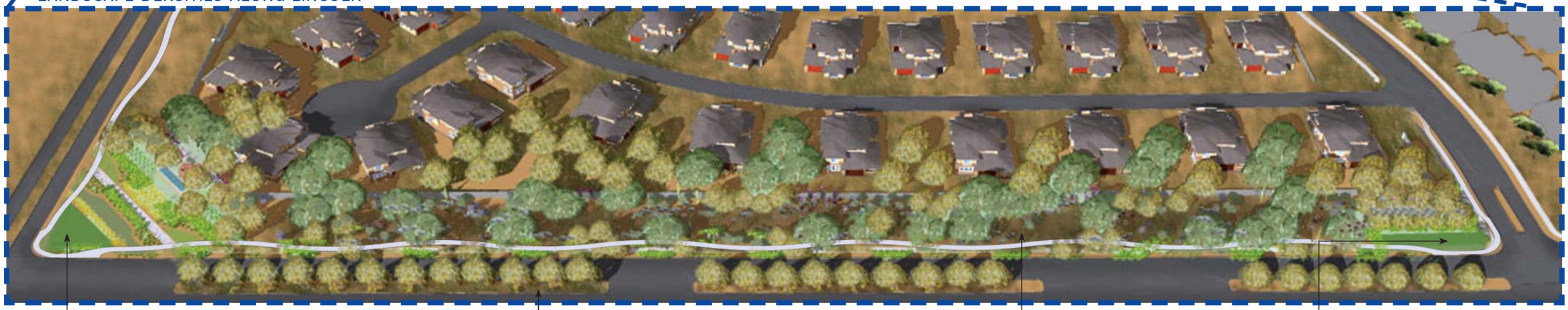
RESORT LANDSCAPE

Pedestrian Pathway System

Visually Significant Corridor Design Considerations

1. Architectural screens will be provided around all above ground utility structures
2. Seating areas with benches will be provided along the sidewalk at a minimum of 1000' intervals.
3. Themed wayfinding signage will be provided along the corridor.
4. Enhanced landscape lighting will be provided to differentiate the corridor from other streets.

LANDSCAPE DENSITIES ALONG LINCOLN



CORNER LANDSCAPING:

- Ten to Twelve 48" Box (Min) Specimen Desert Trees
- Twenty Specimen Agave
- 60% Live Vegetative Cover with Shrubs and Groundcover
- Turf Area

MEDIAN PLANTING:

- 36" Box (Min) Desert Tree at 25' O.c.
- Three 5-Gallon Shrubs and Five 1-Gallon Groundcover Per Tree

LINCOLN PLANTING:

- 36" Box (Min) Desert Tree at 25' O.c.
- Five 5-Gallon and Five One-Gallon Groundcover Per Tree

ENTRY PLANTING:

- Eight to Ten 48" Box Min Specimen Trees
- 60% Live Vegetative Groundcover
- Turf Area
- One Specimen Agave or Succulent Per Tree. 15-Gal (Min)

Note: This landscape design and density is also representative of what will occur in front to Area D along Lincoln Dr

Note: Design is not to scale. Residential units also not drawn to height and setback minimums.

CIVTECH, INC
Traffic Engineering
10605 N Hayden Road | Ste 140
Scottsdale, AZ 85260-5595
480.659.4250
contact: Dawn Carter

CVL CONSULTANTS
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602.264.6831
contact: Ryan Weed

MASON ARCHITECTS
Architecture & Master Planning
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650.851.8810
contact: Peter Mason

NELSEN PARTNERS
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contact: George A Melara

WITHEY MORRIS, PLC
Land Use & Zoning Attorney
2525 E Arizona Biltmore Cir | Ste A-212
Phoenix, Arizona 85016
602.230.0600
contact: Jason Morris

FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
Approved Plans

December 17, 2015

THE RITZ-CARLTON®

LINCOLN DRIVE

Landscape Densities

G-5

CONCEPTUAL VIEWS ALONG LINCOLN

#1

#2

#3

#4

Note: Public sidewalk to be placed no closer than 8' to the curb of Lincoln Dr

Note: Views are conceptual with specific plant type and location to be confirmed during design and to comply with Town landscape standards.

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FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
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LINCOLN DRIVE
Views Along Lincoln
G-6

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Approved Plans

December 17, 2015 - DRAFT

FIVE STAR DEVELOPMENT

SECTION H - Civil Engineering

RITZ-CARLTON RESORT
A.L.T.A./A.C.S.M. LAND TITLE SURVEY

A PORTION OF LAND LOCATED IN THE NORTHEAST QUARTER OF SECTION 10,
TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN,
MARICOPA COUNTY, ARIZONA

NOTES

THIS SURVEY IS BASED ON A SPECIAL REPORT BY FIRST AMERICAN TITLE INSURANCE COMPANY.
ORDER NO. NCS-730681-PHX1 DATED 05/07/2015

THE PROPERTY IS SUBJECT TO THE FOLLOWING, ACCORDING TO SCHEDULE B OF SAID COMMITMENT:

1. SECOND HALF OF 2014 TAXES, DELINQUENT PLUS PENALTIES AND INTEREST.
(AFFECTS THE SURVEYED PARCELS - NOT MAPPABLE)

2. TAXES FOR THE FULL YEAR OF 2015.
(AFFECTS THE SURVEYED PARCELS - NOT MAPPABLE)

3. COVENANT RUNNING WITH THE LAND RECORDED IN DOCKET 6882, PAGE 170.
(AFFECTS THE SURVEYED PARCELS - NOT MAPPABLE)

4. SEWER CONNECTION CHARGE FOR USE OF SEWER LINES AND OTHER PROVISIONS AS SET FORTH IN ORDINANCE 112 RECORDED AS DOCKET 11497, PAGE 638.
(AFFECTS THE SURVEYED PARCELS - NOT MAPPABLE)

5. AN EASEMENT FOR UNDERGROUND ELECTRIC LINES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED AS 88-365323 OF OFFICIAL RECORDS.
(AFFECTS TRACTS C AND D OF PARCEL NO. 1)

6. AN EASEMENT FOR SEWER AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED AS 88-385864 OF OFFICIAL RECORDS.
(AFFECTS TRACT D OF PARCEL NO. 1)

7. COVENANTS, CONDITIONS AND RESTRICTIONS AS SET FORTH IN DOCUMENT RECORDED IN 2007-0600772 OF OFFICIAL RECORDS.
(AFFECTS THE SURVEYED PARCELS - NOT MAPPABLE)

8. THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED "MEMORANDUM OF OPERATING AGREEMENT" RECORDED MAY 23, 2007 AS 2007-0600775 OF OFFICIAL RECORDS.
(AFFECTS THE SURVEYED PARCELS - NOT MAPPABLE)

9. A DOCUMENT ENTITLED "RESOLUTION NUMBER 1164" RECORDED APRIL 11, 2008 AS 2008-0320683 OF OFFICIAL RECORDS.
(AFFECTS THE SURVEYED PARCEL - MAPPED HEREON)

10. THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED "AGREEMENT AND NOTICE OF MUNICIPAL PROVIDER REPORTING REQUIREMENTS FOR 7000 EAST LINCOLN REGARDING MEMBERSHIP IN THE CENTRAL ARIZONA GROUNDWATER REPLENISHMENT DISTRICT" RECORDED NOVEMBER 12, 2008 AS 2008-970653 OF OFFICIAL RECORDS.
(AFFECTS PARCEL NO. 1 - BLANKET EFFECT - NOT MAPPABLE)

11. COVENANTS, CONDITIONS AND RESTRICTIONS AS SET FORTH IN 7000 EAST LINCOLN REGARDING MEMBERSHIP IN THE CENTRAL ARIZONA GROUNDWATER REPLENISHMENT DISTRICT RECORDED IN 2008-970654 OF OFFICIAL RECORDS.
(AFFECTS PARCEL NO. 1 - BLANKET EFFECT - NOT MAPPABLE)

12. THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED "AGREEMENT FOR THE WAIVER OF CLAIMS FOR DIMINUTION IN VALUE OF PROPERTY" RECORDED DECEMBER 23, 2008 AS 2008-1080332 OF OFFICIAL RECORDS.
(AFFECTS PARCEL NO. 2 - BLANKET EFFECT - NOT MAPPABLE)

13. AN EASEMENT FOR PUBLIC UTILITY AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED AS 2009-0045699 OF OFFICIAL RECORDS.
(AFFECTS THE SURVEYED PARCEL - MAPPED HEREON)

14. RESTRICTIONS, DEDICATIONS, CONDITIONS, RESERVATIONS, EASEMENTS AND OTHER MATTERS SHOWN ON THE PLAT OF 7000 EAST LINCOLN, AS RECORDED IN PLAT BOOK 1022 OF MAPS, PAGE 23.
(AFFECTS PARCEL NO. 1 - MAPPED HEREON ON SHEET NO. 4)

15. AN EASEMENT FOR TEMPORARY DRAINAGE, FLOOD CONTROL AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED AS 2009-0604942 OF OFFICIAL RECORDS.
(AFFECTS THE SURVEYED PARCEL - MAPPED HEREON)

16. A DEED OF TRUST TO SECURE AN ORIGINAL INDEBTEDNESS OF $55,000,000.00 RECORDED JANUARY 17, 2014 AS 2014-0037602 OF OFFICIAL RECORDS DATED JANUARY 17, 2014; TRUSTOR: FIVE STAR DEVELOPMENT RESORT COMMUNITIES, LLC, AN ARIZONA LIMITED LIABILITY COMPANY; TRUSTEE: FIRST AMERICAN TITLE INSURANCE COMPANY, A CALIFORNIA CORPORATION; BENEFICIARY: FAJIBU INVESTMENTS, LLC, A NEW MEXICO LIMITED LIABILITY COMPANY.
(AFFECTS THE SURVEYED PARCELS - NOT MAPPABLE)

17. WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT SHOWN BY THE PUBLIC RECORDS.
(AFFECTS THE SURVEYED PARCELS - NOT MAPPABLE)

THE STREET ADDRESS FOR PARCEL NO. 2 IS 6990 NORTH SCOTTSDALE ROAD, PARADISE VALLEY, ARIZONA 85253. EACH LOT IN PARCEL NO. 1 HAS BEEN ASSIGNED AN ADDRESS BY THE TOWN OF PARADISE VALLEY; NONE OF THESE LOTS HAVE BEEN DEVELOPED AND THE ADDRESSES ARE NOT SHOWN ON THIS SURVEY.

THE SURVEYED PARCEL CONTAINS NO STRIPED PARKING SPACES.

THERE IS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS.

NOTES

THERE IS NO INFORMATION AVAILABLE CONCERNING ANY CHANGES IN STREET RIGHT OF WAY LINES, EITHER COMPLETED OR PROPOSED. THERE IS NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.

THERE IS NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

BEARINGS, DISTANCES AND CURVE DATA NOT SPECIFIED AS RECORD OR MEASURED REPRESENT CVL FIELD MEASURED DATA.

SOURCES USED IN THE PREPARATION OF THIS SURVEY INCLUDE:
GENERAL LAND OFFICE PLAT NO. 00076
BOOK 321 OF MAPS, PAGE 6
BOOK 734 OF MAPS, PAGE 10
BOOK 1022 OF MAPS, PAGE 23 (R)
BOOK 1107 OF MAPS, PAGE 49
BOOK 1222 OF MAPS, PAGE 9

LEGAL DESCRIPTION

PARCEL NO. 1

LOTS 1 THROUGH 149, INCLUSIVE, TRACTS A THROUGH I, INCLUSIVE, OF 7000 EAST LINCOLN, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED IN BOOK 1022 OF MAPS, PAGE 23.

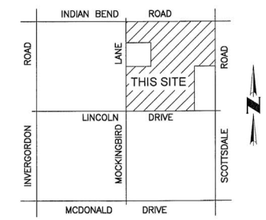
PARCEL NO. 2

THE EAST HALF OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 10, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, CITY OF SCOTTSDALE, MARICOPA COUNTY, ARIZONA;

EXCEPT THE EAST 65 FEET AND THE NORTH 55 FEET THEREOF TAKEN FOR ROADS;
ALSO

EXCEPT THAT PORTION THEREOF OF THE ABOVE DESCRIBED PARCEL LYING NORTHEASTERLY OF A CURVED LINE HAVING A RADIUS OF 30 FEET, CONCAVE SOUTHWESTERLY, DRAWN FROM A POINT OF CURVATURE ON THE SOUTH LINE OF THE NORTH 55 FEET OF SAID ABOVE PARCEL AND RUNNING THENCE SOUTHEASTERLY ALONG SAID CURVED LINE 47.70 FEET, MORE OR LESS TO THE TERMINATION OF SAID CURVED LINE AT POINT OF TANGENCY ON THE WEST LINE OF THE EAST 65 FEET OF SAID ABOVE DESCRIBED PARCEL.

PARCEL NO. 1 CONTAINING 105.269 ACRES, MORE OR LESS
PARCEL NO. 2 CONTAINING 17.396 ACRES, MORE OR LESS
THE TOTAL CONTAINING 122.665 ACRES, MORE OR LESS



VICINITY MAP
(NOT-TO-SCALE)

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS SOUTH 88°36'58" WEST ALONG THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SECTION 10, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER MERIDIAN, ACCORDING TO BOOK 1022 OF MAPS, PAGE 23, MARICOPA COUNTY RECORDS.

LEGEND

(R)	INDICATES RECORD INFORMATION PER BOOK 1022 OF MAPS, PAGE 23		INDICATES FIRE HYDRANT
(M)	INDICATES MEASURED INFORMATION		INDICATES WATER VALVE
	INDICATES FOUND BRASS CAP FLUSH	WM	INDICATES WATER METER
	INDICATES FOUND BRASS CAP IN HAND HOLE	PED	INDICATES PEDESTAL (GENERIC)
	INDICATES FOUND COTTON PICKER SPINDLE		INDICATES TRAFFIC SIGNAL POLE
	INDICATES FOUND CHISELED "X"		INDICATES TRAFFIC SIGN
RBR	INDICATES FOUND REBAR AS NOTED		INDICATES TREE
RBR	INDICATES SET 1/2" REBAR WITH CAP LS#22782		INDICATES SHRUB
P.U.E.	INDICATES PUBLIC UTILITY EASEMENT		INDICATES SAGUARO CACTUS
P.A.E.	INDICATES PUBLIC ACCESS EASEMENT		INDICATES BARREL CACTUS
	INDICATES POWER POLE		INDICATES PRICKLY PEAR
	INDICATES POLE STREET LIGHT		INDICATES YUCCA
E-B	INDICATES ELECTRIC JUNCTION BOX		INDICATES LANDSCAPE LIGHT
E	INDICATES MANHOLE ELECTRIC		INDICATES PROPERTY LINE (P.L.)
SD	INDICATES MANHOLE STORM DRAIN	X	INDICATES FENCE
S	INDICATES MANHOLE SANITARY SEWER		INDICATES CONCRETE (CONC.)
			INDICATES PAVEMENT
			INDICATES RIP-RAP

FLOOD ZONE CERTIFICATION

THIS IS TO CERTIFY THAT THIS PROPERTY IS LOCATED WITHIN THE ZONE "D" FLOOD HAZARD AREA PER FIRM MAP PANEL NUMBER 04013C-1770 L DATED OCTOBER 16, 2013, AS PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

ZONE "D" AS DEFINED BY FEMA IS:
AREAS IN WHICH FLOOD HAZARDS ARE UNDETERMINED, BUT POSSIBLE.

CERTIFICATION

TO FIVE STAR DEVELOPMENT RESORT COMMUNITIES, LLC, AN ARIZONA LIMITED LIABILITY COMPANY; AND FIRST AMERICAN TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 8, 11(A), 13, 16 AND 18 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON 05/12/2015.

DATE OF PLAT OR MAP: 05/20/2015

LARRY E. SULLIVAN
REGISTRATION NUMBER 22782
4550 N. 12TH STREET
PHOENIX, ARIZONA 85014
(602)-264-6831
CVLSURVEY@CVLCI.COM

CVL CONSULTANTS
4550 North 12th Street
Phoenix, Arizona 85014
602-264-6831
www.cvlci.com

NO.	REVISION	DATE

Coe & Van Loo Consultants, Inc.

A.L.T.A. / A.C.S.M. LAND TITLE SURVEY

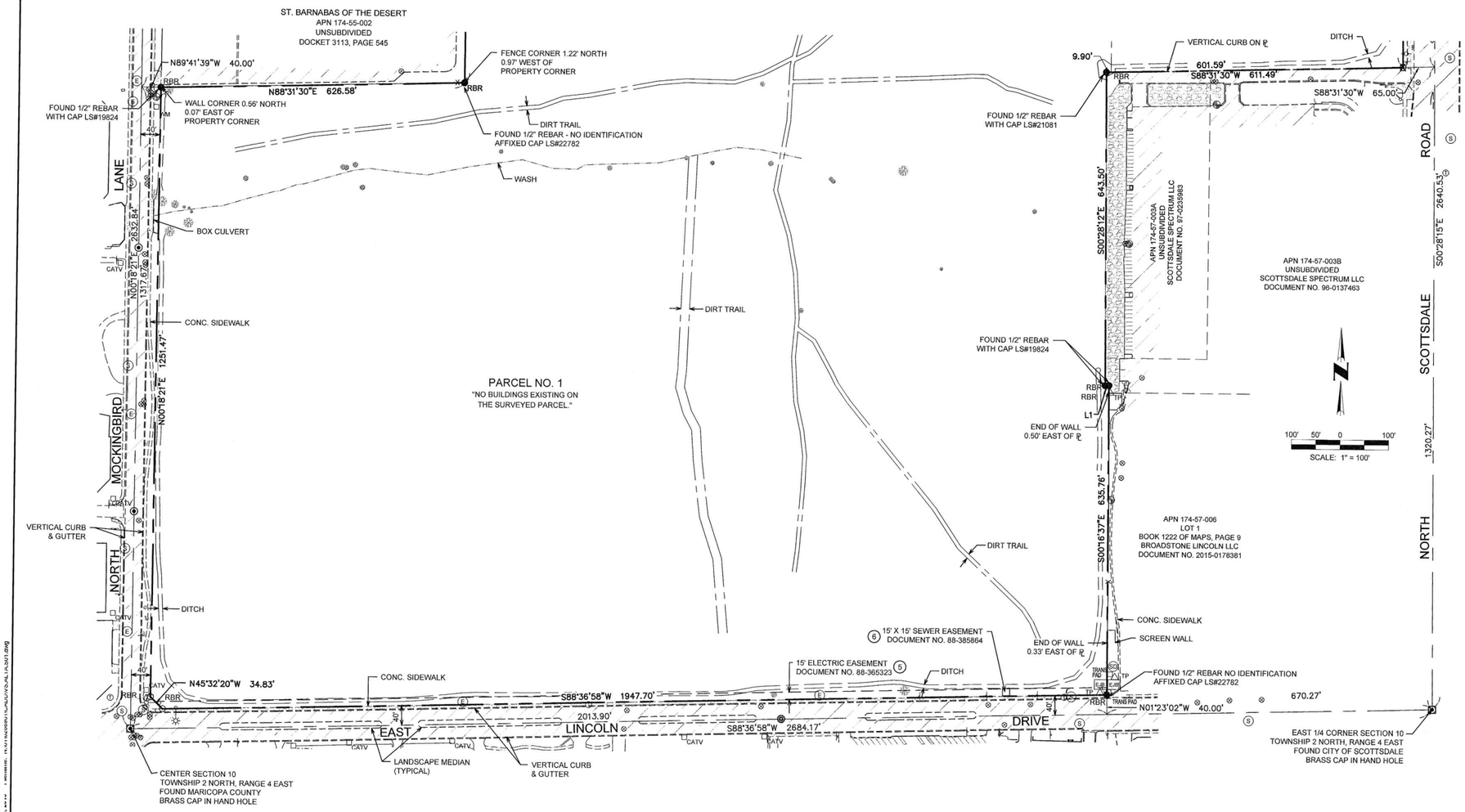
RITZ-CARLTON RESORT

22782 LARRY E. SULLIVAN REGISTERED LAND SURVEYOR ARIZONA, U.S.A. Expires 6-30-2016

SHEET 1 OF 4

CVL Contact: L. SULLIVAN
CVL Project #: 01-0268901
CVL File #:

Printed By: TomD Print Date: May 20, 2015 Filename: N:\01\0268901\CAD\V6-ALTA-S01.dwg



LINE TABLE		
LINE	BEARING	DISTANCE
L1	N88°20'34"E	7.73'

CVL CONSULTANTS
4550 North 12th Street
Phoenix, Arizona 85014
602-264-6831
www.cvlci.com

NO.	REVISION	DATE

A.L.T.A. / A.C.S.M. LAND TITLE SURVEY

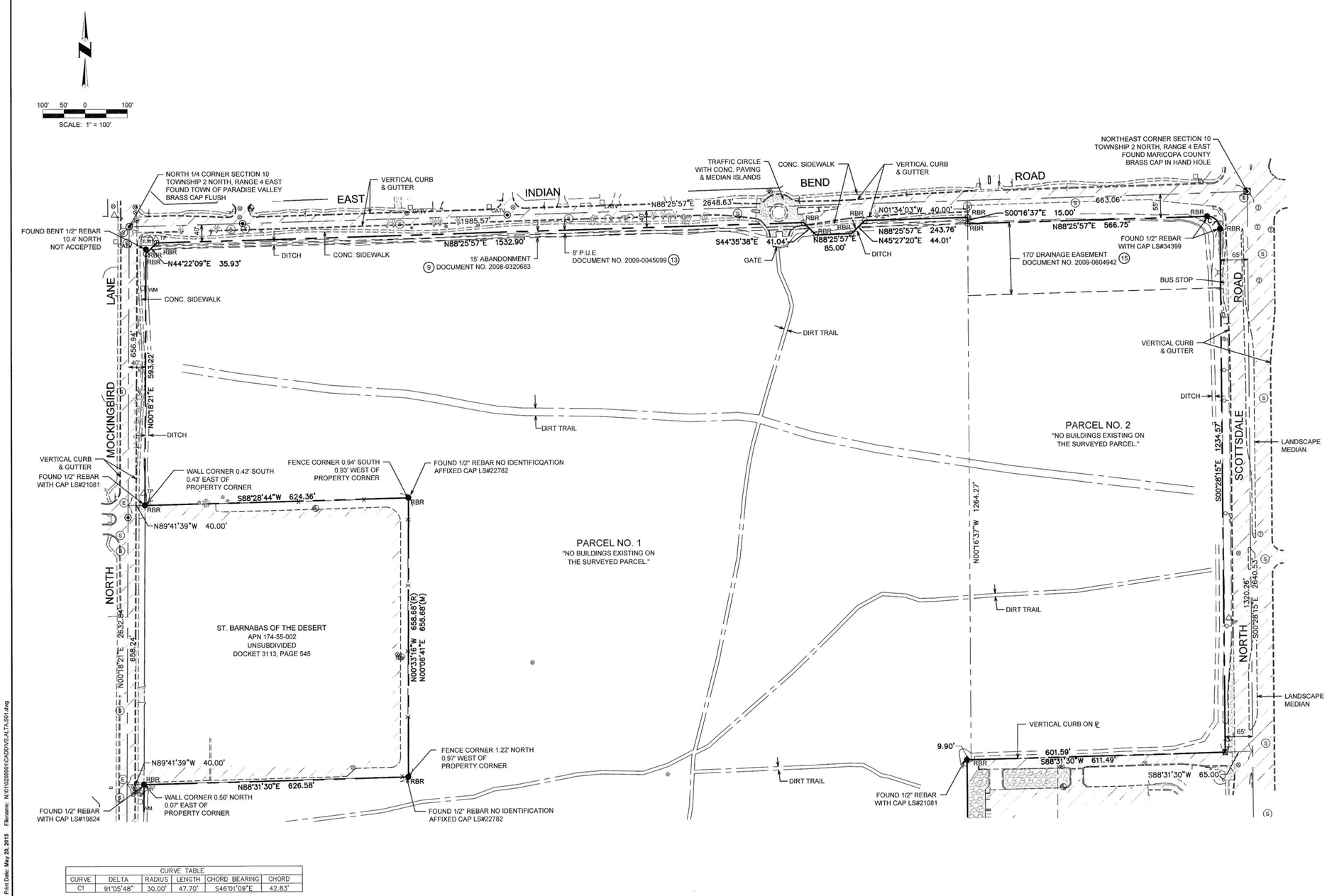
RITZ-CARLTON RESORT

Coe & Van Loo Consultants, Inc.

22782 LARRY E. SULLIVAN 5-20-19 ARIZONA U.S.A. Expires 6-30-2019

SHEET 2 OF 4

CVL Contact: L. SULLIVAN
CVL Project #: 01-0268901
CVL File #:



CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
C1	91°05'48"	30.00'	47.70'	S46°01'09"E	42.83'

Printed By: TomD Print Date: May 29, 2015 Filename: N:\01\0268901\CADD\VS-ALTA-S01.dwg

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4550 North 12th Street
Phoenix, Arizona 85014
602-264-6831
www.cvlci.com

NO.	REVISION	DATE

Coe & Van Loo Consultants, Inc.

A.L.T.A. / A.C.S.M. LAND TITLE SURVEY

RITZ-CARLTON RESORT

ARIZONA REGISTERED LAND SURVEYOR
CERTIFICATE NO. 22782
LARRY E. SULLIVAN
Date Signed 5-29-2015
ARIZONA, U.S.A.
Expires 6-30-2016

SHEET 3 OF 4

CVL Contact: L. SULLIVAN
CVL Project #: 01-0268901
CVL File #:

CIVTECH, INC
Traffic Engineering
10605 N Hayden Road | Ste 140
Scottsdale, AZ 85260-5595
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FIVE STAR DEVELOPMENT

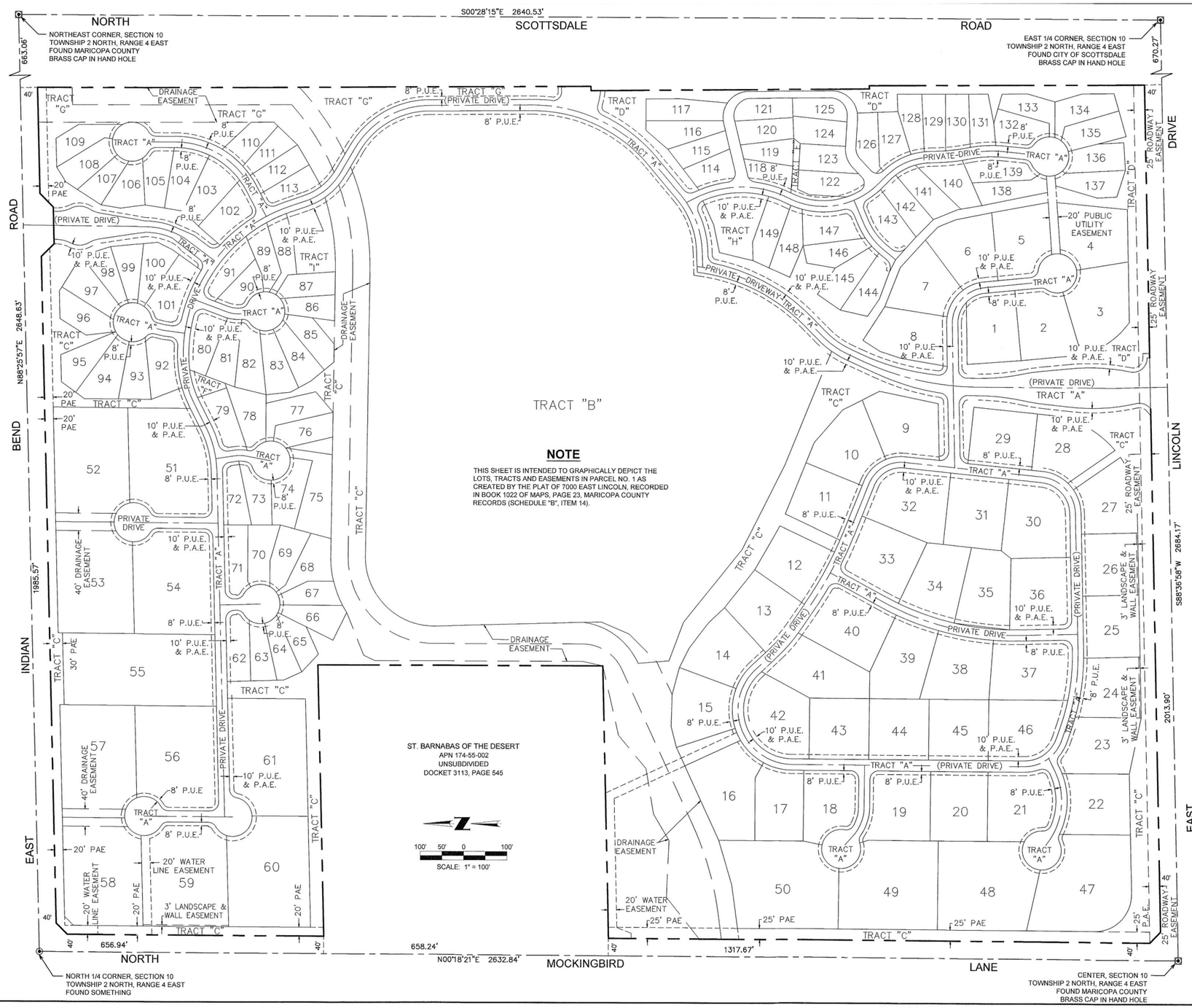
The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
Approved Plans

December 17, 2015

THE RITZ-CARLTON®

ALTA/ SCSM
2007 Land Title Survey
H-3



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CVL CONSULTANTS
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Phoenix, Arizona 85014
602-264-6831
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NO.	REVISION	DATE

Coe & Van Loo Consultants, Inc.

A.L.T.A. / A.C.S.M. LAND TITLE SURVEY

RITZ-CARLTON RESORT

22782 LARRY E. SULIVAN
Date Signed 5-20-16
ARIZONA U.S.A.
Expires 6-30-2016

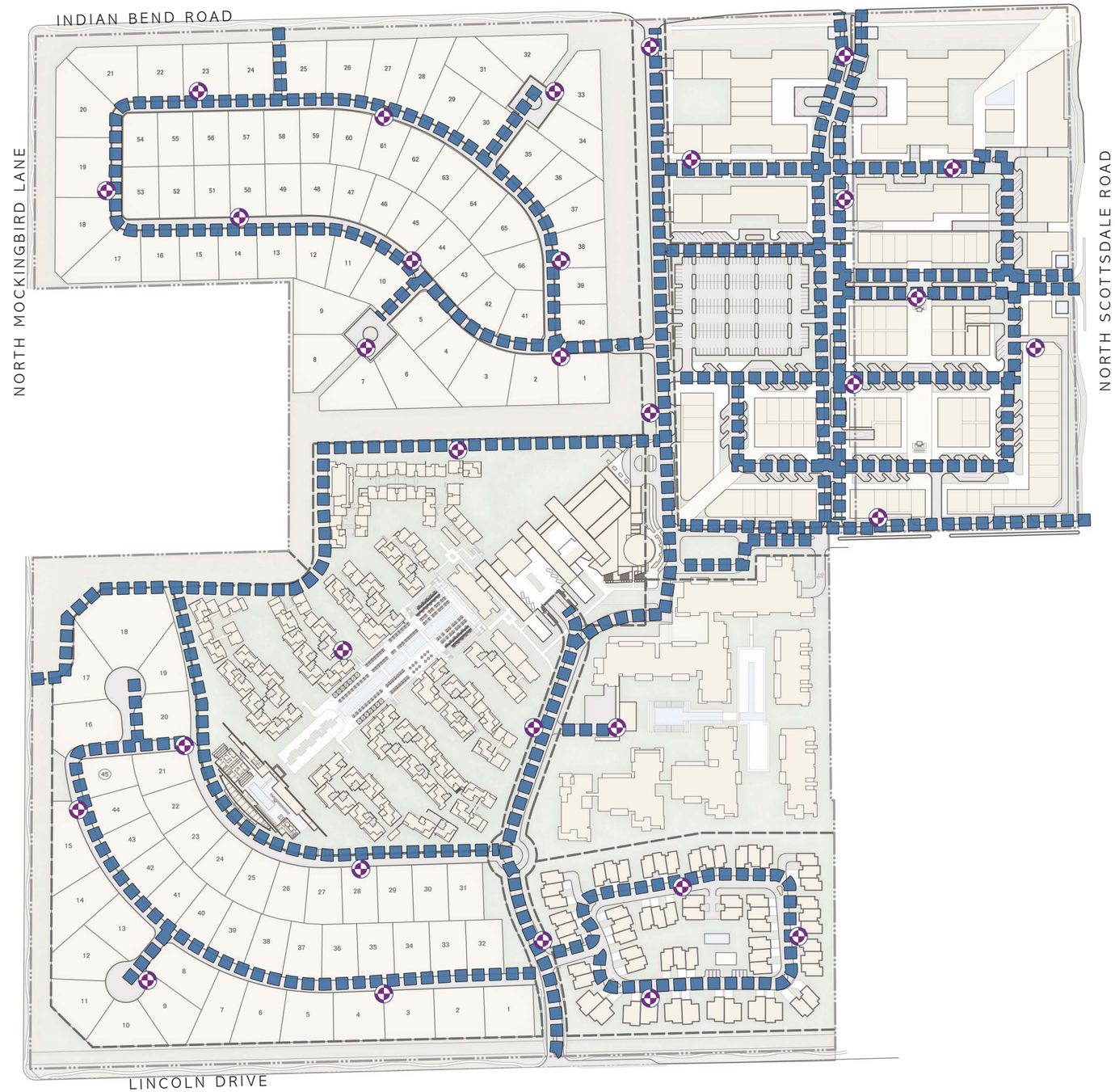
SHEET 4 OF 4

CVL Contact: L. SULLIVAN
CVL Project #: 01-0268901
CVL File #:

LEGEND

Fire Access

Fire Hydrants



N

0 150 300 600 1200

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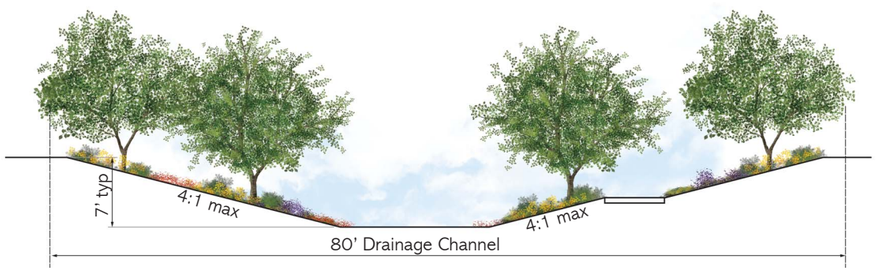
THE RITZ-CARLTON®

FIRE ACCESS

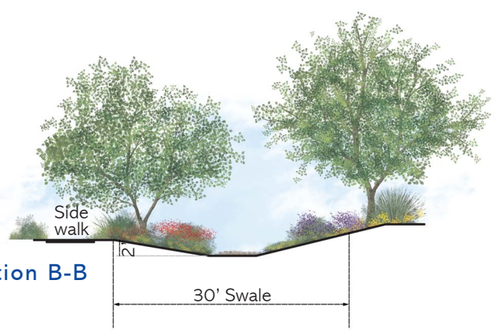
H-5

LEGEND

- Existing Major Topo Line
- Existing Minor Topo Line
- Proposed Major Topo Line
- Proposed Minor Topo Line



Channel Section A-A



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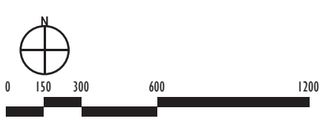

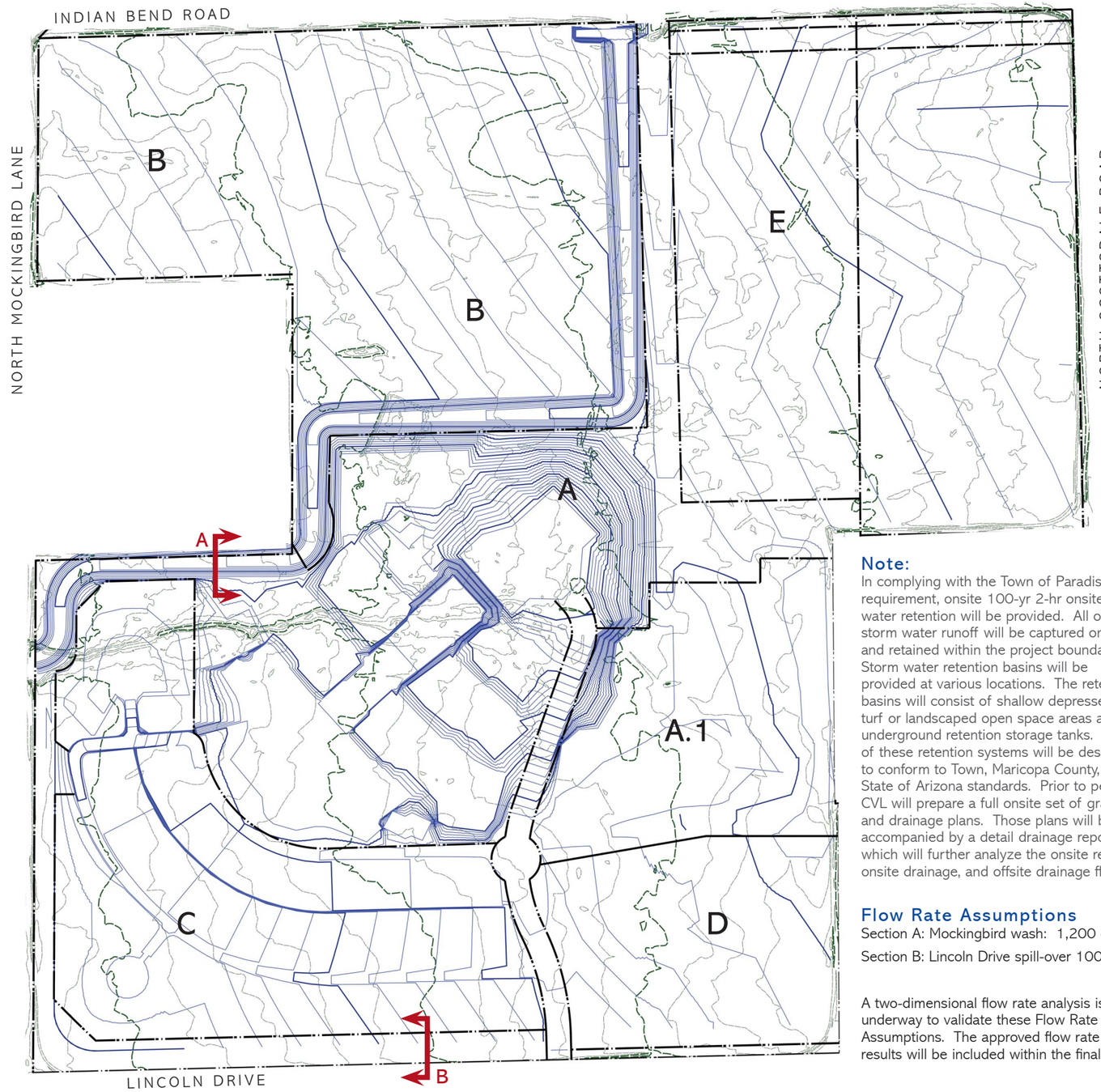

Note:
In complying with the Town of Paradise Valley requirement, onsite 100-yr 2-hr onsite storm water retention will be provided. All onsite storm water runoff will be captured onsite and retained within the project boundary. Storm water retention basins will be provided at various locations. The retention basins will consist of shallow depressed turf or landscaped open space areas and underground retention storage tanks. Each of these retention systems will be designed to conform to Town, Maricopa County, and State of Arizona standards. Prior to permit CVL will prepare a full onsite set of grading and drainage plans. Those plans will be accompanied by a detail drainage report which will further analyze the onsite retention, onsite drainage, and offsite drainage flows

Flow Rate Assumptions

Section A: Mockingbird wash: 1,200 cfs

Section B: Lincoln Drive spill-over 100 cfs

A two-dimensional flow rate analysis is underway to validate these Flow Rate Assumptions. The approved flow rate results will be included within the final SUP

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THE RITZ-CARLTON®

GRADING & DRAINAGE

THE RITZ-CARLTON®

The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
Approved Plans

December 17, 2015 - DRAFT

FIVE STAR DEVELOPMENT

SECTION J - Letters

2355 West Pinnacle Peak Road, Suite 300
Phoenix, AZ 85027 USA
epcor.com

July 9, 2015

Mr. Eric Laurin, P.E.
Coe & Van Loo Consultants, Inc.
4550 N. 12th Street
Phoenix, AZ 85014

Sent via e-mail to: etlaurin@cvlci.com

Re: Will-Serve Letter for Water Service
Ritz Carlton

Dear Mr. Laurin;

This letter is in response to your request to EPCOR Water Arizona Inc. ("EPCOR") regarding EPCOR's willingness to provide water service to the proposed development known as the Ritz Carlton (the "Development"). The Development consists of approximately 125 acres, of which roughly 108 acres is located in the Town of Paradise Valley with the remaining 17 acres in the City of Scottsdale, all located near the northwest corner of Lincoln Drive and Scottsdale Road as shown in Exhibit A. The Development is proposed to consist of 200 hotel guest suites, 160 single family residential units, 760 multi-family units, and approximately 30 acres of retail and restaurant space. EPCOR provides the following information for your consideration:

1. EPCOR has confirmed that the Development is located within the area encompassed by EPCOR's Certificate of Convenience & Necessity ("CC&N") as issued by the Arizona Corporation Commission.
2. Water service to the Development by EPCOR will be conditioned upon the developer entering into a Main Extension Agreement (an "MXA") with EPCOR in a form acceptable to EPCOR, and upon the developer fully performing its obligations under the MXA. The MXA will provide, among other things, that the developer will be responsible for the cost to bring additional water resources and to construct all water main extensions necessary to distribute water from EPCOR's existing system to the individual service line connections in the Development. The design and construction of all such main extensions will be subject to EPCOR's approval, and ownership of the main extensions, together with related real property easement rights, must be transferred to EPCOR prior to the initiation of water service in the Development. All on-site and off-site improvement costs to serve the Development, including the costs for additional water resources and related infrastructure, will be borne by the developer and such costs will not be passed on to existing customers.
3. Based on the developer's projections and the MXA requirements, EPCOR will have adequate water capacity for normal use in the Development upon developer's fulfillment of its obligations under the MXA. Please note that EPCOR does not guarantee the adequacy of its water capacity for fire protection.
4. Developer will be required, as a condition to EPCOR providing water service to the Development, to pay all required fees pursuant to EPCOR's then-current tariffs and as may be provided in the MXA.

This letter assumes that construction of the main extensions within the Development will begin within one (1) year after the date of this letter.

If developer begins construction of any water mains in the Development or any other water service infrastructure intended to serve the Development without, in each instance, the prior written approval of such construction by EPCOR, developer will be proceeding with such construction at its own risk.

This letter does not independently create any rights or obligations in either developer or EPCOR, and is provided to developer for information only. Any agreement between developer and EPCOR for water service in the Development must be memorialized in a written agreement executed and delivered by their respective authorized representatives.

For additional information, please contact me at (623) 445-2402 or at BFinke@epcor.com

Sincerely,

Brad Finke, P.E.
Engineering Manager

EXHIBIT A

Location (Aerial Map) of the Development

CVL CONSULTANTS
4550 North 12th Street | Phoenix, AZ 85014
602.264.6831

September 4, 2015

Re: Ritz Carlton – Previous Hydrologic Studies and Key Drainage and Retention Components
CVL Project No.: 1.01.0268901

Coe & Van Loo Consultants, Inc. (CVL) has been contracted by Five Star Development to provide engineering services in support of the proposed Ritz Carlton Resort (the site) located north of Lincoln Drive, west of Scottsdale Road, south of Indian Bend Road and east of Mockingbird Lane. Furthermore, the site is located in Section 10, Township 2 North, Range 4 East of the Gila and Salt River Meridian.

The purpose of this memorandum is to provide a summary existing hydrologic results and a summary of the various key drainage and retention components that will be required for the project.

Previous Hydrologic Studies

The following four offsite hydrologic analyses were been prepared for the site.

Author	Date	Methodology	Return Period	Peak Runoff (cfs)
Erie & Associates	11/17/2008	HEC-1	100 year, 6 hr.	1,853
FCDMC	06/16/2015	FLO-2D	100 year, 6 hr.	607
CVL	06/06/2015	HEC-1	100 year, 6 hr.	1,079
CVL	04/02/2015	SCS	100 year, 2 hr.	951

Offsite Flows at Mockingbird Lane

Based on previous models and discussions, the preliminary study assumes a peak runoff of 1,200 cfs. This value provides conservativism for preliminary channel sizing until final offsite values are determined using XPSWMM-2D. This peak flowrate was used to determine an average cross-section size needed to safely pass storm flows through the site.

Existing Culvert and Existing Channel

The capacity of the existing wash and 5-12'x4' culvert crossing Mockingbird Lane were calculated using best available data. The existing channel capacity is approximately 600 cfs with accompanying sheet flow and the culvert capacity is approximately 1,750 cfs including 6 inches of roadway overtopping. Culvert analysis results are located in the Appendix. It should be noted that the wash has sediment accumulation and upstream of the wash, the sediment depth is approximately 8 inches. Sediment passing through onto the site may require ongoing maintenance which will be provided by the HOA.

Proposed Channel

The proposed channel was evaluated to determine the required cross-section, slope and roughness that would be required to pass 1,200 cfs while maintaining a flow velocity of six feet per second or less and provide one-foot of freeboard. The results provide a guideline for a nearly maximum channel section and will allow for future, less conservative, channel alternative options depending on the finalized onsite and offsite drainage evaluations. Results are located in the Appendix.

90-degree Channel Bends

Hydraulic evaluation at the 90-degree channel bends will be required to obtain agency approval. Standard guidelines from the FCDMC, Drainage Design Manual, Hydraulics, includes:

6.5.5 Channel Curvature

The minimum radius of a curved channel, measured to the channel centerline, carrying subcritical flows is recommended to be three times greater than the width of the water surface. That is:

$$r_c \geq 3T \quad (6.26)$$

If the channel is carrying supercritical flows, the recommended minimum radius is:

$$r_c = \frac{4V^2T}{gy} \quad (6.27)$$

6.5.6 Superelevation

Curves in a channel cause the maximum flow velocity to shift toward the outside of the bend. Along the outside of the curve, the depth of flow is at a maximum. The consequent rise in the water surface is referred to as superelevation. Under subcritical conditions, the following equation is recommended to estimate the magnitude of the superelevation:

$$y = \frac{0.5V^2T}{gr_c} \quad (6.28)$$

Readers are cautioned to avoid curves in channels with supercritical flows. The shift in the velocity distribution may cause cross-waves to form, which will persist downstream and could severely limit the hydraulic capacity of the channel. Advanced design criteria or physical model studies beyond the scope of this chapter may be required.

Generally, the bends will create turbulence leading off from the inside of the bend and high velocities on the outside of the bend. These conditions will create freeboard and scour issues which will be mitigated through the design of gabions, scour protection and energy dissipation.

Another method which could be used with reasonable success would be to provide aesthetic drop structures three to four feet high immediately upstream of each bend to create controlled turbulence, energy dissipation and water surface profile draw-down within the vicinity of the 90-degree bends.

Onsite Retention

The onsite runoff will be directed into the channel which will have retention at the bottom and still allow offsite flows to pass through the site. The areas of the site that are not feasible for the runoff to be directed to the channel are to be directed into underground or surface retention basins that will be designed for the 100 year, 2-hour storm. A preliminary calculation for the required retention was conducted based on the development type for each part of the site. Retention calculations and volumes for each retention area are shown in the Table included in the Appendix. Retention basin locations and subbasin areas are shown in the Drainage Map. Results show that the retention required is feasible based on available open space areas.

At the time of permit CVL will prepare a full onsite set of grading and drainage plans. Those plans will be accompanied by a detail drainage report which will further analyze the onsite retention, onsite drainage, and offsite drainage flows.

Please feel free to contact me if you have any questions at 602-285-4756 or at bnaba@cvlci.com.

Sincerely,

COE & VAN LOO
Consultants, Inc.

Registered Professional Engineer (Civil)
CERTIFICATE NO. 37325
RYAN WEED
Date Signed 9/4/15
ARIZONA, U.S.A.
Expires: 3/31/17

Ryan Weed, P.E.
CEO

CVL CONSULTANTS
4550 North 12th Street | Phoenix, AZ 85014
602.264.6831

October 9, 2015
Revised October 16, 2015

Mr. James Shano, P.E., C.P.M.
Public Works Director
Town of Paradise Valley
6401 E. Lincoln Drive
Paradise Valley AZ 85253

RE: Paradise Valley Ritz-Carlton
Wastewater Service Analysis

Dear Mr. Shano:

This letter has been revised in accordance with comments received from the Town of Paradise Valley on October 14, 2015.

The Paradise Valley Ritz-Carlton project encompasses approximately 134 acres of land located on the northwest corner of Scottsdale Road and Lincoln Drive. A small portion of the property is located in the City of Scottsdale (City), approximately 17 acres, with the balance situated within the town limits of Paradise Valley (Town). Desert Ventures, the parcel owner, has retained Coe & Van Loo Consultants, Inc. (CVL) to perform due diligence, master planning, lotting and drainage analyses as part of its program to develop the site as a resort. An analysis to determine the site's water and sewer service requirements is also included in our scope of work.

CVL has performed a preliminary investigation to identify potential issues in providing sewer service to the property. Our findings to date are summarized below:

- The Town of Paradise Valley and the City of Scottsdale are signatories to an Intergovernmental Agreement (IGA) that stipulates that the City will reserve up to approximately 1,000,000 gpd of collection system capacity for wastewater generated by properties within the Town, as further described below.

- Per the IGA, the Town currently has purchased 1,026,479 gpd of capacity in Scottsdale's collection system. Currently, the average daily flow that the Town discharges to the Scottsdale system is approximately 480,000 gpd. This is based on flow data obtained from metering stations that monitor flow from 13 basins plus calculated flows from 6 basins that are unmetered. However, the IGA bases discharge capacity on the peak discharge, which is the average of the two highest consecutive day discharges per year. The Town's Master Plan currently estimates the current overall peak discharge rate from the Town to the Scottsdale system to be approximately 890,000 gpd.

- Estimated peak wastewater discharges of 388,000 gpd were calculated for that portion of Ritz-Carlton within the Town limits using the latest land use and layout plans for the property. The proposed sewer collection system for the property discharges flow to the existing 8-inch sewer in Indian Bend Road upstream of the City flow monitoring station.

- CVL had previously estimated that the portion of the proposed Ritz Carlton development within Paradise Valley would discharge an Average Daily Flow of approximately 215,657 gpd to the Scottsdale system. Peak flow has since been recalculated based on the design factors presented in the Town's Master Plan. The Ritz Carlton development will be located in Basin "O". The current peaking factor for Basin "O" is 1.8. Therefore, the peak discharge the Ritz Carlton development is expected to contribute is estimated to be 388,183 gpd. This discharge when added to the current estimated peak discharge of 890,000 gpd is 1,278,183 gpd. This projected discharge is over the Town's current discharge limit of 1,026,479 gpd. Therefore, the Town will ultimately be required to purchase an additional 251,704 gpd of capacity from Scottsdale due to projected discharges from the Ritz Carlton development.

- Peak Day flow originating from the 17 acres of the development within the City sewer service area are estimated to be approximately 91,000 gpd and will be connected to an existing 8-inch sewer line in Scottsdale Road.

CVL has been asked to proceed with the preparation of a Wastewater Master Plan to fully analyze the sewer system requirements of the Ritz-Carlton development. The Master Plan will include the following tasks:

- Prepare an accurate routing map of the proposed sewer system using approved site lotting and street layouts.

- Existing sewer manhole invert elevations will be determined through a topographical survey performed by CVL survey crews. Manholes upstream of the Indian Bend flow monitoring station will be dipped to determine pipe slopes and capacities.

- Discharges from the Paradise Valley and Scottsdale parcels will be updated to reflect the latest land use plan and sewer unit factors.

- Information contained in the latest City of Scottsdale Integrated Water Master Plan will be reviewed and all applicable information included in our analysis.

- Confirm that the City sewer system can accommodate the Ritz-Carlton flows. Coordinate with the City Engineering Department for the routing of the property's discharges through the City collection system using the City's current Sewer System Model.

- Develop alternatives to provide sewer service to Ritz-Carlton. Identify the cost and constructability of each alternative as well as their ease of implementation.

- Our findings will be summarized in a report that will include the necessary figures and exhibits to adequately describe the work.

- The Draft Report will be submitted to the Town of Paradise Valley and the City of Scottsdale following client approval.

- Incorporate all comments received in a Final Report to be distributed to all reviewing agencies.

Please do not hesitate to call us should there be any questions on these matters.

Sincerely,

COE & VAN LOO
Consultants, Inc.

Ryan Weed, PE
President, CEO

RW:aje

December 7, 2015

The Ritz Carlton Resort

Wastewater Master Plan

Registered Professional Engineer (Civil)
CERTIFICATE NO.
29436
FREDERICK
CARL
RENN
Date Signed 12/07/15
ARIZONA, U.S.A.
Expires 9-30-16

CVL CONSULTANTS
1.01.0268903

Prepared for:

Five Star Development

6720 N. Scottsdale Road, Suite 130
Scottsdale, Arizona 85253
Contact: Richard Frazee
480.214.6071

Prepared by:

CVL Consultants, Inc.

4550 N 12th Street
Phoenix, Arizona 85014
Contact: Eric Laurin, PE
602.264.6831

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Appendix A Sewer Capacity Analysis

1.0 INTRODUCTION

1.1 General Description

The Ritz Carlton Resort property is located on 123 acres of undeveloped land in Paradise Valley and Scottsdale, Arizona. The property will be developed for mixed uses that includes a resort hotel and residential and commercial uses. The sewer system will outfall to the City of Scottsdale Sewer System will be owned and operated by the Town of Paradise Valley and the City of Scottsdale. The system's design will adhere to the *City of Scottsdale Design Standards and Policies Manual, January 2010*.

1.2 Project Location

The Ritz Carlton Resort property is located in the Town of Paradise Valley and the City of Scottsdale, Maricopa County, Arizona in the northeast quarter of Section 10, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian. The property is bounded by Indian Bend Road on the north, Lincoln Drive on the south, Scottsdale Road on the east and Mockingbird Lane on the west as shown in Figure 1.

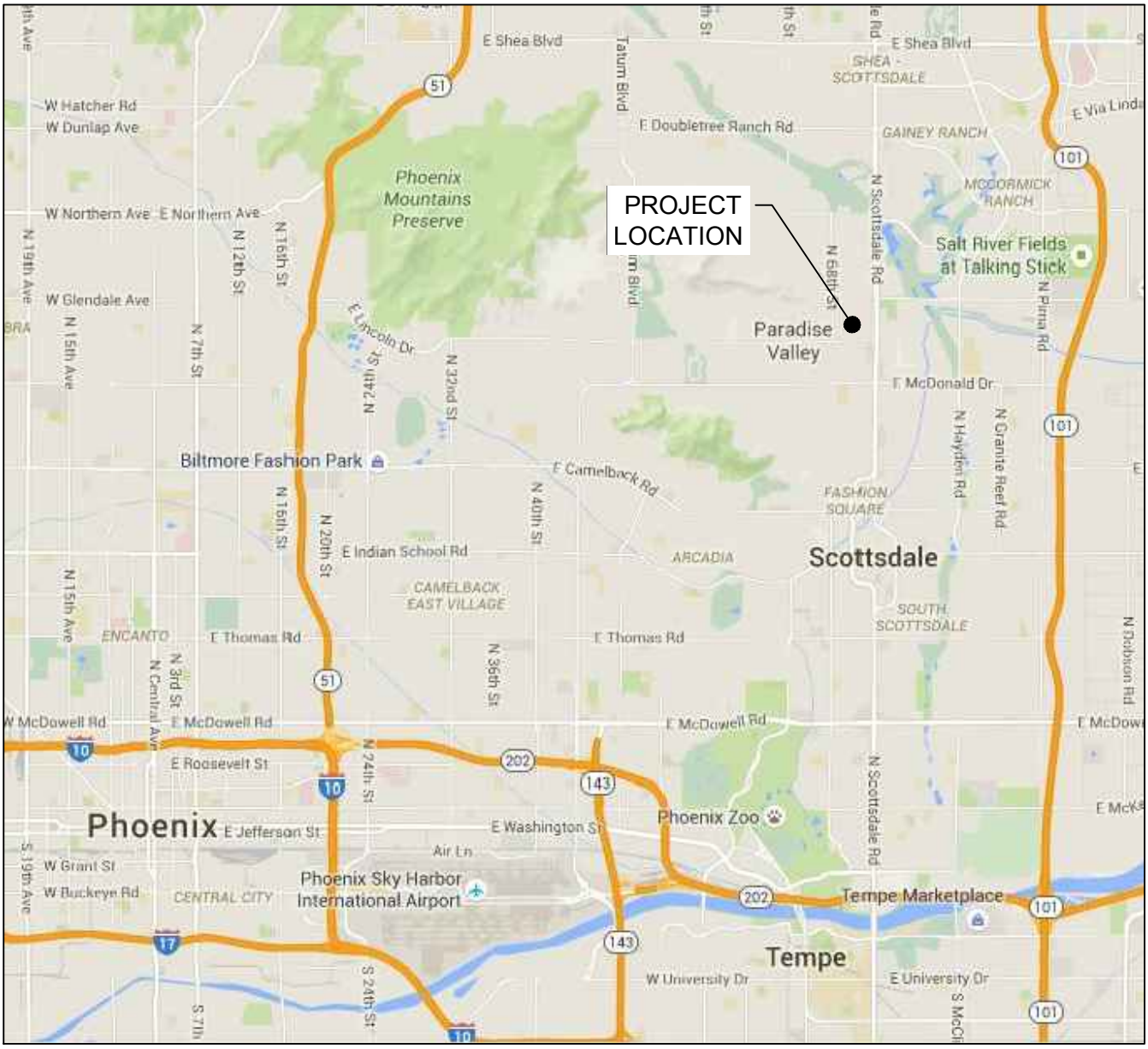
1.3 Land Use

The proposed Ritz Carlton Resort will consist of a resort hotel, resort-related single family residential, multi-family residential and mixed-use land uses as shown on Figure 2. Of the 123 acres, 105.3 acres is located in Paradise Valley and 17.4 acres is located in Scottsdale. A breakdown of the proposed land uses and number of dwelling units (DUs) or rooms are presented in Table 1.

Table 1 – Proposed Land Use

Parcel	Land Use	Acreage
Town of Paradise Valley		
A	Resort Hotel (rooms)	18.1
A1	Resort Villas (DUs)	11.1
B	Detached Single Family Residential (DUs)	31.3
C	Detached Single Family Residential (DUs)	22.5
D	Attached Single Family Residential (DUs)	8.8
E[1]	Mixed-Use	13.5
	Subtotal	**105.3**
City of Scottsdale		
F[1]	Mixed-Use	17.4
	Subtotal	**17.4**
	TOTAL	**123**

[1]*These parcels are deferred until more detailed planning is available.*

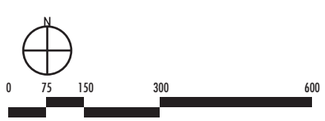


SCALE: NTS FIGURE 1 4550 North 12th Street Phoenix, Arizona 85014 Phone 602-264-6831 http://www.cvlci.com	RITZ CARLTON VICINITY MAP	CVL CONSULTANTS 1.01.0268903

N:\01\0268901\Enviro\Exhibits\Vicinity Map.dwg **CassandraA December 7, 2015**

MASTER PLAN

Area	Description
A | A1	Ritz-Carlton Hotel and Villas
B	Single Family Resort Related Residential
C	Single Family Ritz-Carlton Branded Residential
D	Resort Related Attached Residences
E1	Resort Related Retail
E2	Resort Related Mixed Use (Deferred –Final Site Plan to Follow)



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contact: Dawn Carter

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NELSEN PARTNERS
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WITHEY MORRIS, PLC
Land Use & Zoning Attorney
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Phoenix, Arizona 85016
602.230.0600
contact: Jason Morris

FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
November 24, 2015

THE RITZ-CARLTON®

MASTER PLAN
Land Use Plan
D-1

1.4 Topographic Conditions

The Ritz Carlton Resort property ranges in elevation from approximately 1324 feet above mean sea level (MSL) on the southwest corner of the property to approximately 1301 feet MSL on the northeast corner of the property. Overall, the property generally slopes to the east northeast toward Scottsdale Road. In order to enhance the views of Camelback Mountain and the Phoenix Mountain Preserve, the site will be raised so the highest elevation will be 1336 feet MSL near the center of the site where the resort lobby, ballrooms and belowground parking will be.

1.5 Existing Sewer Service Capacity

The Town of Paradise Valley has two wastewater providers, the City of Phoenix and the City of Scottsdale. The Ritz Carlton Resort lies within Basin "O" per the *Town of Paradise Valley Wastewater Master Plan (Arcadis, May 2015)* and will be served by the City of Scottsdale. Per an Intergovernmental Agreement (IGA), Paradise Valley has purchased 1,026,479 gpd of capacity in Scottsdale's collection system. Currently, the average daily flow that the Town discharges to the Scottsdale system is approximately 480,000 gpd. This is based on flow data obtained from metering stations that monitor flows from 13 basins plus calculated flows from 6 unmetered basins. The IGA bases discharge capacity on the peak discharge, which is the average of the two highest consecutive day discharges per year. The Town's wastewater master plan currently estimates the current overall peak discharge rate from the Town to the Scottsdale system is approximately 890,000 gpd. Flows from the Ritz Carlton Resort will be in addition to this amount.

2.0 WASTEWATER SYSTEM DESIGN CRITERIA

This wastewater report is based on criteria from the *City of Scottsdale Design Standards and Policies Manual, January 2010.* Design flow criteria are presented in Table 2 and Hydraulic design criteria are presented in Table 3.

Table 2 – Design Flow Criteria

Description	Average Day Flow	Peaking Factor (PF)
Residential (8 to 12-inch)	100 gpd/person	4
Residential (> 12-inch)	105 gpd/person	$[1+14/(4+P^{1/2})]$
Commercial/Retail	0.5 gpd/sf	3
Office	0.4 gpd/sf	3
Restaurant	1.2 gpd/sf	6
High Density Condominium	140 gpd/room	4.5
Resort Hotel (includes site amenities)	380 gpd/room	4.5
School (without cafeteria)	30 gpd/student	6
School (with cafeteria)	50 gpd/student	6
Cultural	0.1 gpd/sf	3

Residential Population Density = 2.5 persons/DU
P = Population/1000

Table 3 – Hydraulic Design Criteria

Description	Criteria
Minimum Sewer Diameter	8-inch
Minimum Full Pipe Velocity	2.5 fps
Manning's "n"	0.013
Maximum Pipe Velocity	10 fps
d/D (≤ 12-inch) at Peak Flow	0.65
d/D (> 12-inch) at Peak Flow	0.70
Manhole Spacing (8 to 15-inch)	500 ft
Minimum Drop Across Manhole	0.1 ft
Change in Sewer Diameter	match crowns
Minimum Depth of Cover	4 ft

2.1 Design Calculations

Table 4 contains the wastewater flow generation calculations for flows for the Ritz Carlton Resort.

Table 4 – Wastewater Flow Generation

Parcel	Land Use	Unit	No. of Units	Unit Flow (gpd/unit)	Average Flow (gpd)	PF	Peak Flow (gpd)
Town of Paradise Valley							
A	Resort Hotel	Rooms	200	380	76,000	4.5	342,000
A1	Resort Villas	DU	120	280[1]	33,600	4.5	151,200
C	Detached Single Family	DU	45	250[2]	11,250	4.0	45,000
D	Attached Single Family	DU	74	280[1]	20,720	4.5	93,240
Discharge to Scottsdale Rd. 12-inch Sewer				--	**141,570**	--	**631,440**
B	Detached Single Family	DU	72	250[2]	18,000	4.0	72,000
E	Mixed Use	AC	13.5	1,500[3]	20,250	3.0	60,750
Discharge to Indian Bend Rd. 8-inch Sewer				--	**38,250**	--	**132,750**
Paradise Valley Subtotal				--	**179,820**	--	**763,880**
Current Paradise Valley Peak Flow[4]				--	--	--	890,000
Total Combined Flow to Scottsdale System				--	--	--	1,653,880
Current Purchased Capacity in Scottsdale System[5]				--	--	--	(1,026,479)
Additional Capacity to be Purchased							**627,401**
City of Scottsdale							
F	Mixed Use	AC	17.4	1,500	26,100	3.0	78,300
Scottsdale Subtotal				--	**26,100**	--	**78,300**
TOTAL				--	**205,920**	--	**842,180**

[1]*Two rooms per villa or attached unit are assumed.*
[2]*All units will discharge to 8-inch sewers.*
[3]*Assumed based on EPCOR water commercial demand criterion of 1,700 gpd for mixed use.*
[4]*See Town of Paradise Valley Wastewater Master Plan (Arcadis, May 2015).*
[5]*See Intergovernmental Agreement between Paradise Valley and City of Scottsdale.*

As shown, Paradise Valley will ultimately need to purchase an additional 627,401 gpd of capacity in the Scottsdale system to accommodate the Ritz Carlton discharges.

2.2 Wastewater Collection System Description

The wastewater collection system is designed to take advantage of topographic conditions wherever possible. The sewer mains are sized according to the anticipated cumulative flows as the lines are routed to the trunk line tie-in locations. Pipe sizes and minimum and maximum slopes required are based on the criteria established in Tables 2 and 3.

LEGEND

- PROPOSED 8" SANITARY SEWER
- PROPOSED 12" SANITARY SEWER
- EXISTING 36" SANITARY SEWER
- EXISTING SANITARY SEWER AND MANHOLE
- NEW SANITARY SEWER AND MANHOLE

CVL CONSULTANTS
4550 North 12th Street
Phoenix, Arizona 85014
602-264-6831
www.cvlci.com

WASTEWATER MASTER PLAN

RITZ CARLTON RESORT

PARADISE VALLEY, MARICOPA COUNTY, ARIZONA

SCALE 1" = 150'

EXHIBIT

4550 North 12th Street
Phoenix, Arizona 85014
Phone 602-264-6831
http://www.cvlci.com

Printed By: PaulM Print Date: December 7, 2015 Filename: N:\01\0268901\Enviro\Exhibits\San_Sewer Layout.dwg

3.0 EXISTING AND PROPOSED INFRASTRUCTURE

3.1 Existing Infrastructure

There is no existing infrastructure on site. Existing 8-inch gravity sewers are adjacent to the site in Mockingbird Lane, Indian Bend Road, Lincoln Drive and Scottsdale Road. A 12-inch gravity sewer also exists in Scottsdale Road. A metering station for Basin "O" (MS-O), which measures the flow from Paradise Valley to the Scottsdale system exits on the 8-inch sewer in Indian Bend Road at the Paradise Valley/Scottsdale boundary. An existing 36-inch trunk sewer collects flow at the intersection of Indian Bend and Scottsdale Roads and carries it west to the Hayden Road interceptor sewer. (See Figure 3 for the locations of these facilities and the direction of flow.) Flow is ultimately treated at the 91st Avenue Regional Wastewater Treatment Plant in west Phoenix, owned and operated by the Sub-Regional Operating Group (SROG).

3.2 Proposed Infrastructure

As shown on Figure 2, the Ritz Carlton Resort will be located near the center of the property. The grade will be raised to an elevation of approximately 1336 feet MSL in order to enhance the resort's views of Camelback Mountain and the Phoenix Mountain Preserve. All of the proposed structures on-site will be served by 8-inch gravity sewers. The proposed gravity sewers will tie into the existing infrastructure at two locations: 1) Indian Bend Road 8-inch sewer and 2) Scottsdale Road 12-inch sewer. The proposed sewers and points of tie-in are shown on Figure 3.

As shown, the 666,440 gpd of peak flow from Parcels A, A1, B and D will discharge to the existing 12-inch sewer in Scottsdale Road. A new metering station (MS-O2) will be constructed at the Paradise Valley/Scottsdale boundary to measure these flows.

Flow from Parcels C and E (105,750 gpd peak) will discharge to the existing 8-inch gravity sewer in Indian Bend Road at two separate points of connection. This flow will be measured at the existing metering station (MS-O).

In the future, the 78,300 gpd of peak flows from Parcel F, which is within the City of Scottsdale, will discharge directly into the existing 12-inch gravity sewer in Scottsdale Road. All of these combined discharges will be collected in the existing 36-inch trunk main at the intersection of Indian Bend and Scottsdale Roads.

4.0 SUMMARY

This wastewater system analysis presents the collection system design criteria and proposed wastewater infrastructure for the Ritz Carlton Resort. This wastewater system will be owned and operated by the City of Scottsdale. The sewer infrastructure conforms to the City of Scottsdale's minimum standards and is consistent with the City's current *Design Standards and Policies Manual, January 2010.*

The results of this analysis are summarized as follows:

- The proposed collection system is designed to me the *City of Scottsdale Design Standards and Policies Manual, January 2010.*
- The proposed collection system will be comprised of 8-inch and 12-inch gravity sewers. No lift stations are required.
- Wastewater from Parcels A, A1, C and D will discharge to the existing 12-inch gravity sewer in Scottsdale Road.
- A new metering station will be constructed in at the Paradise Valley/Scottsdale boundary to measure flow discharged to Scottsdale Road.
- Wastewater from Parcels B and E will discharge to the existing 8-inch sewer in Indian Bend Road and will be metered at the existing metering station (MS-O).
- Design of Parcel F will discharge directly to the existing 12-inch sewer in Scottsdale Road.
- The average daily flow for all parcels of the Ritz Carlton Resort is estimated to be 0.206 MGD, 0.180 MGD from the Paradise Valley portion and 0.026 MGD from the Scottsdale portion.
- The peak flow for all parcels of the Ritz Carlton Resort is estimated to be 0.842 MGD, 0.764 MGD from the Paradise Valley portion and 0.078 MGD from the Scottsdale portion.
- Per the IGA, the Town of Paradise Valley has a current purchased capacity of 1.026 MGD (peak) in the Scottsdale system.
- Per the *Town of Paradise Valley Wastewater Master Plan*, the Town is currently discharging approximately 0.890 MGD (peak) to the Scottsdale system.
- Ultimately, the Town of Paradise Valley will have to purchase approximately 0.627 MGD of additional sewer capacity from the City of Scottsdale.

APPENDIX A

SEWER CAPACITY ANALYSIS

TABLE A-1
ON-SITE SEWER ANALYSIS
DISCHARGE TO EXISTING INDIAN BEND RD 8" SEWER AND SCOTTSDALE RD 12" SEWER
THE RITZ CARLTON RESORT

Upstream MH	Downstream MH	ID	# of Units	Unit Flow (gpd)	Average Day Flow (gpd)	Cumulative Avg Flow (gpd)	Peaking Factor	Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Estimated Upstream Ground Elevation (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Actual Peak Velocity (fps)	d/D
BEGIN ON-SITE																					
1c	1b	A	24	380	9,120	9,120	4.5	41,040	41,040												
						9,120			41,040	**1324.00**	90	8	0.0051	6.33	1318.34	1317.88	557,665	7%	2.5	4.00	0.09
1b	1a	A	0	380	0	0	4.5	0	0												
					9,120	9,120		41,040	41,040												
						9,120			41,040	**1324.00**	45	8	0.0051	6.89	1317.78	1317.55	557,665	7%	2.5	4.00	0.09
1a	1	A	20	380	7,600	7,600	4.5	34,200	34,200												
					9,120	16,720		41,040	75,240												
						16,720			75,240	**1324.00**	60	8	0.0051	7.22	1317.45	1317.14	557,665	13%	2.5	7.33	0.09
1	2	A	40	380	15,200	15,200	4.5	68,400	68,400												
					16,720	31,920		75,240	143,640												
						31,920			143,640	**1324.00**	105	8	0.0200	7.62	1317.04	1314.94	1,104,342	13%	4.9	14.00	0.09
2	3	A	18	380	6,840	6,840	4.5	30,780	30,780												
					31,920	38,760		143,640	174,420												
						38,760			174,420	**1322.00**	90	8	0.0200	7.82	1314.84	1313.04	1,104,342	16%	4.9	3.58	0.27
3	4	A	0	380	0	0	4.5	0	0												
					38,760	38,760		174,420	174,420												
						38,760			174,420	**1318.00**	80	8	0.0051	5.72	1312.94	1312.54	557,665	31%	2.5	2.19	0.38
4	5	A	22	380	8,360	8,360	4.5	37,620	37,620												
					38,760	47,120		174,420	212,040												
						47,120			212,040	**1318.50**	120	8	0.0051	6.73	1312.44	1311.82	557,665	38%	2.5	2.31	0.43
5	6	A	13	380	4,940	4,940	4.5	22,230	22,230												
					47,120	52,060		212,040	234,270												
						52,060			234,270	**1319.00**	40	8	0.0051	7.94	1311.72	1311.52	557,665	42%	2.5	2.37	0.45
6	7		0		0	0		0	0												
					52,060	52,060		234,270	234,270												
						52,060			234,270	**1318.50**	360	8	0.0051	7.75	1311.42	1309.58	557,665	42%	2.5	2.37	0.45
16	17	C	5	250	1,250	1,250	4.0	5,000	5,000												
						1,250			5,000	**1319.00**	195	8	0.0051	8.22	1311.44	1310.45	557,665	1%	2.5	0.77	0.07
17	7		0		0	0		0	0												
					1,250	1,250		5,000	5,000												
						1,250			5,000	**1318.50**	150	8	0.0051	8.82	1310.35	1309.58	557,665	1%	2.5	0.77	0.07
7	8	C	1	250	250	250	4.0	1,000	1,000												
		A	2	380	760	1,010	4.5	3,420	4,420												
					1,250	2,260		5,000	9,420												
		6 to 7			52,060	54,320		234,270	243,690												
						54,320			243,690	**1317.00**	135	8	0.0051	8.18	1309.48	1308.79	557,665	44%	2.5	2.39	0.46

TABLE A-1
ON-SITE SEWER ANALYSIS
DISCHARGE TO EXISTING INDIAN BEND RD 8" SEWER AND SCOTTSDALE RD 12" SEWER
THE RITZ CARLTON RESORT

Upstream MH	Downstream MH	ID	# of Units	Unit Flow (gpd)	Average Day Flow (gpd)	Cumulative Avg Flow (gpd)	Peaking Factor	Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Estimated Upstream Ground Elevation (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Actual Peak Velocity (fps)	d/D
8	9	C	2	250	500	500	4.0	2,000	2,000												
					54,320	54,820		243,690	245,690												
						54,820			245,690	**1316.00**	150	8	0.0051	7.97	1308.69	1307.93	557,665	44%	2.5	2.40	0.46
9	10	C	2	250	500	500	4.0	2,000	2,000												
					54,820	55,320		245,690	247,690												
						55,320			247,690	**1315.00**	150	8	0.0051	7.84	1307.83	1307.06	557,665	44%	2.5	2.40	0.47
10	11	C	2	250	500	500	4.0	2,000	2,000												
					55,320	55,820		247,690	249,690												
						55,820			249,690	**1314.50**	190	8	0.0051	8.20	1306.96	1306.00	557,665	45%	2.5	2.41	0.47
11	12	A	12	380	4,560	4,560	4.5	20,520	20,520												
		C	3	250	750	5,310	4.0	3,000	23,520												
					55,820	61,130		249,690	273,210												
						61,130			273,210	**1314.00**	255	8	0.0051	8.77	1305.90	1304.60	557,665	49%	2.5	2.47	0.49
18	19	C	2	250	500	500	4.0	2,000	2,000												
						500			2,000	**1318.50**	180	8	0.0051	5.02	1314.14	1313.23	557,665	0%	2.5	0.19	0.09
19	20	C	5	250	1,250	1,250	4.0	5,000	5,000												
					500	1,750		2,000	7,000												
						1,750			7,000	**1318.50**	270	8	0.0051	6.04	1313.13	1311.75	557,665	1%	2.5	0.68	0.09
21	20	C	7	250	1,750	1,750	4.0	7,000	7,000												
						1,750			7,000	**1319.50**	210	8	0.0051	7.35	1312.82	1311.75	557,665	1%	2.5	0.68	0.09
20	22	C	3	250	750	750	4.0	3,000	3,000												
					1,750	2,500		7,000	10,000												
		19 to 20			1,750	4,250		7,000	17,000												
						4,250			17,000	**1318.50**	240	8	0.0051	7.52	1311.65	1310.42	557,665	3%	2.5	1.66	0.09
22	23	C	5	250	1,250	1,250	4.0	5,000	5,000												
					4,250	5,500		17,000	22,000												
						5,500			22,000	**1318.50**	180	8	0.0051	8.84	1310.32	1309.41	557,665	4%	2.5	2.14	0.09
23	24	C	6	250	1,500	1,500	4.0	6,000	6,000												
					5,500	7,000		22,000	28,000												
						7,000			28,000	**1316.50**	270	8	0.0051	7.86	1309.31	1307.93	557,665	5%	2.5	2.73	0.09
24	14	C	2	250	500	500	4.0	2,000	2,000												
					7,000	7,500		28,000	30,000												
						7,500			30,000	**1314.50**	265	8	0.0051	7.34	1307.83	1306.48	557,665	5%	2.5	2.92	0.09
14	13		0		0	0		0	0												
					7,500	7,500		30,000	30,000												
						7,500			30,000	**1314.50**	255	8	0.0051	8.79	1306.38	1305.08	557,665	5%	2.5	2.92	0.09

TABLE A-1
ON-SITE SEWER ANALYSIS
DISCHARGE TO EXISTING INDIAN BEND RD 8" SEWER AND SCOTTSDALE RD 12" SEWER
THE RITZ CARLTON RESORT

Upstream MH	Downstream MH	ID	# of Units	Unit Flow (gpd)	Average Day Flow (gpd)	Cumulative Avg Flow (gpd)	Peaking Factor	Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Estimated Upstream Ground Elevation (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Actual Peak Velocity (fps)	d/D
13	12		0	250	0	0		0	0												
					7,500	7,500		30,000	30,000												
						7,500			30,000	**1312.00**	75	8	0.0051	7.69	1304.98	1304.60	557,665	5%	2.5	2.92	0.09
12	33		0		0	0		0	0												
					7,500	7,500		30,000	30,000												
		11 to 12			61,130	68,630		273,210	303,210												
						68,630			303,210	**1312.00**	75	8	0.0051	8.17	1304.50	1304.11	557,665	54%	2.5	2.53	0.52
29	30	A	10	380	3,800	3,800	4.5	17,100	17,100												
						3,800			17,100	**1334.00**	210	8	0.0400	9.25	1325.41	1317.01	1,561,776	1%	6.9	2.29	0.07
30	31	A	10	380	3,800	3,800	4.5	17,100	17,100												
					3,800	7,600		17,100	34,200												
						7,600			34,200	**1327.00**	165	8	0.0400	10.75	1316.91	1310.31	1,561,776	2%	6.9	2.82	0.10
31	32	A	13	380	4,940	4,940	4.5	22,230	22,230												
					7,600	12,540		34,200	56,430												
						12,540			56,430	**1320.00**	90	8	0.0400	10.45	1310.21	1306.61	1,561,776	4%	6.9	3.28	0.13
32	33	A	16	380	6,080	6,080	4.5	27,360	27,360												
					12,540	18,620		56,430	83,790												
						18,620			83,790	**1315.00**	60	8	0.0400	9.15	1306.51	1304.11	1,561,776	5%	6.9	3.69	0.16
33	35		0		0	0		0	0												
					18,620	18,620		83,790	83,790												
		12 to 33			68,630	87,250		303,210	387,000												
						87,250			387,000	**1312.00**	75	8	0.0100	8.65	1304.01	1303.26	780,888	50%	3.5	3.46	0.50
35	34	A1	30	280	8,400	8,400	4.5	37,800	37,800												
					87,250	95,650		387,000	424,800												
						95,650			424,800	**1312.00**	360	8	0.0100	9.50	1303.16	1299.56	780,888	54%	3.5	3.54	0.52
34	44	A1	15	280	4,200	4,200	4.5	18,900	18,900												
					95,650	99,850		424,800	443,700												
						99,850			443,700	**1309.00**	270	8	0.0100	10.20	1299.46	1296.76	780,888	57%	3.5	3.58	0.54
38	39	D	10	280	2,800	2,800	4.5	12,600	12,600												
						2,800			12,600	**1313.00**	300	8	0.0051	10.57	1303.10	1301.57	557,665	2%	2.5	1.02	0.10
39	39a	D	2	280	560	560	4.5	2,520	2,520												
					2,800	3,360		12,600	15,120												
						3,360			15,120	**1312.50**	60	8	0.0051	11.70	1301.47	1301.16	557,665	3%	2.5	1.08	0.11
39a	40	D	4	280	1,120	1,120	4.5	5,040	5,040												
					3,360	4,480		15,120	20,160												
						4,480			20,160	**1312.50**	195	8	0.0051	12.10	1301.06	1300.07	557,665	4%	2.5	1.17	0.13

TABLE A-1
ON-SITE SEWER ANALYSIS
DISCHARGE TO EXISTING INDIAN BEND RD 8" SEWER AND SCOTTSDALE RD 12" SEWER
THE RITZ CARLTON RESORT

Upstream MH	Downstream MH	ID	# of Units	Unit Flow (gpd)	Average Day Flow (gpd)	Cumulative Avg Flow (gpd)	Peaking Factor	Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Estimated Upstream Ground Elevation (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Actual Peak Velocity (fps)	d/D
41	40	D	5	280	1,400	1,400	4.5	6,300	6,300												
						1,400			6,300	**1311.00**	135	8	0.0051	10.91	1300.76	1300.07	557,665	1%	2.5	0.83	0.07
40	47	D	9	280	2,520	2,520	4.5	11,340	11,340												
					1,400	3,920		6,300	17,640												
		39a to 40			4,480	8,400		20,160	37,800												
						8,400			37,800	**1310.00**	150	8	0.0051	10.70	1299.97	1299.20	557,665	7%	2.5	1.41	0.18
47	46	D	3	280	840	840	4.5	3,780	3,780												
					8,400	9,240		37,800	41,580												
						9,240			41,580	**1310.50**	60	8	0.0051	12.06	1299.10	1298.80	557,665	7%	2.5	1.45	0.18
46	45	D	12	280	3,360	3,360	4.5	15,120	15,120												
					9,240	12,600		41,580	56,700												
						12,600			56,700	**1310.00**	270	8	0.0051	11.97	1298.70	1297.32	557,665	10%	2.5	1.59	0.22
42	43	D	10	280	2,800	2,800	4.5	12,600	12,600												
						2,800			12,600	**1311.50**	240	8	0.0100	9.95	1302.22	1299.82	780,888	2%	3.5	1.29	0.09
43a	43	D	7	280	1,960	1,960	4.5	8,820	8,820												
						1,960			8,820	**1310.50**	105	8	0.0100	8.95	1302.22	1299.82	780,888	1%	3.5	1.16	0.07
43	45	D	10	280	2,800	2,800	4.5	12,600	12,600												
					1,960	4,760		8,820	21,420												
		42 to 43			2,800	7,560		12,600	34,020												
						7,560			34,020	**1310.50**	240	8	0.0100	11.45	1299.72	1297.32	780,888	4%	3.5	1.74	0.14
45	44	D	2	280	560	560	4.5	2,520	2,520												
					7,560	8,120		34,020	36,540												
		46 to 45			12,600	20,720		56,700	93,240												
						20,720			93,240	**1308.50**	90	8	0.0051	11.95	1297.22	1296.76	557,665	17%	2.5	1.84	0.28
44	37	A1	15	280	4,200	4,200	4.5	18,900	18,900												
					20,720	24,920		93,240	112,140												
		34 to 44			99,850	124,770		443,700	555,840												
						124,770			555,840	**1309.00**	105	12	0.0051	13.57	1296.43	1295.90	1,644,184	34%	3.2	2.93	0.40
37	36	A1	15	280	4,200	4,200	4.5	18,900	18,900												
					124,770	128,970		555,840	574,740												
						128,970			574,740	**1309.00**	345	12	0.0051	14.20	1295.80	1294.04	1,644,184	35%	3.2	2.96	0.41
36	25	A1	15	280	4,200	4,200	4.5	18,900	18,900												
					128,970	133,170		574,740	593,640												
						133,170			593,640	**1308.00**	405	12	0.0051	15.06	1293.94	1291.87	1,644,184	36%	3.2	2.98	0.41
27	26	A1	30	280	8,400	8,400	4.5	37,800	37,800												
						8,400			37,800	**1311.00**	210	8	0.0051	16.63	1295.03	1293.96	557,665	7%	2.5	1.41	0.18

TABLE A-1
ON-SITE SEWER ANALYSIS
DISCHARGE TO EXISTING INDIAN BEND RD 8" SEWER AND SCOTTSDALE RD 12" SEWER
THE RITZ CARLTON RESORT

Upstream MH	Downstream MH	ID	# of Units	Unit Flow (gpd)	Average Day Flow (gpd)	Cumulative Avg Flow (gpd)	Peaking Factor	Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Estimated Upstream Ground Elevation (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Actual Peak Velocity (fps)	d/D
26	25		0		0	0		0	0												
					8,400	8,400		37,800	37,800												
						8,400			37,800	**1310.00**	390	8	0.0051	16.81	1293.86	1291.87	557,665	7%	2.5	1.41	0.18
25	25a		0		0	0		0	0												
					8,400	8,400		37,800	37,800												
		36 to 25			133,170	141,570		593,640	631,440												
						141,570			631,440	**1307.00**	360	12	0.0051	16.23	1291.77	1289.94	1,644,184	38%	3.2	3.03	0.43
25a	EX MH	SDALE RD			0	0		0	0												
					141,570	141,570		631,440	631,440												
		(Drop)				141,570			631,440	**1305.00**	360	12	0.0051	16.16	1289.84	**1288.00**	1,644,184	38%	3.2	3.03	0.43
END SOUTH SIDE ON-SITE/BEGIN NORTH SIDE																					
56	57	B	12	250	3,000	3,000	4.0	12,000	12,000												
						3,000			12,000	**1318.00**	435	8	0.0051	7.04	1311.63	1309.41	557,665	2%	2.5	1.00	0.10
57	58	B	3	250	750	750	4.0	3,000	3,000												
					3,000	3,750		12,000	15,000												
						3,750			15,000	**1314.50**	150	8	0.0051	5.85	1309.31	1308.55	557,665	3%	2.5	1.07	0.11
58	59	B	4	250	1,000	1,000	4.0	4,000	4,000												
					3,750	4,750		15,000	19,000												
						4,750			19,000	**1313.50**	180	8	0.0051	5.72	1308.45	1307.53	557,665	3%	2.5	1.15	0.13
60	59	B	4	250	1,000	1,000	4.0	4,000	4,000												
						1,000			4,000	**1314.50**	195	8	0.0051	6.64	1308.52	1307.53	557,665	1%	2.5	0.72	0.06
59	61	B	3	250	750	750	4.0	3,000	3,000												
					1,000	1,750		4,000	7,000												
		58 to 59			4,750	6,500		19,000	26,000												
						6,500			26,000	**1313.00**	210	8	0.0051	6.24	1307.43	1306.36	557,665	5%	2.5	1.26	0.15
61	62	B	2	250	500	500	4.0	2,000	2,000												
					6,500	7,000		26,000	28,000												
						7,000			28,000	**1313.00**	75	8	0.0051	7.41	1306.26	1305.88	557,665	5%	2.5	1.29	0.15
62	63	B	3	250	750	750	4.0	3,000	3,000												
					7,000	7,750		28,000	31,000												
						7,750			31,000	**1312.50**	90	8	0.0051	7.39	1305.78	1305.32	557,665	6%	2.5	1.33	0.16
63	64	B	5	250	1,250	1,250	4.0	5,000	5,000												
					7,750	9,000		31,000	36,000												
						9,000			36,000	**1311.50**	255	8	0.0051	6.95	1305.22	1303.92	557,665	6%	2.5	1.39	0.17

TABLE A-1
ON-SITE SEWER ANALYSIS
DISCHARGE TO EXISTING INDIAN BEND RD 8" SEWER AND SCOTTSDALE RD 12" SEWER
THE RITZ CARLTON RESORT

Upstream MH	Downstream MH	ID	# of Units	Unit Flow (gpd)	Average Day Flow (gpd)	Cumulative Avg Flow (gpd)	Peaking Factor	Peak Flow (gpd)	Cumulative Peak Flow (gpd)	Estimated Upstream Ground Elevation (feet)	Estimated Length (feet)	Line Diameter (inches)	Sewer Line Slope (ft/ft)	Estimated Upstream MH Depth (feet)	Estimated Upstream Invert Elevation (feet)	Estimated Downstream Invert Elevation (feet)	Sewer Line Capacity (gpd)	% Full (Q/Qf)	Velocity Flowing Full (fps)	Actual Peak Velocity (fps)	d/D
64	65	B	4	250	1,000	1,000	4.0	4,000	4,000												
					9,000	10,000		36,000	40,000												
						10,000			40,000	**1310.00**	150	8	0.0051	6.85	1303.82	1303.05	557,665	7%	2.5	1.44	0.18
65	66	B	3	250	750	750	4.0	3,000	3,000												
					10,000	10,750		40,000	43,000												
						10,750			43,000	**1310.50**	75	8	0.0051	8.22	1302.95	1302.57	557,665	8%	2.5	1.47	0.19
67	68	B	2	250	500	500	4.0	2,000	2,000												
						500			2,000	**1318.50**	210	8	0.0051	10.21	1308.96	1307.89	557,665	0%	2.5	0.19	0.09
68	69	B	1	250	250	250	4.0	1,000	1,000												
					500	750		2,000	3,000												
						750			3,000	**1317.50**	45	8	0.0051	10.38	1307.79	1307.56	557,665	1%	2.5	0.29	0.09
69	70	B	11	250	2,750	2,750	4.0	11,000	11,000												
					750	3,500		3,000	14,000												
						3,500			14,000	**1317.00**	480	8	0.0051	10.21	1307.46	1305.01	557,665	3%	2.5	1.36	0.09
70	71	B	4	250	1,000	1,000	4.0	4,000	4,000												
					3,500	4,500		14,000	18,000												
						4,500			18,000	**1313.50**	135	8	0.0051	9.26	1304.91	1304.22	557,665	3%	2.5	1.75	0.09
71	72	B	4	250	1,000	1,000	4.0	4,000	4,000												
					4,500	5,500		18,000	22,000												
						5,500			22,000	**1312.50**	135	8	0.0051	9.04	1304.12	1303.43	557,665	4%	2.5	2.14	0.09
72	66	B	3	250	750	750	4.0	3,000	3,000												
					5,500	6,250		22,000	25,000												
						6,250			25,000	**1311.50**	150	8	0.0051	8.83	1303.33	1302.57	557,665	4%	2.5	2.44	0.09
66	73	B	4	250	1,000	1,000	4.0	4,000	4,000												
					6,250	7,250		25,000	29,000												
		65 to 66			10,750	18,000		43,000	72,000												
						18,000			72,000	**1310.50**	375	8	0.0051	8.70	1302.47	1300.56	557,665	13%	2.5	7.02	0.09
73	74		0		0	0		0	0												
					18,000	18,000		72,000	72,000												
						18,000			72,000	**1307.00**	60	8	0.0051	7.21	1300.46	**1300.15**	557,665	13%	2.5	7.02	0.09
52	53	E	4.5	1,500	6,750	6,750	3.0	20,250	20,250												
						6,750			20,250	**1309.00**	330	8	0.0051	5.94	1303.73	1302.04	557,665	4%	2.5	1.17	0.13
53	54	E	4.5	1,500	6,750	6,750	3.0	20,250	20,250												
					6,750	13,500		20,250	40,500												
						13,500			40,500	**1308.00**	315	8	0.0051	6.72	1301.94	1300.34	557,665	7%	2.5	3.95	0.09

PRELIMINARY DRAINAGE REPORT

December 7, 2015

Ritz Carlton Resort

Town of Paradise Valley

Prepared for:

Five Star Development
6720 North Scottsdale Road
Suite 130
Scottsdale, AZ 85253

Prepared by:

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Job #:1-01-0268901

Registered Professional Engineer (Civil)
CERTIFICATE NO.
37297
JASON K.
KELLEY
Date Signed .....
ARIZONA, U.S.A.
Expires 3-31-2017

CVL CONSULTANTS

PRELIMINARY DRAINAGE REPORT

FOR

RITZ CARLTON RESORT

TOWN OF PARADISE VALLEY, ARIZONA

December 7, 2015

Prepared for:

Five Star Development

6720 North Scottsdale Road

Suite 130

Scottsdale, AZ 85253

Preliminary Drainage Report

Ritz Carlton

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Exhibit 6A	Mockingbird Lane Inflow Hydrograph
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Plate

Plate 1	Drainage Map

1.0 INTRODUCTION

1.1 SCOPE

Coe & Van Loo Consultants, Inc. (CVL) has been contracted by Five Star Development to provide engineering services in support of the proposed Ritz Carlton Resort (the site). The purpose of this report is to provide hydrologic and hydraulic analysis for the proposed development. In addition, this report addresses off-site drainage, on-site drainage and storm-water storage detention requirements.

This report is focused on providing preliminary design information, evaluation, and analysis for statistical flood events up to and including the 100-year storm. The scope of this assessment does not include, neither did CVL's client request that, evaluation of storm-water runoff resulting from storm events exceeding the 100-year frequency event. Hence, it should be noted that a storm event exceeding the 100-year frequency may cause or create the risk of greater flood impact than is addressed and presented in this assessment.

The procedures used herein are derived from, and performed with, currently accepted engineering methodologies and practices. Additionally, the criteria for this evaluation are designed to conform to currently applicable ordinances, regulations and policies as set forth by the town of Paradise Valley and Maricopa County.

1.2 REGULATORY JURISDICTION

The site is designed to meet the Town of Paradise Valley drainage requirements as stated in the Paradise Valley Drainage Design Policies [1]. In addition, certain aspects of the design are in accordance with the Flood Control District of Maricopa County (FCDMC), Drainage Design Manuals for Maricopa County, Arizona, Volume I, Hydrology [2], and Volume II, Hydraulics [3].

2.0 LOCATION

The site is located within the Town of Paradise Valley, Maricopa County, Arizona. The site is located north of Lincoln Drive, west of Scottsdale Road, south of Indian Bend Road and east of Mockingbird Lane. Furthermore, the site is located in Section 10, Township 2 North, Range 4 East of the Gila and Salt River Meridian (see Figure 1 - Vicinity and Location Map).

3.0 Site Description and Proposed Development

3.1 Site Description

The site is located within the Town of Paradise Valley, Maricopa County, Arizona. The site is located north of Lincoln Drive, west of Scottsdale Road, south of Indian Bend Road and east of Mockingbird Lane. Furthermore, the site is located in Section 10, Township 2 North, Range 4 East of the Gila and Salt River Meridian (see Figure 1 - Vicinity and Location Map).

3.2 Proposed Development

The proposed commercial development will consist of a luxury hotel, commercial areas single residential houses, parking lots, streets and open spaces. The amenities will be constructed in several phases. The development will also include a permanent, aesthetically landscaped drainage corridor to safely intercept, convey and release offsite storm water through the site. Offsite flows determined in the offsite analysis will return to their historical flows paths at the southeast corner of Indian Bend and Scottsdale Road and the northeast corner of Lincoln Dr. and Scottsdale Road (see Section 5.3 for Calculation).

4.0 Flood Zone Information

The Maricopa County, Arizona and Incorporated Areas Flood Insurance Rate Map (FIRM), panel number 04013C1770L, Map Revised October 16, 2013 [1], indicate the site falls within Zone "D" (shaded).

Zone "D" (shaded) is defined by FEMA as:

"Areas in which flood hazards are undetermined, but possible"

Refer to Figure 2 for a copy of the Flood Insurance Rate Map (FIRM).

5.0 MANAGEMENT OF OFF-SITE RUNOFF

5.1 OFF-SITE WATERSHED

The watershed affecting the site is urbanized, comprised mainly of medium to low density residential infrastructure lying between the north side of Camelback Mountain and the south side of Mummy Mountain. There is a relatively small amount of commercial area in the southeast portion of the watershed. The street system, residential pad grading and residential walls intersect the watershed causing re-direction of storm flows, flow-splits and breakouts. Mountain tributaries convey confined flows onto residential streets containing some crossing culverts and drainage ditches. Lincoln Drive bisects the watershed west to east in the saddle between the mountains, catching the faster flows from the higher elevations and draining them east at a flatter slope towards the site. Due to the urbanization of the watershed and corresponding re-direction of flows and flow-splits, CVL modeled the offsite watershed using the XPSWMM 2D Model (XP2D) to determine the magnitude and patterning of offsite flows affecting the site. A comparison of flows from other studies is shown in the table below (see Appendices C and E).

Previous Hydrologic Studies

The following four offsite hydrologic analyses were been prepared for the site.

Author	Date	Methodology	Return Period	Peak Runoff (cfs)
Erie & Associates	11/17/2008	HEC-1	100 year, 6 hr.	1,853
FCDMC	06/16/2015	FLO-2D	100 year, 6 hr.	607
CVL	06/06/2015	HEC-1	100 year, 6 hr.	1,079
CVL	04/02/2015	SCS	100 year, 2 hr.	951
CVL	11/03/2015	XPSWMM	100 year, 6hr	728
CVL	11/03/2015	XPSWMM (NO BLOCKAGE)	100 year, 6hr	764

5.2 XPSWMM 2D DATA INPUT

5.2.1 SURFACE DATA

Two-foot contour interval level-of-accuracy topographic data was obtained from the FCDMC for an area encompassing nearly all the offsite watershed. The two-foot data was supplemented with ground survey in areas requiring increased definition for 2D modeling. Ground survey covered selected areas containing channels, swales and roads, primarily along Lincoln Drive and approaching the west property line of the site. A portion of the top of Camelback Mountain not mapped in the two-foot dataset was supplemented using the available County 10-foot contour data. A composite surface was created giving overlapping priority to the ground survey, and then the two-foot data and then the 10-foot data (see Exhibit 1 – Surface Data). The surface was sampled using a 5-foot grid to create a normalized topographic data set. This dataset was imported into XP2D for creation of the model's digital terrain.

5.2.2 2D MODEL AREA AND GRID SIZE

The study area encompasses the offsite watershed which was defined based on the location the site. Two grid sizes were used in the model, a 25'x25' grid and a higher resolution 8'x8' grid used for areas close to the site including Mockingbird Lane, Lincoln Drive, offsite ponding areas and adjacent offsite channels near the west boundary of the site and along the north side of Lincoln Drive (see Exhibit 2 – XPSWMM Model Boundary and Grid Size).

5.2.3 RAINFALL

The offsite watershed is 1.8 square miles in size and review of the rainfall isopluvial map indicates that the isopluvial lines run roughly parallel to the offsite watershed, therefore spatial variation in rainfall was assumed to be negligible (see 100-yr, 6-hr isopluvial map in Appendix A). Based on NOAA Atlas 14 Data, the 100-yr, 6-hr, the point precipitation of 2.63 inches was used (see Appendix A).

Based on Figure 2.5 of the Maricopa County Drainage Manual, for a drainage area of 1.8 square miles, the rainfall pattern is 1.7. Rainfall distribution was interpolated between patterns 1 and 2 using linear interpolation as described in the Maricopa County Drainage Manual.

5.2.4 Cross Sections

Two cross sections were used to extract flow data from the 2D model grid system. Both cross sections fall immediately on the edge of the site and produce the offsite hydrographs affecting the site from the west and the south. Refer to Exhibit 3 for cross sections locations.

5.2.5 Soil Data

Based on Soil Survey data obtained from Natural Resources Conservation Services (NRCS), the majority of the soils in the watershed are Loam. Conservatively, CVL applied the Loam soil parameters for the entire offsite area (refer to Exhibit 4). The Green and Ampt Method was used for infiltration with the following soil parameters:

1. Porosity: 0.434 based on average value determined by the SCS.
2. Initial Moisture (DTHETA) = 0.25 for Normal and 0.35 for Dry (per FCDMC Drainage Design Manual Hydrology, Table 4.1 – Reference 2)
3. Suction (PSIF) = 3.5 in (88.9 mm) (per FCDMC Reference 2)
4. Hydraulic Conductivity (XKSAT) = 0.25 in/hr (6.35 mm) (per FCDMC Reference 2)
5. Maximum Ponding Depth = 0.1 in

5.2.6 Land Character Data

CVL obtained the attributed GIS Land Characterization file used for the Lower Indian Bend Wash ADMP (LIBW ADMS, Reference 5) from FCDMC. This Land Characterization data contained the parameter initial saturation. Therefore, two soil types were applied to the model: (i) Loam Normal and (ii) Loam Dry (the difference being DTHETA) (refer to Section 3.5 above and Exhibit 5 for Land Characterization). The land character parameters used in the model are shown in Table 1.

Land use	n value	Initial Loss	Continuing Loss	Soil Type	Percentage Impervious
Asphalt	0.02	0.05	0	Loam Dry	95
Buildings	20	0.05	0	Loam Normal	95
Concrete	0.016	0.05	0	Loam Normal	98
Mountain Bare Ground	0.05	0.25	0	Loam Dry	0
Shade Structures	0.035	0.05	0	Loam Normal	98
Unpaved roads	0.026	0.1	0	Loam Dry	50
Urban Bare Ground	0.035	0.2	0	Loam Dry	0
Urban High Vegetation	0.065	0.1	0	Loam Normal	0
Urban Low Vegetation	0.045	0.1	0	Loam Normal	0

Table 1 – Land Characterization Parameters

Notes:

1. n value of 20 was assigned to Buildings so no flow will pass through the buildings.

2. The 25-ft grid onsite area is added to the model so the downstream head condition does not affect the measured flow at the west or south boundary or the site.

3. For this area (onsite), Urban Bare Ground land character and Loam Dry soil type were used.

5.2.7 CULVERT

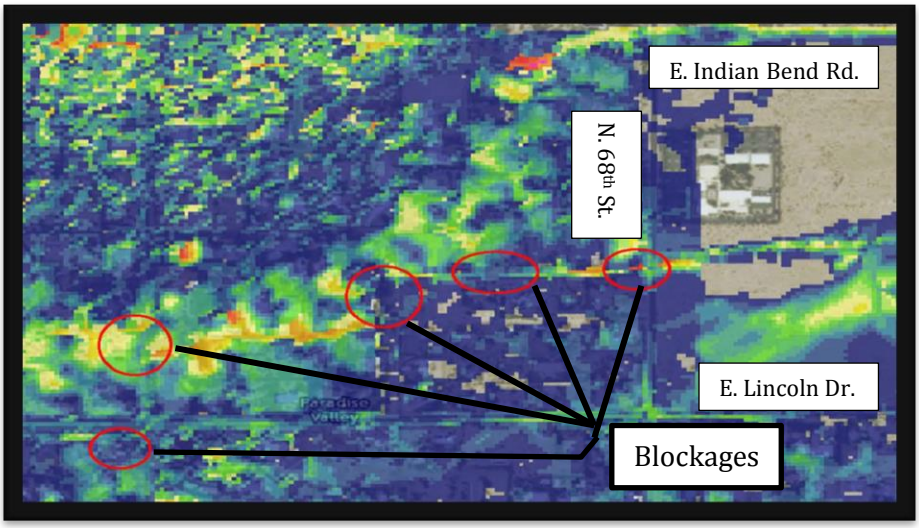
One 60-foot wide by 4-foot high box culvert was added to the model to depict the Mockingbird Lane Culvert at the western boundary of the site (see Exhibits 5 and 8).

5.2.8 BOUNDARY CONDITIONS

A Constant Head Boundary elevation of 1300 feet, which is below the existing ground, was incorporated at the model boundary at the site. This condition allows the existing flows to runoff from the model boundary.

5.2.9 MODIFIED MODEL CONDITIONS

Per Town request, a 2D model run was created by removing several existing blockages and constrictions to overland flow west of Mockingbird Lane. This scenario anticipates future improvements to the existing channel by the Town. The modifications were implemented by lowering and smoothing grid elevations in the model. Additionally, the existing culvert at Mockingbird Lane was removed to allow free flow approach the Ritz Carlton site.



5.3 XPSWMM 2D RESULTS

Refer to Exhibits 3, 6A, 6B, 7A, 7B and 8 for locations and hydrograph results. For reference, Maximum Water Depths (flow patterning) are shown in Exhibits 9 and 10.

5.3.1 EXISTING CONDITIONS

The Peak offsite flows affecting the site are as follows:

Mockingbird Lane (west boundary) - 728 cfs

Lincoln Drive (south boundary) - 124 cfs

Mockingbird Lane Box Culvert - 466 cfs

5.3.2 EXISTING CONDITIONS NO BLOCKAGE

The Peak offsite flows without blockages affecting the site are as follows:

Mockingbird Lane (west boundary) - 764 cfs

Lincoln Drive (south boundary) - 121 cfs

Mockingbird Lane Box Culvert - removed

5.3.3 XPSWMM LIBW COMPARISON

The XPSWMM model results exceed the LIBW ADMS FLO2D results (compare Appendix C with Exhibit 3).

	RITZ CARLTON XPSWMM	LIBW ADMS
Mockingbird Lane	728 cfs / 764 cfs	607 cfs
Lincoln Drive	124 cfs / 121 cfs	93 cfs

The XPSWMM model assumes Loam soil infiltration and a continuing infiltration loss of zero for the whole offsite area. These assumptions are conservative relative to the transmission losses calculated in the LIBW FLO-2D model and may have caused the higher peak discharges.

6.0 MANAGEMENT OF ON-SITE RUNOFF

6.1 ON-SITE HYDROLOGY

The on-site hydrology is based on the Rational Method in accordance with the *Flood Control District of Maricopa County Drainage Design Manual, Volume I, Hydrology* [2] as recommended by the Town of Paradise Valley [1]. The drainage sub-basins were delineated based on the final grading plan prepared by CVL. Times of concentration and the 10-year and 100-year intensities are based on *Maricopa County Drainage Policies and Standards* [5]. The runoff coefficient is based on Table 3.2 of the *Flood Control District of Maricopa County Drainage Design Manual, Volume I, Hydrology* [2]. See Plate 1 for the drainage map.

6.2 ON-SITE RUNOFF MANAGEMENT PLAN

Onsite drainage is designed to retain on-site runoff from the 100-year, 2-hour storm, as required by the Town of Paradise Valley and Flood Control District of Maricopa County [1] [2] [3]. The onsite runoff will be directed into the channel which will have retention at the bottom and still allow offsite flows to pass through the site. These channel basins will be spaced incrementally along the channel bottom below the required design invert for handling offsite flows. The channel HEC-RAS model will incorporate cross-sections at the upstream/downstream toe and top of berms defining the basins to insure a broad-crested weir dynamic is evaluated and the freeboard requirements are met. Debris or sediment accumulated in the basins after storm events will be removed by maintenance to insure required retention volumes are preserved. The areas of the site that are not feasible for the runoff to be directed to the channel are to be directed into underground or surface retention basins that will be designed for the 100 year, 2-hour storm. A preliminary calculation for the required retention was conducted based on the development type for each part of the site. Retention calculations and volumes for each retention area are shown in the Table included in Appendix D. Retention basin locations and subbasin areas are shown in Plate 1. Results show that the retention required is 16.76 acre-ft. and the retention provided to be 20.71 acre-ft. This shows that the retention required is feasible based on available open space areas.

6.2 CHANNEL

6.2.1 PROPOSED CHANNEL

The proposed channel was evaluated to determine the required cross-section, slope and roughness that would be required to pass 764 cfs (see section 5.3) while maintaining a flow velocity of six feet per second or less and provide one-foot of freeboard. The results provide a guideline for a nearly maximum channel section and will allow for future, less conservative, channel alternative options depending on the finalized onsite and offsite drainage evaluations. Results are located in Appendix D.

6.2.2 90 DEGREE CHANNEL BENDS

Hydraulic evaluation at the 90-degree channel bends will be required to obtain agency approval. Standard guidelines from the FCDMC, Drainage Design Manual, Hydraulics, includes:

6.5.5 Channel Curvature

The minimum radius of a curved channel, measured to the channel centerline, carrying subcritical flows is recommended to be three times greater than the width of the water surface. That is:

$$r_c \geq 3T \tag{6.26}$$

If the channel is carrying supercritical flows, the recommended minimum radius is:

$$r_c = \frac{4V^2T}{gy} \tag{6.27}$$

6.5.6 Superelevation

Curves in a channel cause the maximum flow velocity to shift toward the outside of the bend. Along the outside of the curve, the depth of flow is at a maximum. The consequent rise in the water surface is referred to as superelevation. Under subcritical conditions, the following equation is recommended to estimate the magnitude of the superelevation:

$$y = \frac{0.5V^2T}{gr_c} \tag{6.28}$$

Readers are cautioned to avoid curves in channels with supercritical flows. The shift in the velocity distribution may cause cross-waves to form, which will persist downstream and could severely limit the hydraulic capacity of the channel. Advanced design criteria or physical model studies beyond the scope of this chapter may be required.

Generally, the bends will create turbulence leading off from the inside of the bend and high velocities on the outside of the bend. These conditions will create freeboard and scour issues which will be mitigated through the design of gabions, scour protection and energy dissipation.

Another method which could be used with reasonable success would be to provide aesthetic drop structures three to four feet high immediately upstream of each bend to create controlled turbulence, energy dissipation and water surface profile draw-down within the vicinity of the 90-degree bends.

7.0 Storm Water Pollution Prevention Plan

During final engineering design, the Storm Water Pollution Prevention Plan (SWPPP) will be prepared and submitted for approval.

8.0 Summary and Conclusions

1. The proposed residential and commercial development consists of a luxury hotel, single family residential homes, restaurants, parking lots and open spaces.
2. The Maricopa County, Arizona and Incorporated Areas Flood Insurance Rate Map (FIRM) panel numbers 04013C1770L revised October 16, 2013, indicate that the proposed development falls within a Zone "D".
3. Due to the several flow splits and breakouts in the offsite area, CVL modeled the offsite flow using XPSWMM 2-dimensional model (XP2D) to accurately quantify and depict the offsite flows.
4. The 100-year, 6-hour offsite flow affecting the site at the west boundary is 728 cfs or 764 cfs, at the south Boundary is 124 cfs or 121 cfs, and through the Mockingbird Lane Culvert is 466 cfs.
5. Onsite channelization will be required to safely convey the 728/764 cfs from the existing box culvert at Mockingbird Lane through the site to Indian Bend and Scottsdale Roads.

6. An improved drainage ditch will be required along the north side of Lincoln Drive to safely convey 124/121 cfs along the south property line to existing, large catchbasins and stormdrain at Lincoln and Scottsdale Road.
7. Retention for the 100 year 2 hour storm will be provided within the channel and in underground retention basins.

9.0 REFERENCES

[1] Town of Paradise Valley, "Storm Water Policies and Standards Manual," March, 1987.

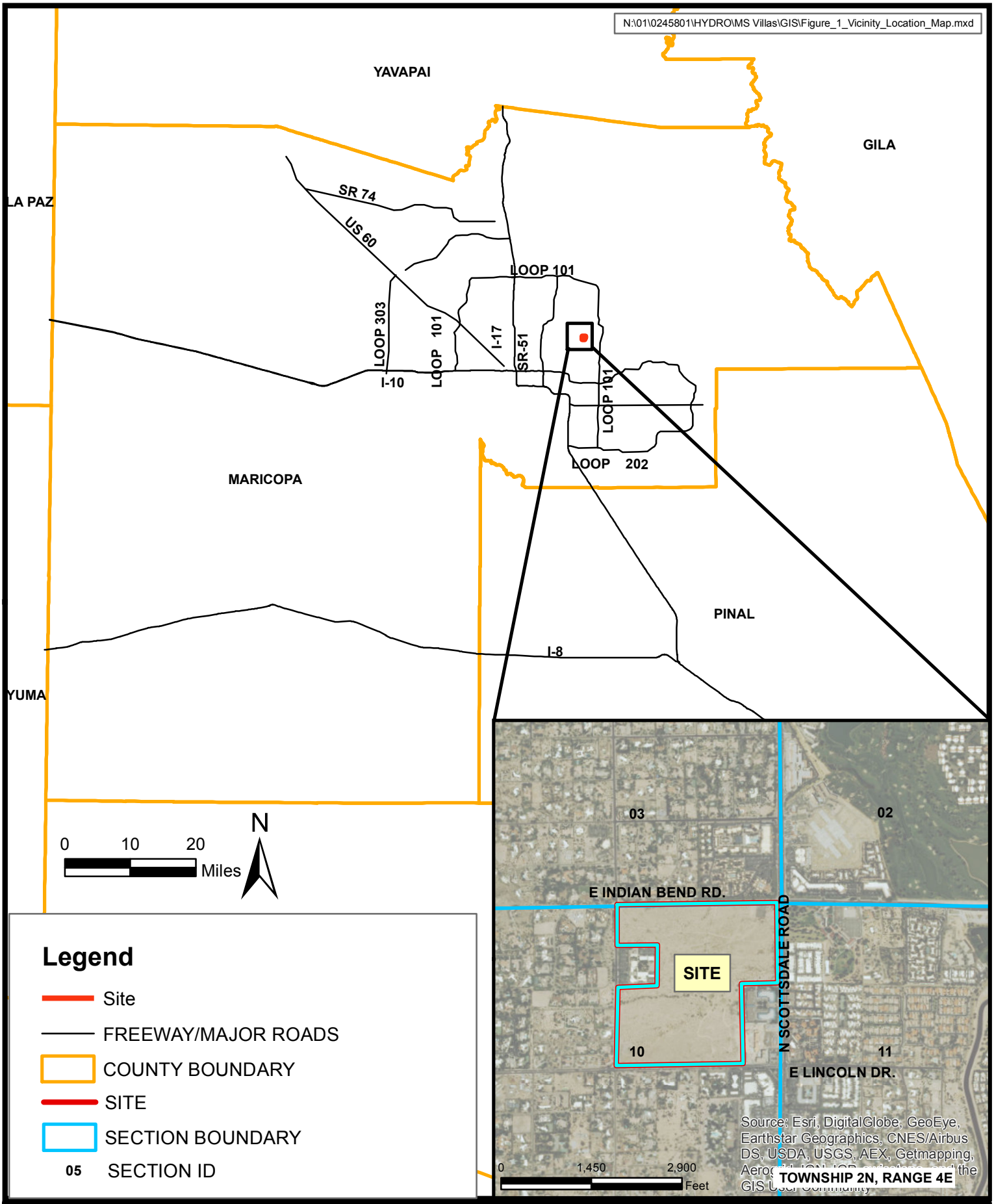
[2] Flood Control District of Maricopa County, "Drainage Design Manual for Maricopa County, Arizona, Volume I, Hydrology," Revised August 2013.

[3] Flood Control District of Maricopa County, Arizona, "Draft Drainage Design Manual for Maricopa County, Volume II, Hydraulics," Revised August 2013.

[4] Federal Emergency Management Agency (FEMA), "National Flood Insurance Program, Flood Insurance Rate Map, Maricopa County, Arizona and Incorporated Areas, Panel Numbers 04013C1770L," Revised October 16, 2013.

[5] Flood Control District of Maricopa County,Land Characterization File (attributed shapefile), "Lower Indian Bend Wash Area Drainage Master Study," 2015.

FIGURES



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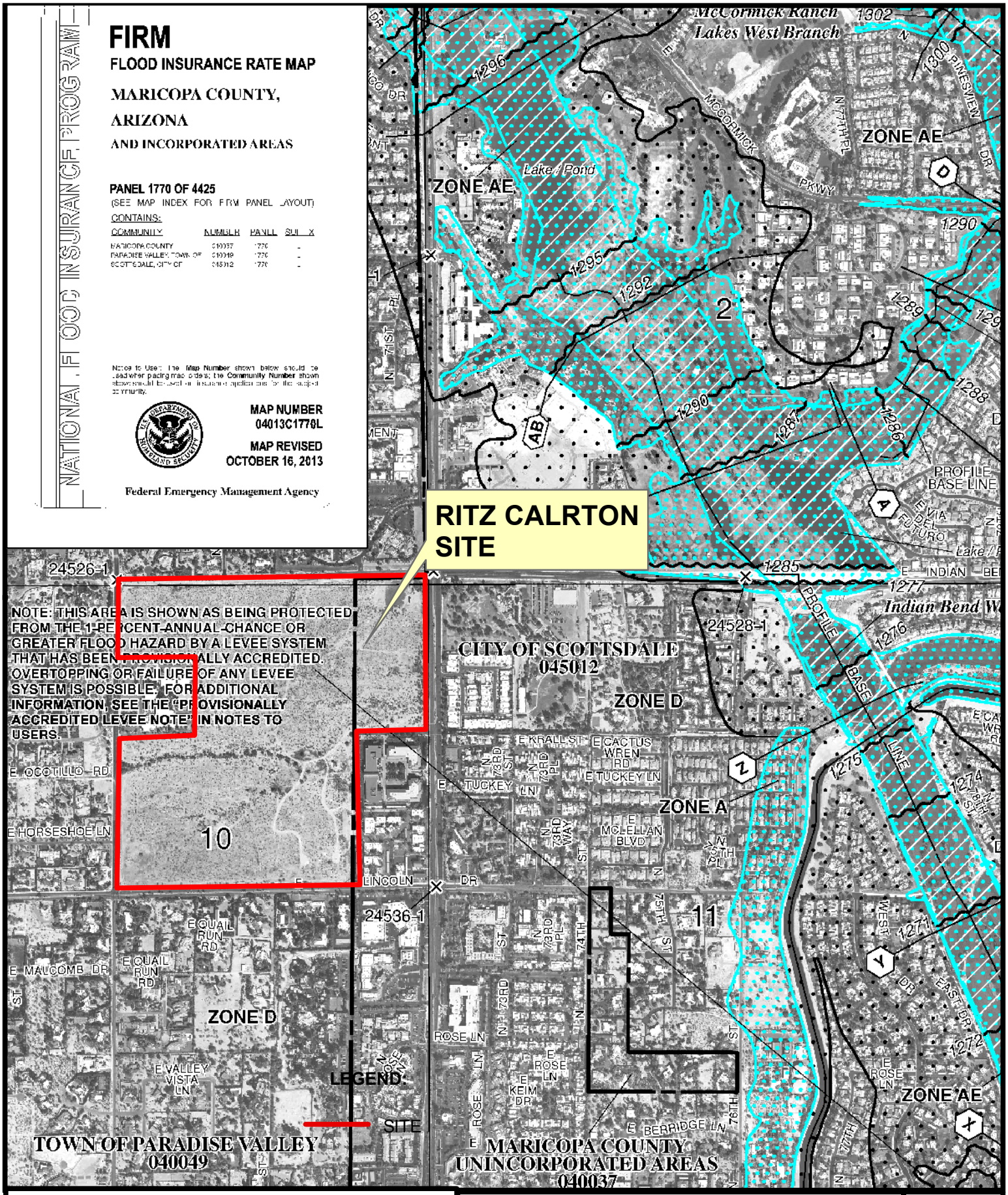
RITZ CARLTON RESORT

JOB NO.
01-0268901

VICINITY & LOCATION MAP

FIGURE 1

08/20/2015



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RITZ CARLTON RESORT

JOB NO.
01-0268901

FLOOD INSURANCE RATE MAP

FIGURE 2

APPENDICES

APPENDIX A

Rainfall Data

NOAA Atlas 14, Volume 1, Version 5
Location name: Paradise Valley, Arizona, US*
Latitude: 33.5313°, Longitude: -111.9502°
Elevation: 1358 ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.188 (0.157-0.230)	0.246 (0.207-0.300)	0.333 (0.278-0.405)	0.401 (0.332-0.485)	0.491 (0.400-0.593)	0.561 (0.451-0.673)	0.632 (0.499-0.756)	0.704 (0.547-0.842)	0.802 (0.606-0.959)	0.875 (0.649-1.05)
10-min	0.286 (0.239-0.349)	0.374 (0.314-0.457)	0.507 (0.423-0.617)	0.610 (0.505-0.739)	0.748 (0.610-0.902)	0.854 (0.687-1.02)	0.962 (0.760-1.15)	1.07 (0.833-1.28)	1.22 (0.923-1.46)	1.33 (0.988-1.60)
15-min	0.355 (0.297-0.433)	0.464 (0.390-0.566)	0.629 (0.524-0.766)	0.756 (0.626-0.916)	0.927 (0.756-1.12)	1.06 (0.852-1.27)	1.19 (0.943-1.43)	1.33 (1.03-1.59)	1.51 (1.15-1.81)	1.65 (1.23-1.98)
30-min	0.478 (0.399-0.583)	0.625 (0.525-0.763)	0.847 (0.706-1.03)	1.02 (0.843-1.23)	1.25 (1.02-1.51)	1.43 (1.15-1.71)	1.61 (1.27-1.92)	1.79 (1.39-2.14)	2.04 (1.54-2.44)	2.22 (1.65-2.67)
60-min	0.591 (0.494-0.722)	0.773 (0.650-0.944)	1.05 (0.874-1.28)	1.26 (1.04-1.53)	1.55 (1.26-1.86)	1.77 (1.42-2.12)	1.99 (1.57-2.38)	2.22 (1.72-2.65)	2.52 (1.91-3.02)	2.75 (2.04-3.30)
2-hr	0.684 (0.581-0.818)	0.886 (0.753-1.06)	1.19 (1.00-1.41)	1.41 (1.18-1.68)	1.72 (1.43-2.04)	1.96 (1.60-2.32)	2.21 (1.77-2.60)	2.45 (1.94-2.89)	2.79 (2.15-3.29)	3.05 (2.30-3.61)
3-hr	0.751 (0.634-0.909)	0.963 (0.818-1.17)	1.26 (1.07-1.53)	1.50 (1.26-1.80)	1.83 (1.51-2.19)	2.10 (1.71-2.50)	2.37 (1.90-2.82)	2.66 (2.09-3.16)	3.06 (2.33-3.63)	3.38 (2.51-4.02)
6-hr	0.904 (0.780-1.07)	1.14 (0.990-1.35)	1.47 (1.26-1.73)	1.72 (1.47-2.02)	2.07 (1.74-2.42)	2.34 (1.94-2.72)	2.63 (2.14-3.05)	2.92 (2.34-3.40)	3.31 (2.59-3.86)	3.62 (2.76-4.23)
12-hr	1.01 (0.884-1.18)	1.28 (1.11-1.50)	1.62 (1.40-1.89)	1.89 (1.63-2.19)	2.25 (1.91-2.60)	2.53 (2.13-2.91)	2.81 (2.33-3.24)	3.10 (2.54-3.58)	3.49 (2.78-4.04)	3.79 (2.97-4.42)
24-hr	1.21 (1.06-1.40)	1.54 (1.35-1.79)	1.99 (1.74-2.31)	2.35 (2.05-2.73)	2.85 (2.47-3.31)	3.25 (2.79-3.75)	3.66 (3.12-4.23)	4.09 (3.46-4.73)	4.68 (3.91-5.41)	5.14 (4.26-5.97)
2-day	1.31 (1.15-1.51)	1.68 (1.47-1.93)	2.20 (1.93-2.53)	2.62 (2.29-3.02)	3.21 (2.78-3.69)	3.68 (3.17-4.23)	4.18 (3.57-4.80)	4.69 (3.99-5.40)	5.42 (4.55-6.24)	6.00 (4.98-6.93)
3-day	1.39 (1.22-1.60)	1.78 (1.56-2.05)	2.35 (2.05-2.70)	2.81 (2.45-3.23)	3.45 (2.99-3.97)	3.97 (3.42-4.56)	4.52 (3.87-5.19)	5.11 (4.33-5.87)	5.92 (4.96-6.81)	6.59 (5.46-7.59)
4-day	1.48 (1.29-1.70)	1.89 (1.66-2.18)	2.50 (2.18-2.87)	3.00 (2.61-3.44)	3.70 (3.20-4.24)	4.26 (3.67-4.89)	4.87 (4.16-5.58)	5.52 (4.67-6.33)	6.43 (5.37-7.37)	7.17 (5.93-8.24)
7-day	1.66 (1.45-1.92)	2.13 (1.86-2.46)	2.82 (2.46-3.25)	3.38 (2.93-3.90)	4.18 (3.60-4.81)	4.83 (4.13-5.54)	5.51 (4.69-6.33)	6.24 (5.26-7.19)	7.28 (6.06-8.37)	8.11 (6.68-9.35)
10-day	1.79 (1.57-2.07)	2.30 (2.01-2.65)	3.05 (2.65-3.49)	3.64 (3.16-4.18)	4.49 (3.87-5.13)	5.16 (4.43-5.89)	5.88 (5.02-6.72)	6.64 (5.62-7.59)	7.71 (6.44-8.81)	8.57 (7.09-9.80)
20-day	2.22 (1.95-2.53)	2.86 (2.51-3.26)	3.78 (3.32-4.31)	4.48 (3.92-5.10)	5.43 (4.72-6.17)	6.15 (5.34-7.00)	6.90 (5.95-7.85)	7.65 (6.57-8.73)	8.67 (7.38-9.91)	9.47 (7.99-10.8)
30-day	2.60 (2.27-2.97)	3.35 (2.93-3.82)	4.42 (3.87-5.03)	5.24 (4.57-5.96)	6.34 (5.50-7.21)	7.19 (6.22-8.16)	8.06 (6.94-9.15)	8.95 (7.67-10.1)	10.2 (8.63-11.5)	11.1 (9.35-12.6)
45-day	2.99 (2.64-3.41)	3.87 (3.40-4.39)	5.10 (4.49-5.79)	6.02 (5.29-6.84)	7.24 (6.33-8.21)	8.16 (7.11-9.26)	9.09 (7.88-10.3)	10.0 (8.66-11.4)	11.3 (9.66-12.9)	12.2 (10.4-14.0)
60-day	3.30 (2.92-3.74)	4.27 (3.78-4.83)	5.63 (4.97-6.36)	6.62 (5.83-7.48)	7.91 (6.95-8.93)	8.87 (7.76-10.0)	9.84 (8.57-11.1)	10.8 (9.36-12.2)	12.0 (10.4-13.7)	13.0 (11.1-14.8)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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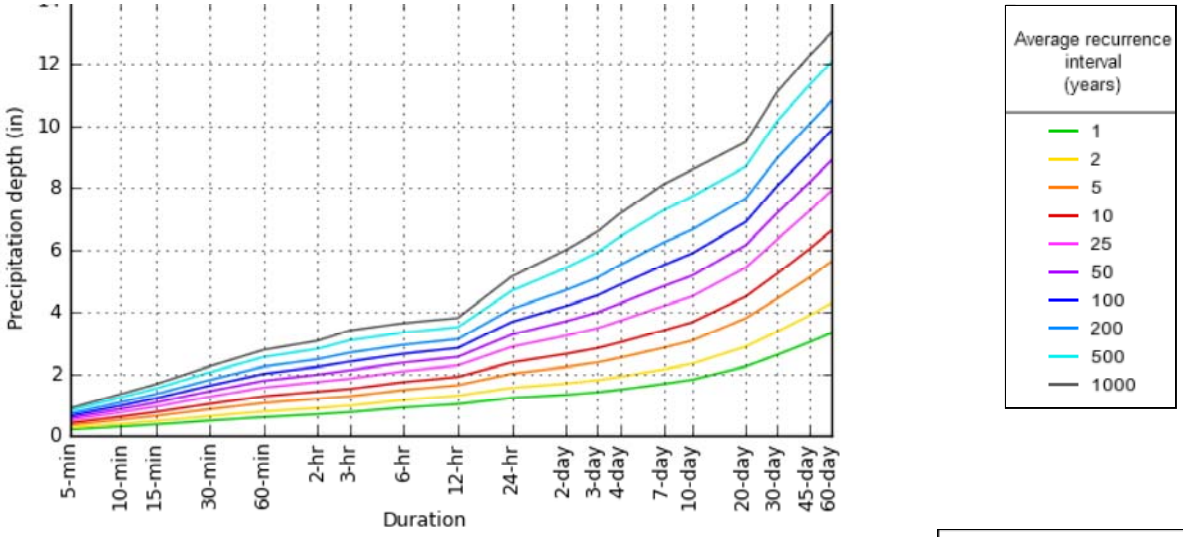
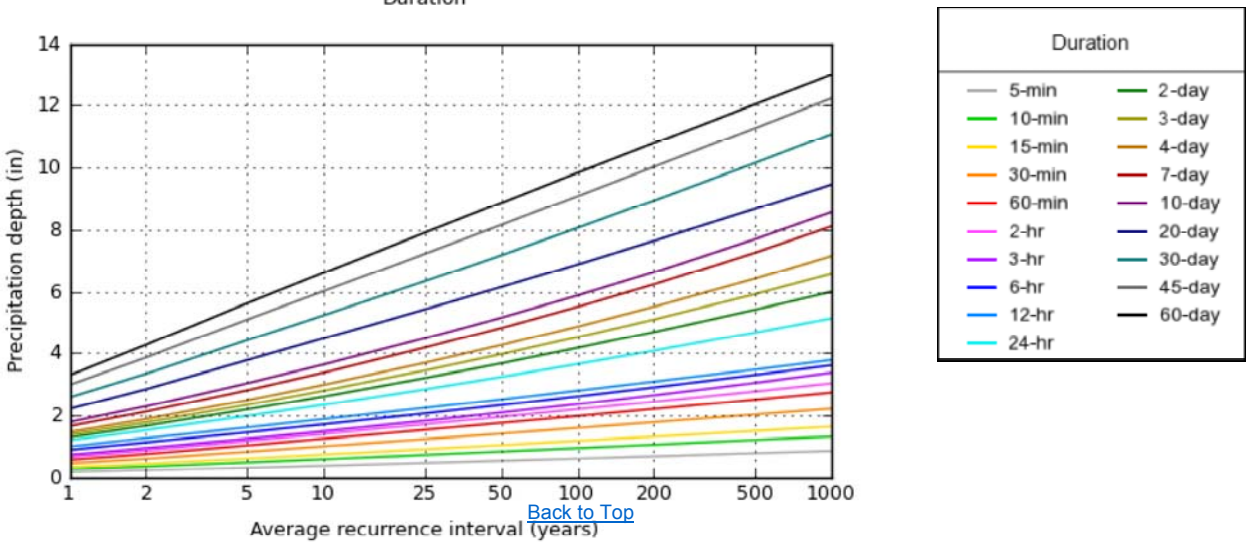
PF graphical





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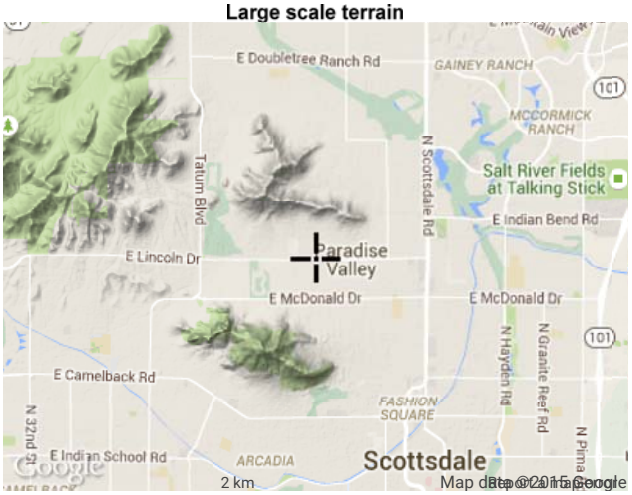
Maps & aerials

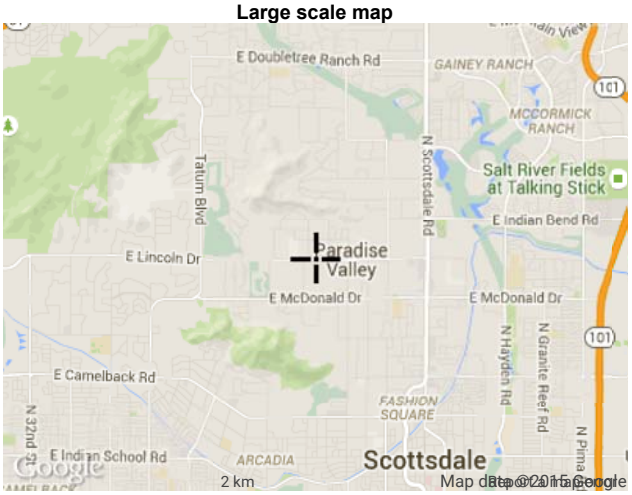
NOAA Atlas 14, Volume 1, Version 5 Created (GMT): Sun Aug 30 03:31:55 2015

Small scale terrain

Large scale terrain



Large scale map



Large scale aerial

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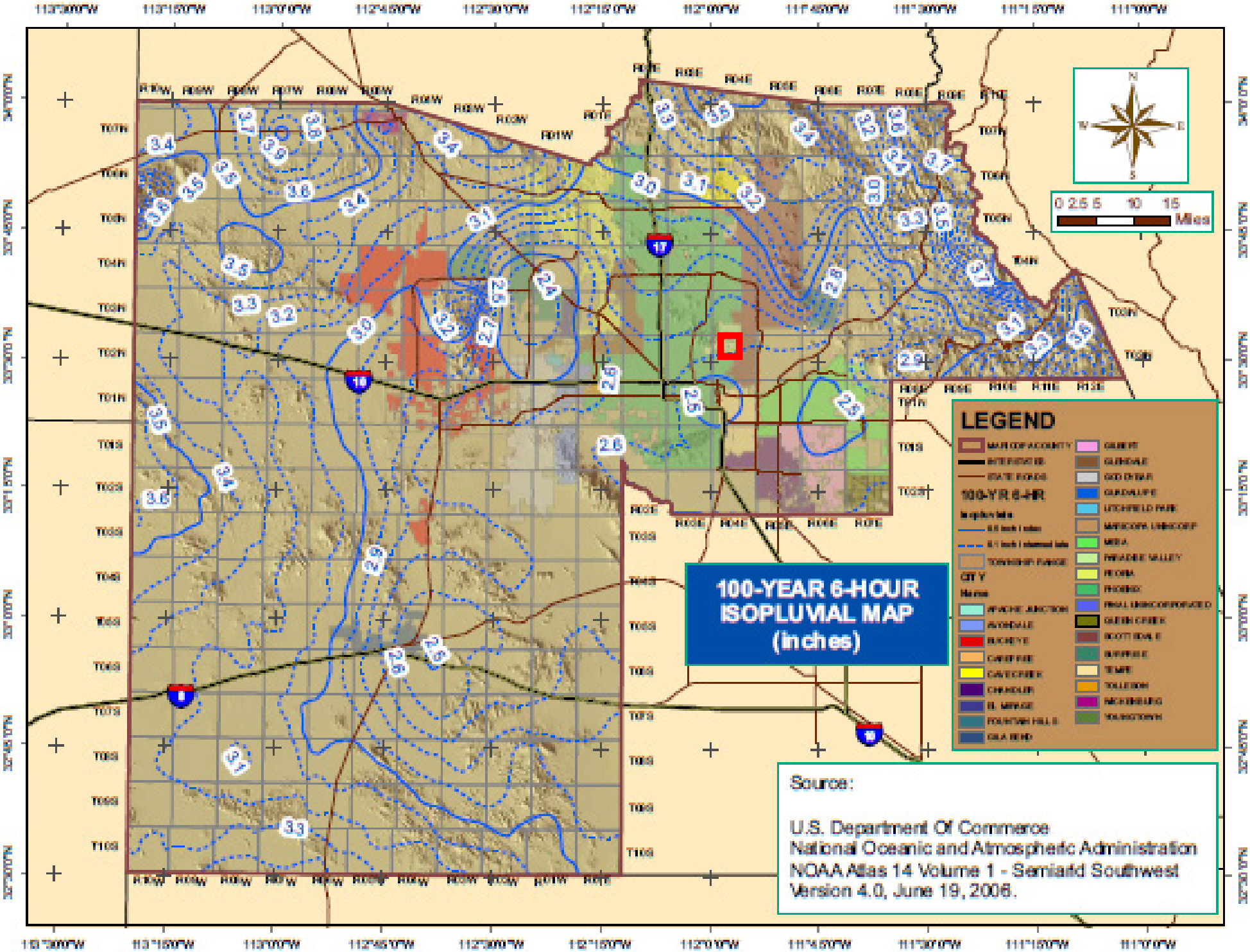
US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Office of Hydrologic Development
1325 East West Highway
Silver Spring, MD 20910


100-YEAR 6-HOUR
ISOPLUVIAL MAP
(inches)
LEGEND
100-YR 6-HR
CITY
0 2.5 5 10 15
Miles
Source:
U.S. Department Of Commerce
National Oceanic and Atmospheric Administration
NOAA Atlas 14 Volume 1 - Semiarid Southwest
Version 4.0, June 19, 2006.

APPENDIX B

Soils Data

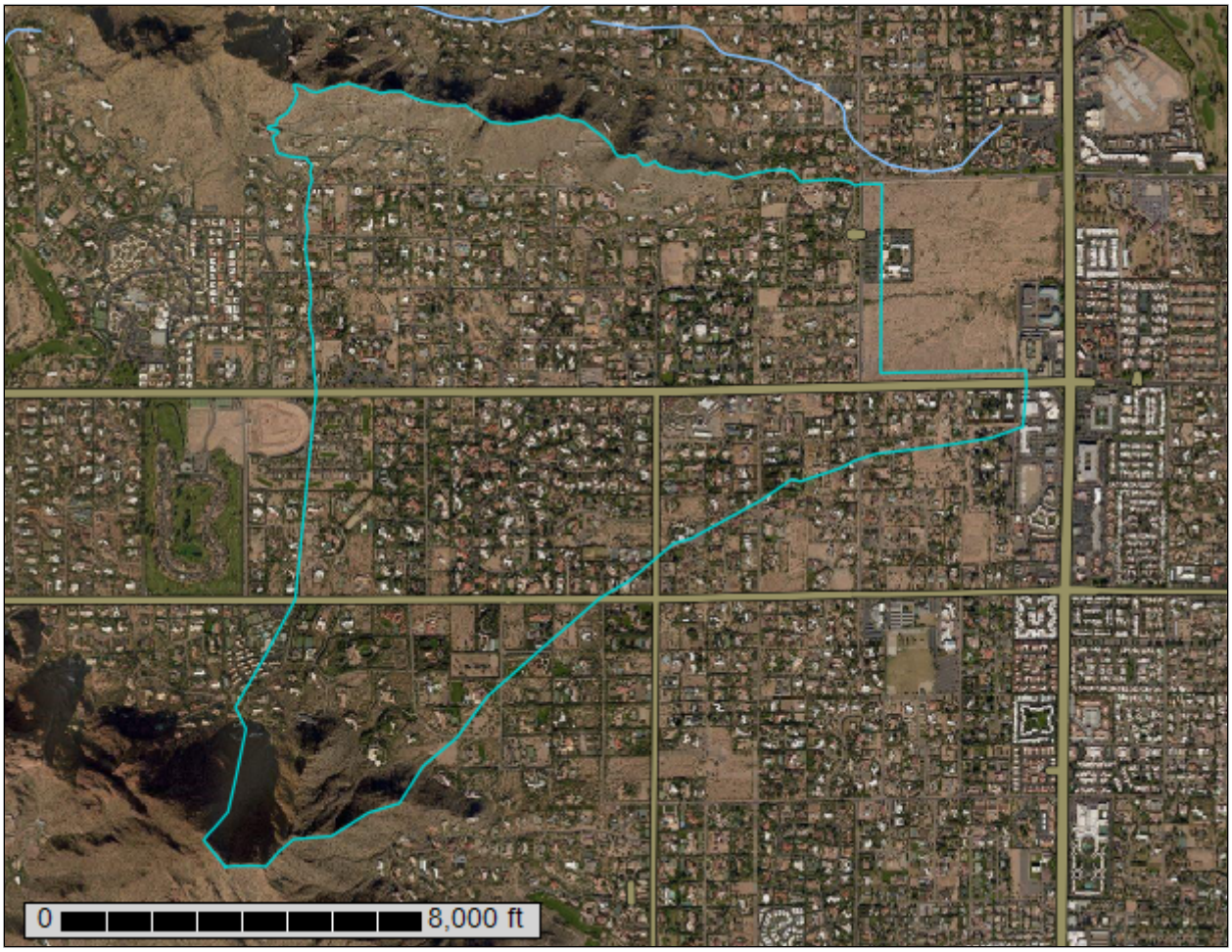
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Eastern Maricopa and Northern Pinal Counties Area, Arizona



September 12, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

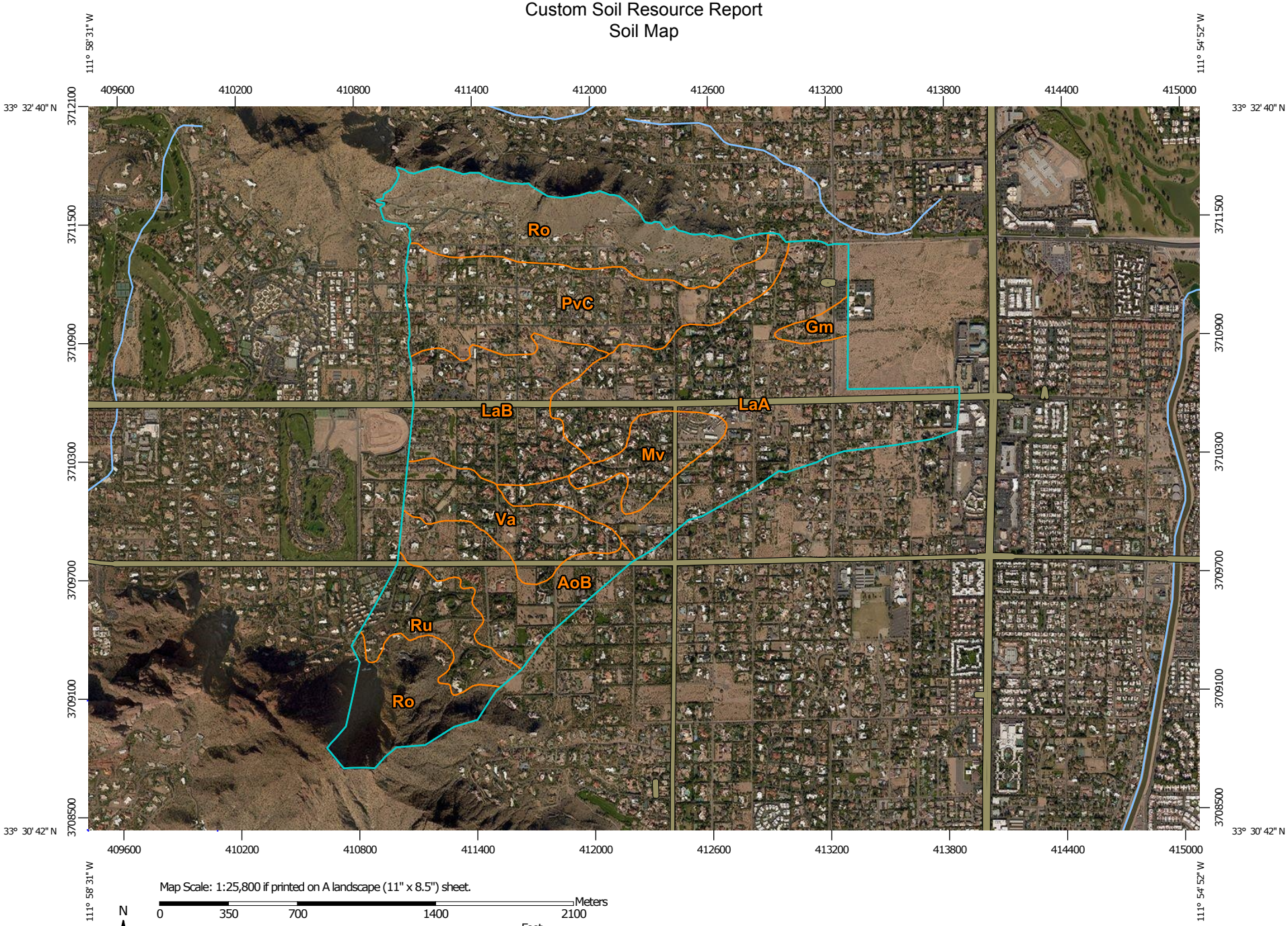
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eastern Maricopa and Northern Pinal Counties Area, Arizona
Survey Area Data: Version 7, Sep 14, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 31, 2014—Dec 7, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Eastern Maricopa and Northern Pinal Counties Area, Arizona (AZ655)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AoB	Antho gravelly sandy loam, 1 to 3 percent slopes	91.9	7.9%
Gm	Gilman loam	11.3	1.0%
LaA	Laveen loam, 0 to 1 percent slopes	335.3	28.9%
LaB	Laveen loam, 1 to 3 percent slopes	129.7	11.2%
Mv	Mohall loam MLRA 40	47.4	4.1%
PvC	Pinamt very gravelly loam, 3 to 5 percent slopes	173.3	14.9%
Ro	Rock land	236.0	20.3%
Ru	Rough broken land	61.4	5.3%
Va	Valencia sandy loam	74.2	6.4%
Totals for Area of Interest		**1,160.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with

some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Eastern Maricopa and Northern Pinal Counties Area, Arizona

AoB—Antho gravelly sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1snr
Elevation: 1,100 to 1,700 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Antho and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Antho

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 17 inches: gravelly sandy loam
C - 17 to 46 inches: gravelly sandy loam
2Btkb - 46 to 60 inches: gravelly loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A

Gm—Gilman loam

Map Unit Setting

National map unit symbol: 1sp1
Elevation: 1,080 to 1,600 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Gilman and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilman

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

Ap - 0 to 13 inches: loam
C - 13 to 60 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B

LaA—Laveen loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1sp4
Elevation: 1,100 to 1,700 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Laveen and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Laveen

Setting

Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

Ap - 0 to 14 inches: loam
Bk - 14 to 60 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B

LaB—Laveen loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1sp5
Elevation: 1,100 to 1,700 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Laveen and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Laveen

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

Ap - 0 to 14 inches: loam
Bk - 14 to 60 inches: loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B

Mv—Mohall loam MLRA 40

Map Unit Setting

National map unit symbol: 2rfkt
Elevation: 1,000 to 1,990 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 68 to 74 degrees F
Frost-free period: 240 to 325 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mohall and similar soils: 80 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mohall

Setting

Landform: Fan terraces, basin floors, stream terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread, flat
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

Ap - 0 to 16 inches: loam
Bt - 16 to 24 inches: clay loam
Btk1 - 24 to 37 inches: clay loam
Btk2 - 37 to 43 inches: clay loam
Bk - 43 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C

Ecological site: Loamy Upland 7-10" p.z. (R040XB213AZ)

PvC—Pinamt very gravelly loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1spg
Elevation: 1,100 to 1,800 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Pinamt and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pinamt

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

A - 0 to 3 inches: very gravelly loam
Bt - 3 to 17 inches: very gravelly sandy clay loam
Bk - 17 to 60 inches: very gravelly loam

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C

Ro—Rock land

Map Unit Composition

Rock land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Ru—Rough broken land

Map Unit Composition

Rough broken land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Va—Valencia sandy loam

Map Unit Setting

National map unit symbol: 1spp
Elevation: 1,100 to 1,700 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Valencia and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Valencia

Setting

Landform: Alluvial fans, plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

Ap - 0 to 13 inches: sandy loam
C - 13 to 26 inches: sandy loam
2Btkb - 26 to 45 inches: sandy clay loam
2Bk - 45 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C

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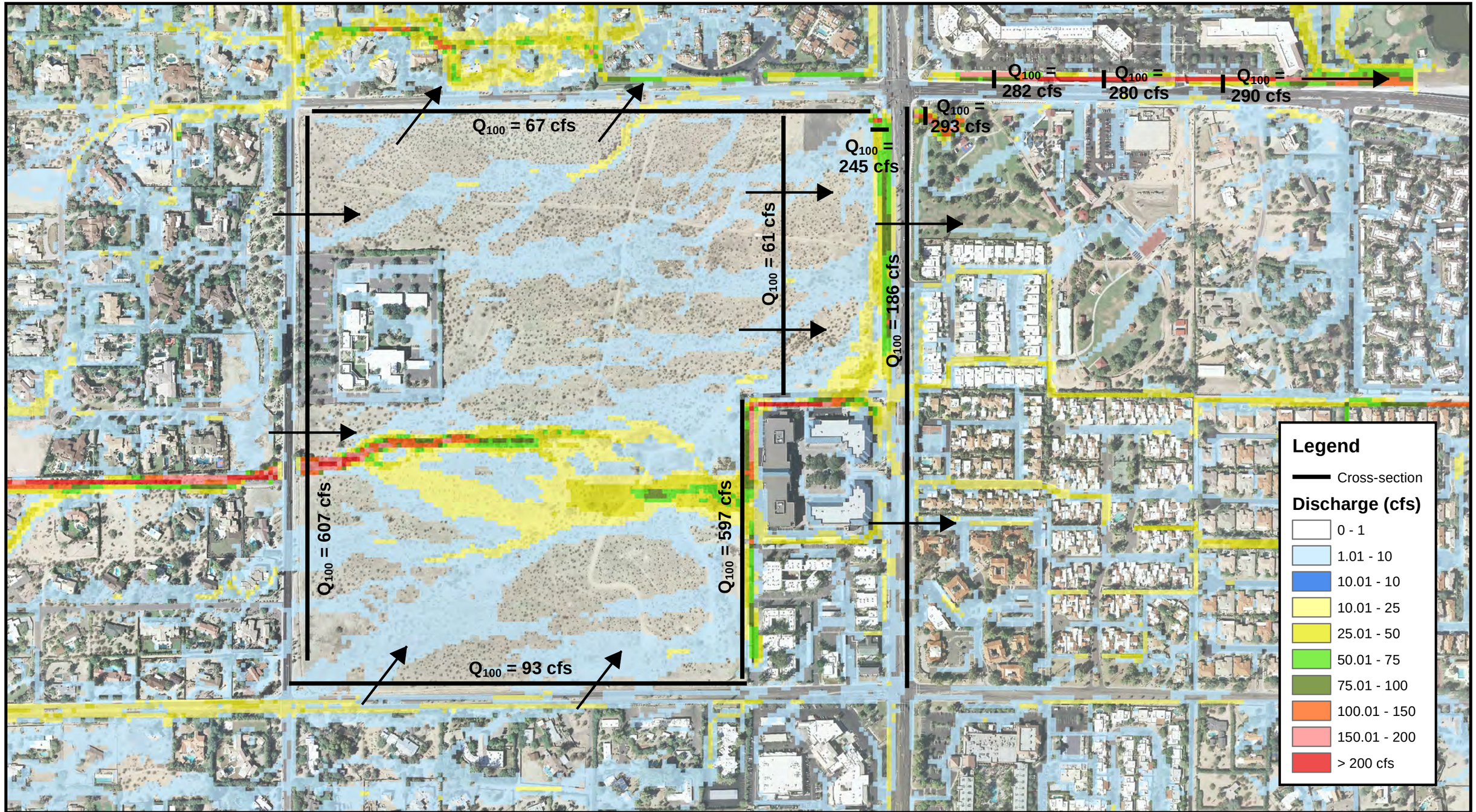
APPENDIX C

Excerpt - Lower Indian Bend

Wash ADMS FLO2D Flows



Flood Control District of Maricopa County

RITZ-CARLTON PROPERTY

CROSS-SECTION FLOWS

0 200 400 800 Feet

T·Y·LIN INTERNATIONAL
engineers| planners| scientists

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APPENDIX D

Existing Culvert Capacity, Proposed Channel Capacity, Estimated Retention Volume and Basin Location

Culvert Designer/Analyzer Report
Mockingbird Ln. Culvert

Comments: Assumes 6" of roadway overtopping during the 100-yr storm.

Analysis Component			
Storm Event	Design	Discharge	1,750.00 cfs

Peak Discharge Method: User-Specified			
Design Discharge	1,750.00 cfs	Check Discharge	0.00 cfs

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
Culvert-1	5-12 x 4 ft Box	1,592.76 cfs	1,322.50 ft	12.18 ft/s
Weir	Roadway (Constant Elevation)	157.71 cfs	1,322.50 ft	N/A
Total	----------	1,750.46 cfs	1,322.50 ft	N/A

Existing Culvert Capacity w/ Overtopping

Culvert Designer/Analyzer Report
Mockingbird Ln. Culvert

Component:Culvert-1

Culvert Summary					
Computed Headwater Eleva	1,322.50	ft	Discharge	1,592.76	cfs
Inlet Control HW Elev.	1,322.02	ft	Tailwater Elevation	N/A	ft
Outlet Control HW Elev.	1,322.50	ft	Control Type	Entrance Control	
Headwater Depth/Height	1.22				

Grades					
Upstream Invert	1,317.60	ft	Downstream Invert	1,317.00	ft
Length	63.00	ft	Constructed Slope	0.009524	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	2.18	ft
Slope Type	Steep		Normal Depth	1.88	ft
Flow Regime	Supercritical		Critical Depth	2.80	ft
Velocity Downstream	12.18	ft/s	Critical Slope	0.002911	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	12.00	ft
Section Size	12 x 4 ft		Rise	4.00	ft
Number Sections	5				

Outlet Control Properties					
Outlet Control HW Elev.	1,322.50	ft	Upstream Velocity Head	1.40	ft
Ke	0.50		Entrance Loss	0.70	ft

Inlet Control Properties					
Inlet Control HW Elev.	1,322.02	ft	Flow Control	Unsubmerged	
Inlet Type	45° non-offset wingwall flares		Area Full	240.0	ft²
K	0.49700		HDS 5 Chart	12	
M	0.66700		HDS 5 Scale	1	
C	0.03390		Equation Form	2	
Y	0.80300				

Culvert Designer/Analyzer Report
Mockingbird Ln. Culvert

Component:Weir

Hydraulic Component(s): Roadway (Constant Elevation)					
Discharge	157.71	cfs	Allowable HW Elevation	1,322.50	ft
Roadway Width	48.00	ft	Overtopping Coefficient	3.01	US
Length	150.00	ft	Crest Elevation	1,322.00	ft
Headwater Elevation	1,322.50	ft	Discharge Coefficient (Cr)	3.01	
Submergence Factor (Kt)	1.00				

Sta (ft)	Elev. (ft)
0.00	1,322.00
150.00	1,322.00

Ritz Carlton
Preliminary 100-Year, 2-Hour Retention Basin Volume Calculations

	Retention [1] Sub-Watershed ID	Drainage Area A (acres)	Runoff [2] Coefficient C	Land Use	Precipitation [3] P (inches)	Volume [4] Required V_{req} (acre-ft)	Retention Basin [5]	Volume Provided V (acre-ft)
Ritz Carlton								
	1	25.43	0.7	LDR	2.19	3.25	R-1	3.56
	R-1	5.76	0.3		2.19	0.32		
	SUB TOTAL	**25.43**				**3.56**		**3.56**
	2	5.14	0.61	C1/LPC	2.19	0.57	R-2	1.00
	SUB TOTAL	**5.14**		Weighted		**0.57**		**1.00**
							R-3-1	0.83
	3	7.66	0.81	C1	2.19	1.13	R-3-2	0.69
	SUB TOTAL	**7.66**				**1.13**		**1.52**
							R-4-1	1.67
	4	7.41	0.81	C1	2.19	1.10	R-4-2	0.53
	SUB TOTAL	**7.41**				**1.10**		**2.2**
							R-5-1	0.87
	5	9.11	0.81	C1	2.19	1.35	R-5-2	1.05
	SUB TOTAL	**9.11**				**1.35**		**1.92**
							R-6-1	**0.72**
	6	10.82	0.7	LDR	2.19	1.38	R-6-2	0.69
	SUB TOTAL	**10.82**				**1.38**		**1.41**
	7	9.63	0.7	LDR	2.19	1.23	R-7	1.24
	SUB TOTAL	**9.63**				**1.23**		**1.24**
							R-8-1	0.74
	8	9.58	0.94	MFR	2.19	1.64	R-8-2	0.90
	SUB TOTAL	**9.58**				**1.64**		**1.64**
							R-9-1	1.64
	9	18.35	0.81	C1	2.19	2.71	R-9-2	2.07
	SUB TOTAL	**18.35**				**2.71**		**3.71**
	10	14.07	0.81	C1	2.19	2.08	R-10	2.71
	SUB TOTAL	**14.07**				**2.08**		**2.71**
	Total	**117.23**				**16.76**		**20.91**

Reference: Drainage Policies and Standards for Maricopa County, Arizona, Draft January 2013.
Drainage Design Manual for Maricopa County, Arizona, Hydrology, August, 2013.

Notes:

1. Drainage sub-basin delineated per Drainage Map
2. Estimated 100-year C-Value per Table 3.2, Drainage Design Manual Hydrology
3. Estimated 100-year, 2-hour precipitation depth, P= 2.19 inches per NOAA 14 PRECIPITATION FREQUENCY ESTIMATES.
4. V_{req} = A x C x (P/12) = volume required for retention in acre-ft.
5. Proposed retention basins.

Onsite Ritz Channel Max Capacity

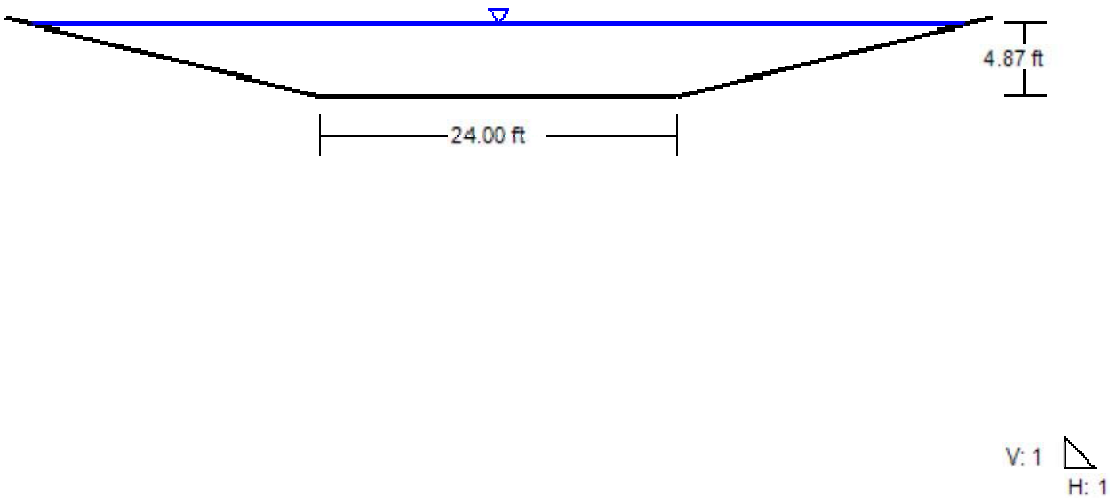
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.038	
Channel Slope	0.00430	ft/ft
Normal Depth	4.87	ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	24.00	ft
Discharge	1203.57	ft^3/s

Cross Section Image



Onsite Ritz Channel Max Capacity

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.038	
Channel Slope	0.00430	ft/ft
Normal Depth	4.87	ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	24.00	ft

Results

Discharge	1203.57	ft^3/s
Flow Area	211.75	ft^2
Wetted Perimeter	64.16	ft
Hydraulic Radius	3.30	ft
Top Width	62.96	ft
Critical Depth	3.50	ft
Critical Slope	0.01573	ft/ft
Velocity	5.68	ft/s
Velocity Head	0.50	ft
Specific Energy	5.37	ft
Froude Number	0.55	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.87	ft
Critical Depth	3.50	ft
Channel Slope	0.00430	ft/ft

Onsite Ritz Channel Max Capacity

GVF Output Data

Critical Slope	0.01573	ft/ft

Onsite Ritz Channel Max Water Depth

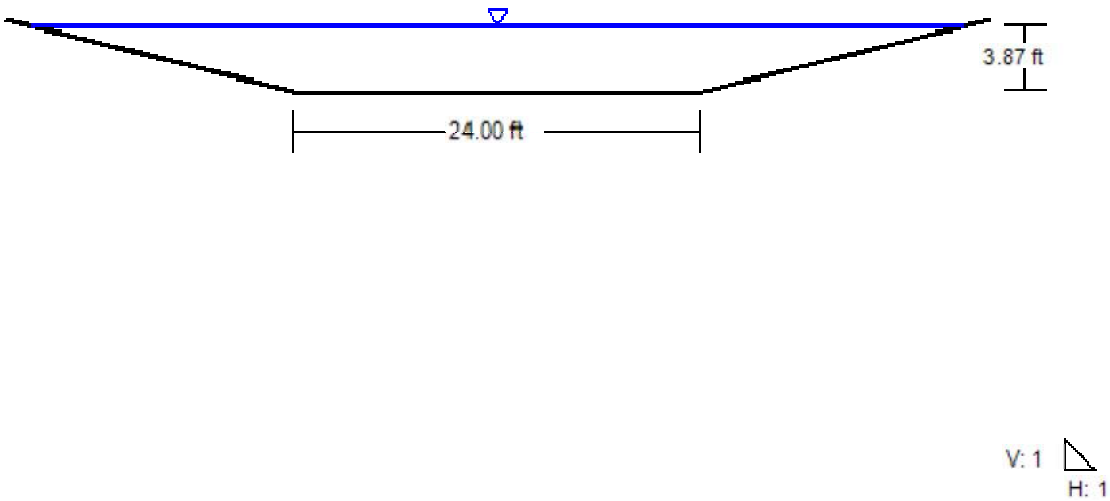
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.038	
Channel Slope	0.00430	ft/ft
Normal Depth	3.87	ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	24.00	ft
Discharge	764.00	ft^3/s

Cross Section Image



Onsite Ritz Channel Max Water Depth

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.038	
Channel Slope	0.00430	ft/ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	24.00	ft
Discharge	764.00	ft^3/s

Results

Normal Depth	3.87	ft
Flow Area	152.54	ft^2
Wetted Perimeter	55.88	ft
Hydraulic Radius	2.73	ft
Top Width	54.92	ft
Critical Depth	2.70	ft
Critical Slope	0.01686	ft/ft
Velocity	5.01	ft/s
Velocity Head	0.39	ft
Specific Energy	4.26	ft
Froude Number	0.53	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.87	ft
Critical Depth	2.70	ft
Channel Slope	0.00430	ft/ft

Onsite Ritz Channel Max Water Depth

GVF Output Data

Critical Slope	0.01686	ft/ft

APPENDIX E

Excerpts from Erie & Associates Master Drainage Report

Due 12-9 305-PA-2008

LORI STEWART

Master Drainage Report

for

7000 E Lincoln Drive

(Southwest Corner of Indian Bend ~~& Scottsdale Roads~~)

Phase 3 Report

Stormwater Review By:
Joe Rumann
Phone 480-312-7072
FAX 480-312-7971
E-mail jrumann@ScottsdaleAZ.gov
Review Cycle 2 Date 12-3-08

2nd

For submittal to:

City of Scottsdale

and

Town of Paradise Valley

Plan # 4243-08
Case # 305-PA-2008
Q-S #
☐ Accepted
☑ Corrections
Joe Rumann 12-3-08
Reviewed By Date

Case Drainage

Prepared by

Erie & Associates, Inc.

3120 N. 24th Street

Phoenix, AZ 85016

Registered Professional Engineer (Civil)
CERTIFICATE NO. 10274
LEONARD J. ERIE, II
Date Signed 18 NOV 08
ARIZONA, U.S.A.
EXPIRED

EA #1540.01

Revised November 17, 2008

June 26, 2008

11-19-08

4243-08

Erie & Associates, Inc.
CONSULTING ENGINEERS
3120 N. 24th St. / Phoenix, Arizona 85016 / (602) 954-6399

The HEC-1 input/output is attached as *Appendix C* and peak flows at selected locations are included as *Table 4*.

Table 4 - Present Conditions Flow Rates

Concentration Point	Description	100-year Peak Flow (cfs)
C2.4	Main wash on Mockingbird	1853.
C10	Lincoln Drive & Mockingbird	705.
C2.5	Wash on confluence at center of property	1882.
N/A	Main wash crossing on Scottsdale Road	0
C3.1A	South of Indian Bend at Scottsdale Road	1900.
C11	Scottsdale & Lincoln Drive	964.
1	North of Indian Bend & Scottsdale Roads (Mummy Mountain Wash)	699.

A majority of the 1900 cfs flow passes over Scottsdale Road along the 7000 E Lincoln Drive property frontage (1660 cfs) and the balance (240 cfs) arrives at Scottsdale and Lincoln Drive. Section 6.0 of this report discusses this in more detail. The peak flows are also shown with routing on *Plate 7 - Present Conditions Flow Map*.

Review of the historical vs. the present conditions results shows that although the tributary has developed, because of upstream diversions, flows into the property from the main wash have decreased from 1769 cfs to 1456 cfs. Diversions along Lincoln Drive have further reduced the flows at the confluence in the center of the site from 2624 cfs to 1882 cfs.

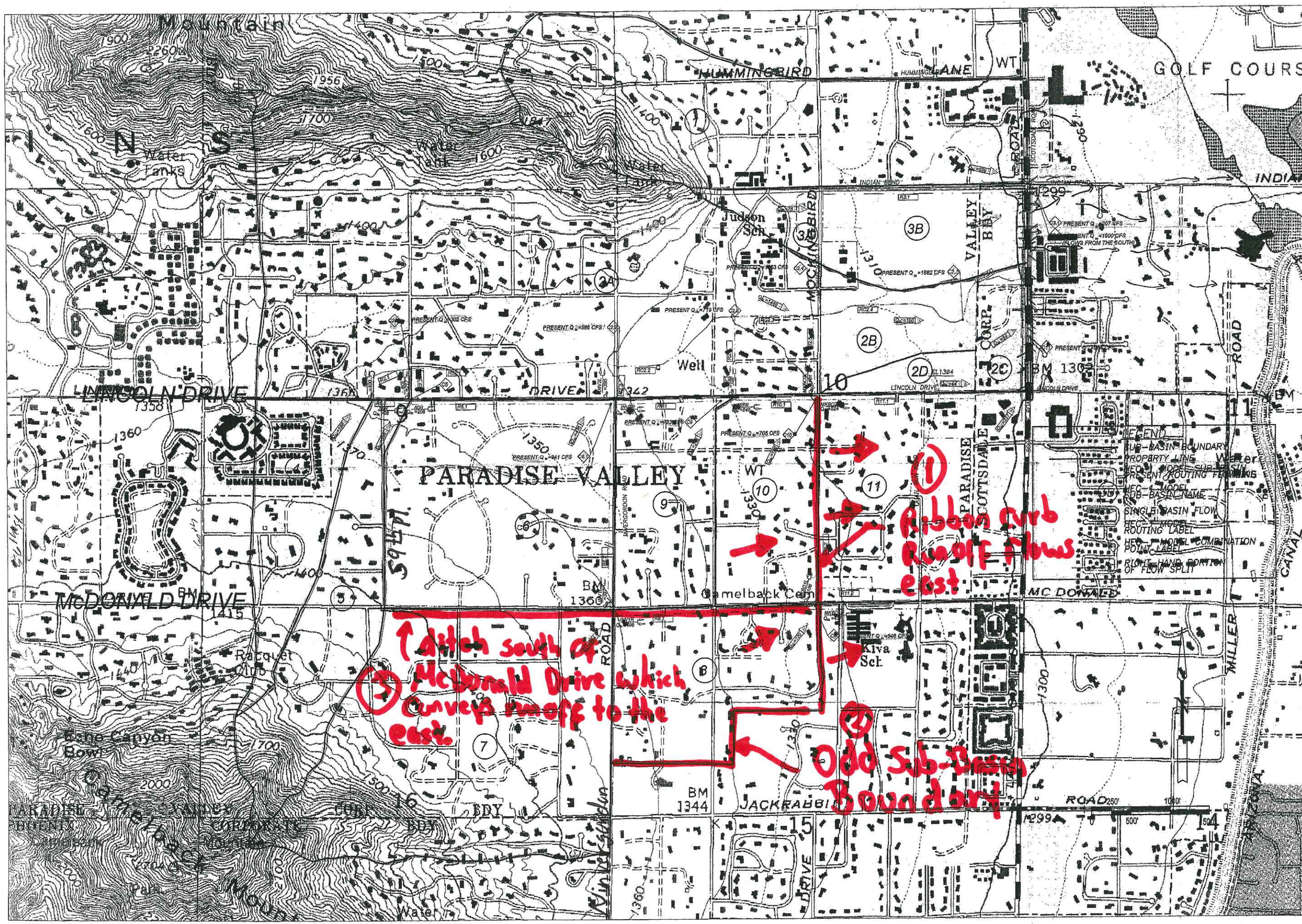
Conversely, flows crossing Scottsdale Road along the project's frontage have increased dramatically from 180 cfs to 1900 cfs.

Flows in Mummy Mountain Wash north of Indian Bend have also increased from 586 cfs to 699 cfs. These flows run north from Indian Bend Road to the Stillman Wash crossing.

where is this?
what about 36" x 22" cmpa

7000 E. LINCOLN

PRESENT CONDITIONS; FLOW EXHIBIT

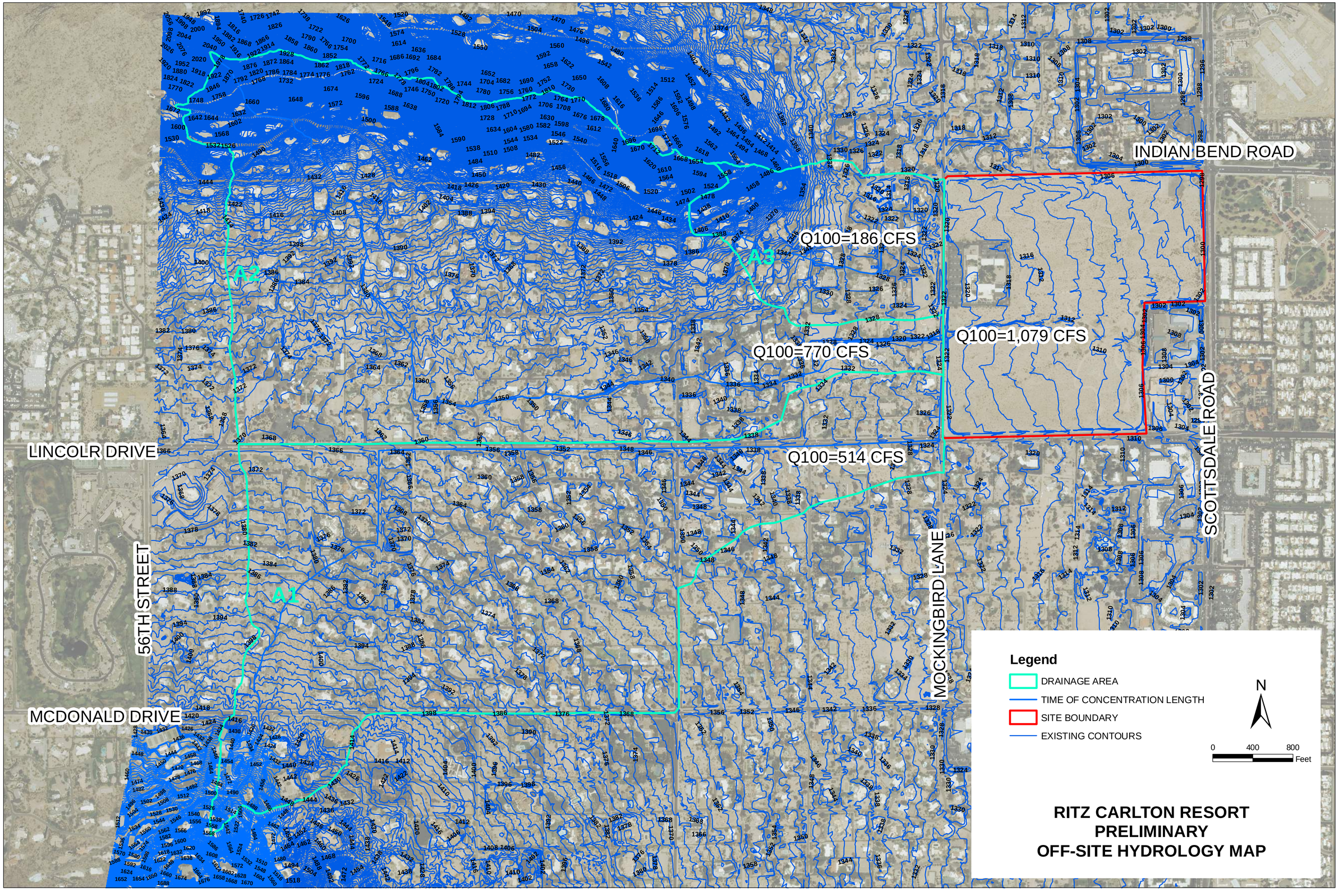


APPENDIX F

CVL Preliminary HEC-1 Model

```
1****************************************                              **************************************
 *                                      *                              *                                    *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                              *    U.S. ARMY CORPS OF ENGINEERS    *
 *             JUN   1998               *                              *    HYDROLOGIC ENGINEERING CENTER   *
 *           VERSION 4.1                *                              *          609 SECOND STREET         *
 *                                      *                              *       DAVIS, CALIFORNIA 95616      *
 *  RUN DATE   08JUN15  TIME  16:13:43  *                              *           (916) 756-1104           *
 *                                      *                              *                                    *
 ****************************************                              **************************************


                         X     X  XXXXXXX   XXXXX          X
                         X     X  X        X     X        XX
                         X     X  X        X               X
                         XXXXXXX  XXXX     X       XXXXX   X
                         X     X  X        X               X
                         X     X  X        X     X         X
                         X     X  XXXXXXX   XXXXX         XXX


          THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

          THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
          THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
          NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
          DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
          KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                         HEC-1 INPUT                                                   PAGE  1

         LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

           1           ID        Flood Control District of Maricopa County
           2           ID        RITZ CARLTON - OFF-SITE DRAINAGE ANALYSIS
           3           ID        100 YEAR
           4           ID        6 Hour  Storm
           5           ID        Unit Hydrograph: Clark
           6           ID        Storm: Multiple
           7           ID        06/08/2015
                       *DIAGRAM
           8           IT       5  1JAN99       0    2000
           9           IO       5
          10           IN      15
                       *
          11           JD   2.621  0.0001
          12           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
          13           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
          14           PC   0.962   0.972   0.983   0.991   1.000
          15           JD   2.605  0.5000
          16           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
          17           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
          18           PC   0.962   0.972   0.983   0.991   1.000
          19           JD   2.555     2.8
          20           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
          21           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
          22           PC   0.950   0.963   0.975   0.988   1.000
                       *

          23           KK      A1   BASIN
          24           BA   0.565
          25           LG    0.30    0.25    4.58    0.36       7
          26           UC   0.479   0.402
          27           UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
          28           UA     100
                       *

          29           KK      A2   BASIN
          30           BA   0.679
          31           LG    0.27    0.25    4.51    0.39      25
          32           UC   0.435   0.306
          33           UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
          34           UA     100
                       *

          35           KK  COMB01 COMBINE
          36           HC       2
                       *

          37           KK      A3   BASIN
          38           BA   0.116
          39           LG    0.29    0.25    4.65    0.35      21
          40           UC   0.260   0.205
          41           UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
          42           UA     100
                       *
          43           ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING         (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR       (<---) RETURN OF DIVERTED OR PUMPED FLOW

    23          A1
                 .
                 .
    29           .          A2
                 .           .
                 .           .
    35      COMB01............
                 .
                 .
    37           .          A3

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                              **************************************
 *                                      *                              *                                    *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                              *    U.S. ARMY CORPS OF ENGINEERS    *
 *             JUN   1998               *                              *    HYDROLOGIC ENGINEERING CENTER   *
 *           VERSION 4.1                *                              *          609 SECOND STREET         *
 *                                      *                              *       DAVIS, CALIFORNIA 95616      *
 *  RUN DATE   08JUN15  TIME  16:13:43  *                              *           (916) 756-1104           *
 *                                      *                              *                                    *
 ****************************************                              **************************************


                               Flood Control District of Maricopa County
                               RITZ CARLTON - OFF-SITE DRAINAGE ANALYSIS
                               100 YEAR
                               6 Hour  Storm
                               Unit Hydrograph: Clark
                               Storm: Multiple
                               06/08/2015

    9 IO          OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
```

```
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                     NMIN          5  MINUTES IN COMPUTATION INTERVAL
                    IDATE      1JAN99  STARTING DATE
                    ITIME        0000  STARTING TIME
                       NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                  NDDATE      7JAN99  ENDING DATE
                  NDTIME        2235  ENDING TIME
                   ICENT          19  CENTURY MARK

                COMPUTATION INTERVAL    0.08 HOURS
                     TOTAL TIME BASE  166.58 HOURS

          ENGLISH UNITS
               DRAINAGE AREA         SQUARE MILES
               PRECIPITATION DEPTH   INCHES
               LENGTH, ELEVATION     FEET
               FLOW                  CUBIC FEET PER SECOND
               STORAGE VOLUME        ACRE-FEET
               SURFACE AREA          ACRES
               TEMPERATURE           DEGREES FAHRENHEIT

   11 JD          INDEX STORM NO. 1
                       STRM        2.62  PRECIPITATION DEPTH
                       TRDA        0.00  TRANSPOSITION DRAINAGE AREA

   12 PI            PRECIPITATION PATTERN
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                       0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                       0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00

   15 JD          INDEX STORM NO. 2
                       STRM        2.61  PRECIPITATION DEPTH
                       TRDA        0.50  TRANSPOSITION DRAINAGE AREA

   16 PI            PRECIPITATION PATTERN
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                       0.03      0.03      0.05      0.05      0.05      0.15      0.15      0.15      0.03      0.03
                       0.03      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00

   19 JD          INDEX STORM NO. 3
                       STRM        2.56  PRECIPITATION DEPTH
                       TRDA        2.80  TRANSPOSITION DRAINAGE AREA

   20 PI            PRECIPITATION PATTERN
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                       0.03      0.03      0.07      0.07      0.07      0.08      0.08      0.08      0.05      0.05
                       0.05      0.02      0.02      0.02      0.01      0.01      0.01      0.00      0.00      0.00
                       0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                       0.00      0.00
1
                                                   RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                        TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
          OPERATION       STATION    FLOW     PEAK                                          AREA      STAGE     MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR

          HYDROGRAPH AT
+                            A1      514.    4.25          69.         17.          6.       0.56

          HYDROGRAPH AT
+                            A2      770.    4.25         100.         25.          8.       0.68

          2 COMBINED AT
+                        COMB01     1079.    4.25         156.         39.         13.       1.24

          HYDROGRAPH AT
+                            A3      186.    4.08          17.          4.          1.       0.12


 *** NORMAL END OF HEC-1 ***
```



RITZ CARLTON RESORT
PRELIMINARY
OFF-SITE HYDROLOGY MAP

APPENDIX G

CVL Preliminary SCS Model

HYDROLOGIC DESIGN DATA SHEET

S C S METHOD: PART I (less than 10 sq. mi.)

LOCATION DATA:

Subdivision: Ritz Carlton — City: Paradise Valley

Location: SW Corner Of Scottsdale Rd and Indian Bend Rd — County: Maricopa

Name of Wash: _____

DESIGN DATA:

Design Frequency	100	years
Drainage Area	1.244	square miles (Sub-Basins A1 & A2)
Drainage Length	10,831	feet
Elevation		
Top of Drainage Area	1576	feet) 258 feet Fall
At Structure	1318	feet)
Drainage Area Slope	2.38	%
Drainage Width	5,900	feet *Source*
Width factor Wf	0.89	
Vegetative Cover Type	N/A	assume 100% of the drainage area is urban (zoning RE-43)
Vegetative Cover Density	N/A	%
Soil Group (NRCS)	B (43%), C (33%)	

Use soil Group C because it has a lower infiltration rate

DESIGN COMPUTATION:

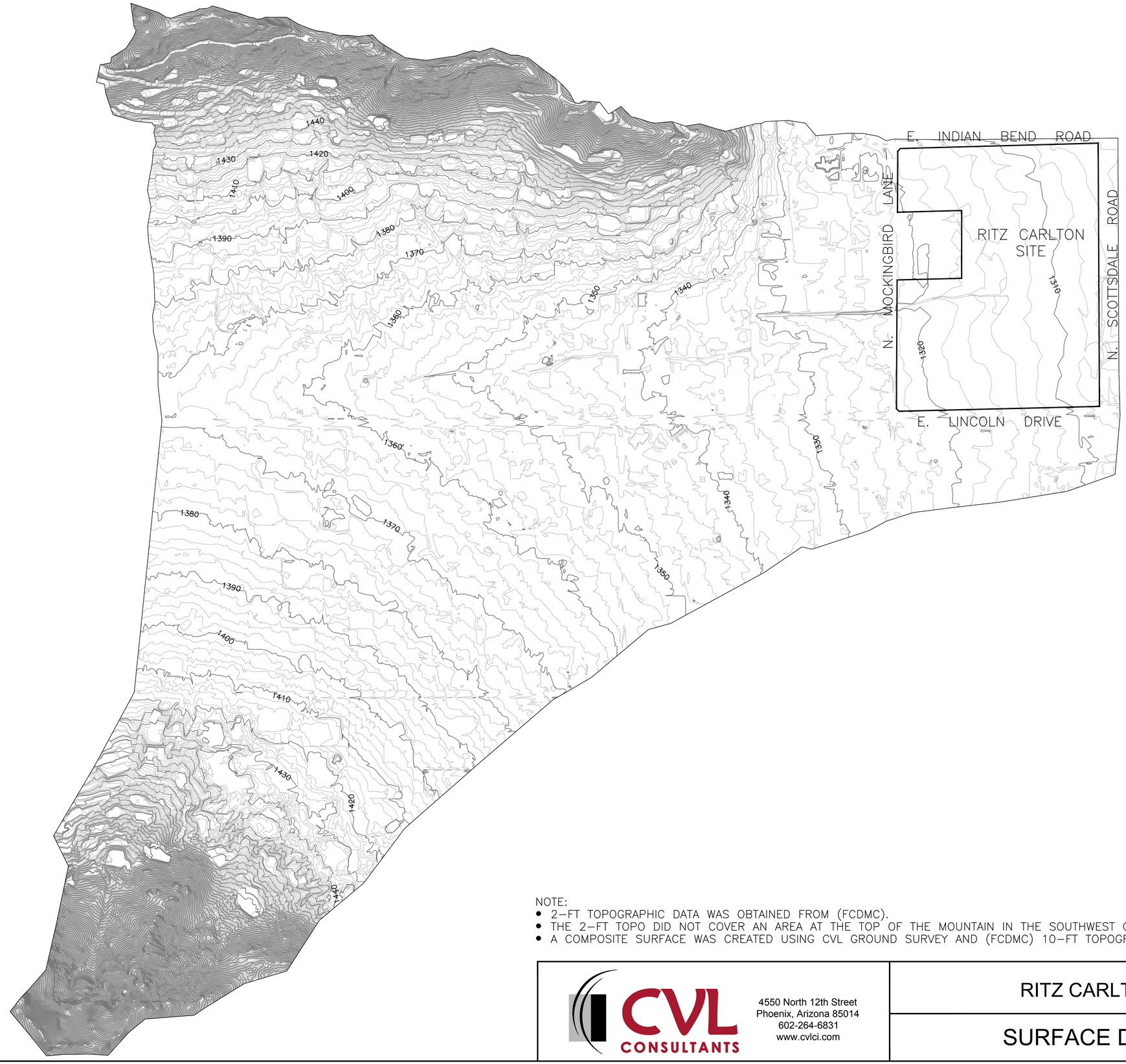
Precipitation P = ~~1~~ 2 hour =	2.82	inches Fig. from pg. 17
Curve Number	83	Fig. from pg. 15
Runoff Q =	1.35	inches Fig. from pg. 19
Time of Concentration Tc	0.96	hours Fig. from pg. 21
Time of Peak Tp = (TC)(Wf)	0.96 (0.89) = 0.854	hours

Peak Discharge $Qp = \frac{484AQ}{TP} = \frac{484(1.244)(1.35)}{0.854} = 951$

= 951 cfs

Computed by N.Z Date 7/2/15

XPSWMM (Offsite Flow) Exhibits

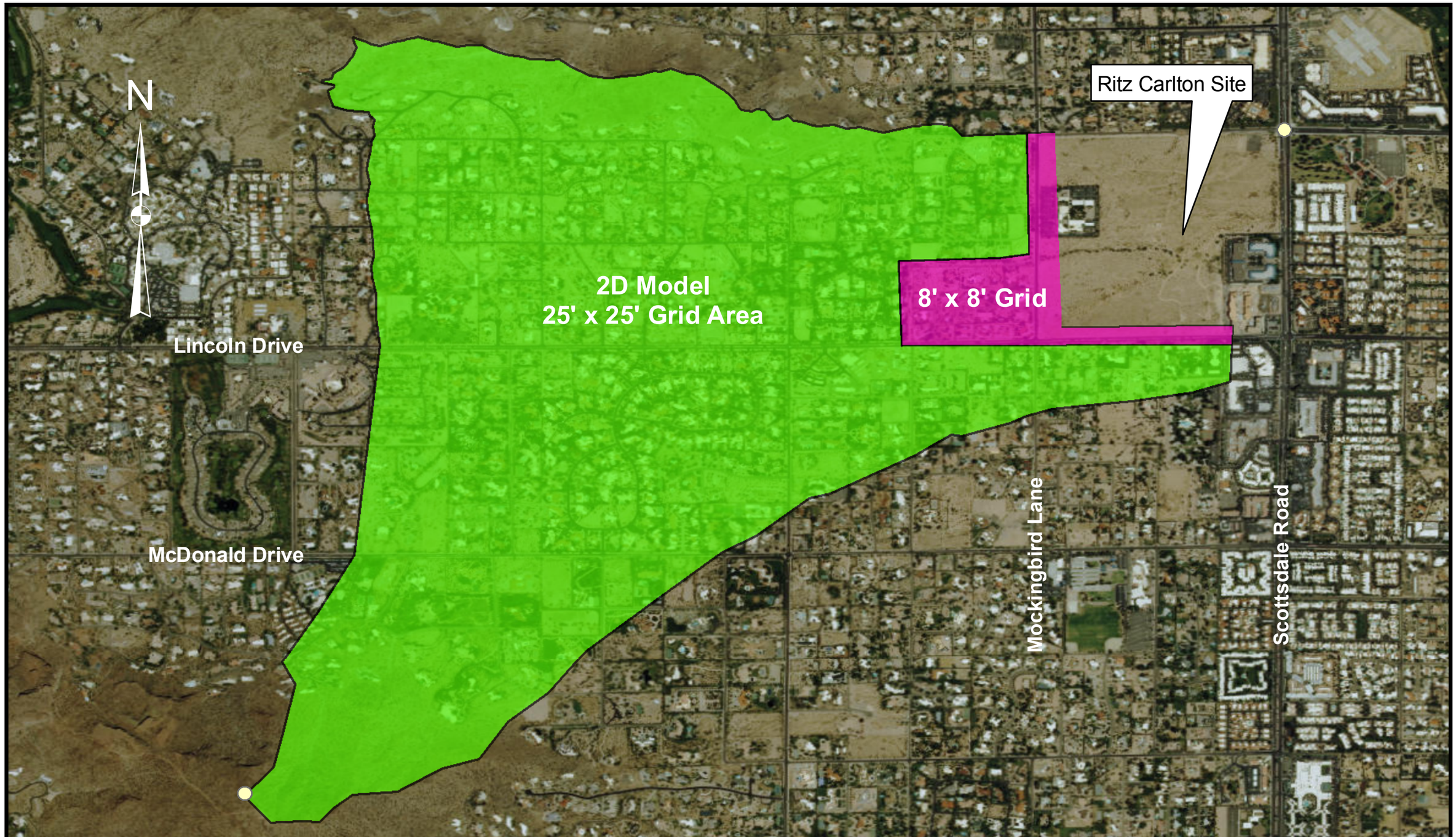


NOTE:
- 2-FT TOPOGRAPHIC DATA WAS OBTAINED FROM (FCDMC).
- THE 2-FT TOPO DID NOT COVER AN AREA AT THE TOP OF THE MOUNTAIN IN THE SOUTHWEST CORNER OF THE WATERSHED.
- A COMPOSITE SURFACE WAS CREATED USING CVL GROUND SURVEY AND (FCDMC) 10-FT TOPOGRAPHIC DATA.

CVL CONSULTANTS
4550 North 12th Street
Phoenix, Arizona 85014
602-264-6831
www.cvlci.com

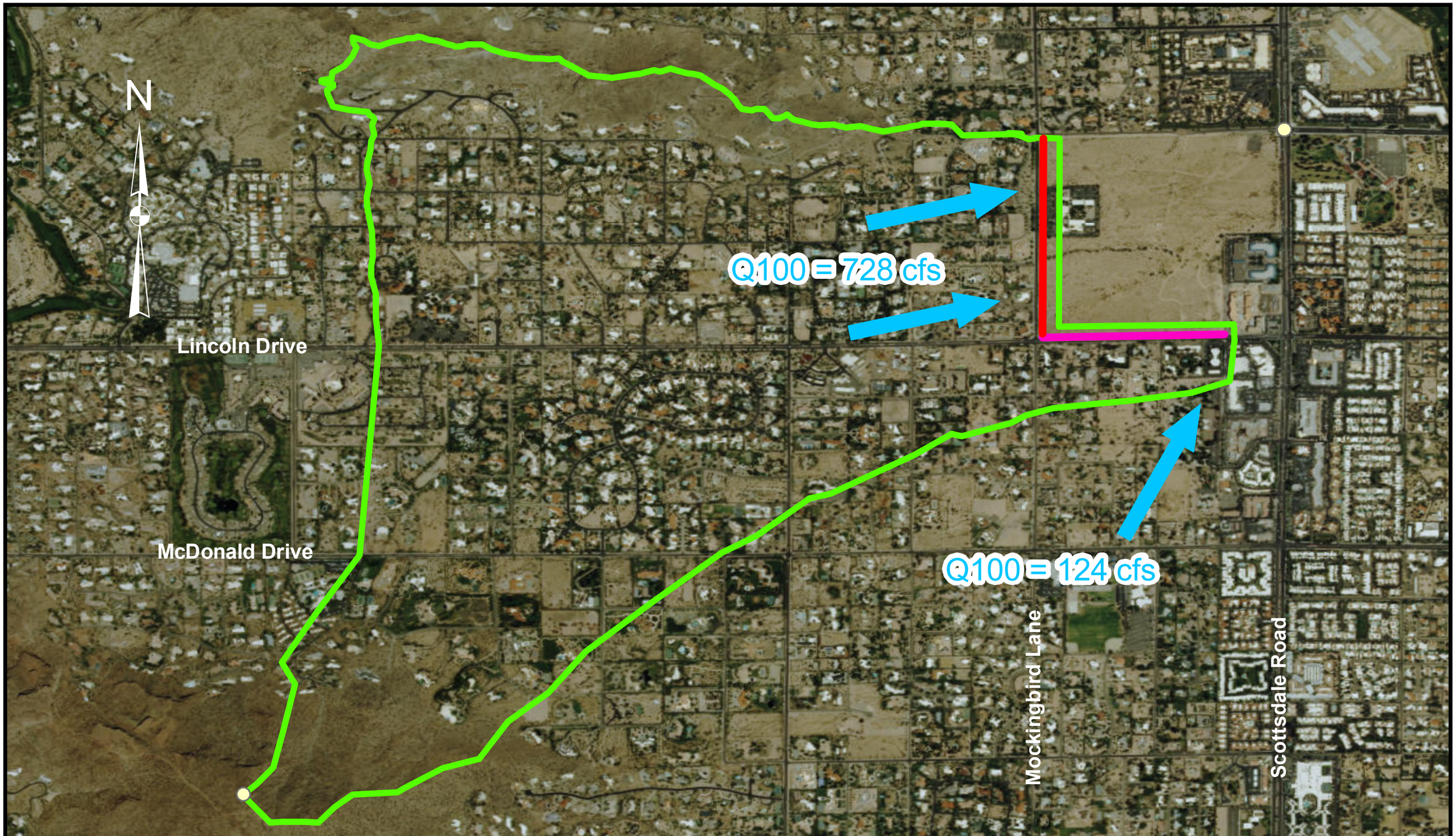
RITZ CARLTON	JOB NO. 0268901
SURFACE DATA	EXHIBIT 1

Printed By: DeniseM Print Date: September 25, 2015 Filename: N:\0\0268901\Hydro\CAD\WB.DRAIN.OFFSITE.dwg
PROJECT NO. 0268901



CVL CONSULTANTS
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

RITZ CARLTON	JOB NO. 0268901
XPSWMM Model Boundary and Grid Size	Exhibit 2



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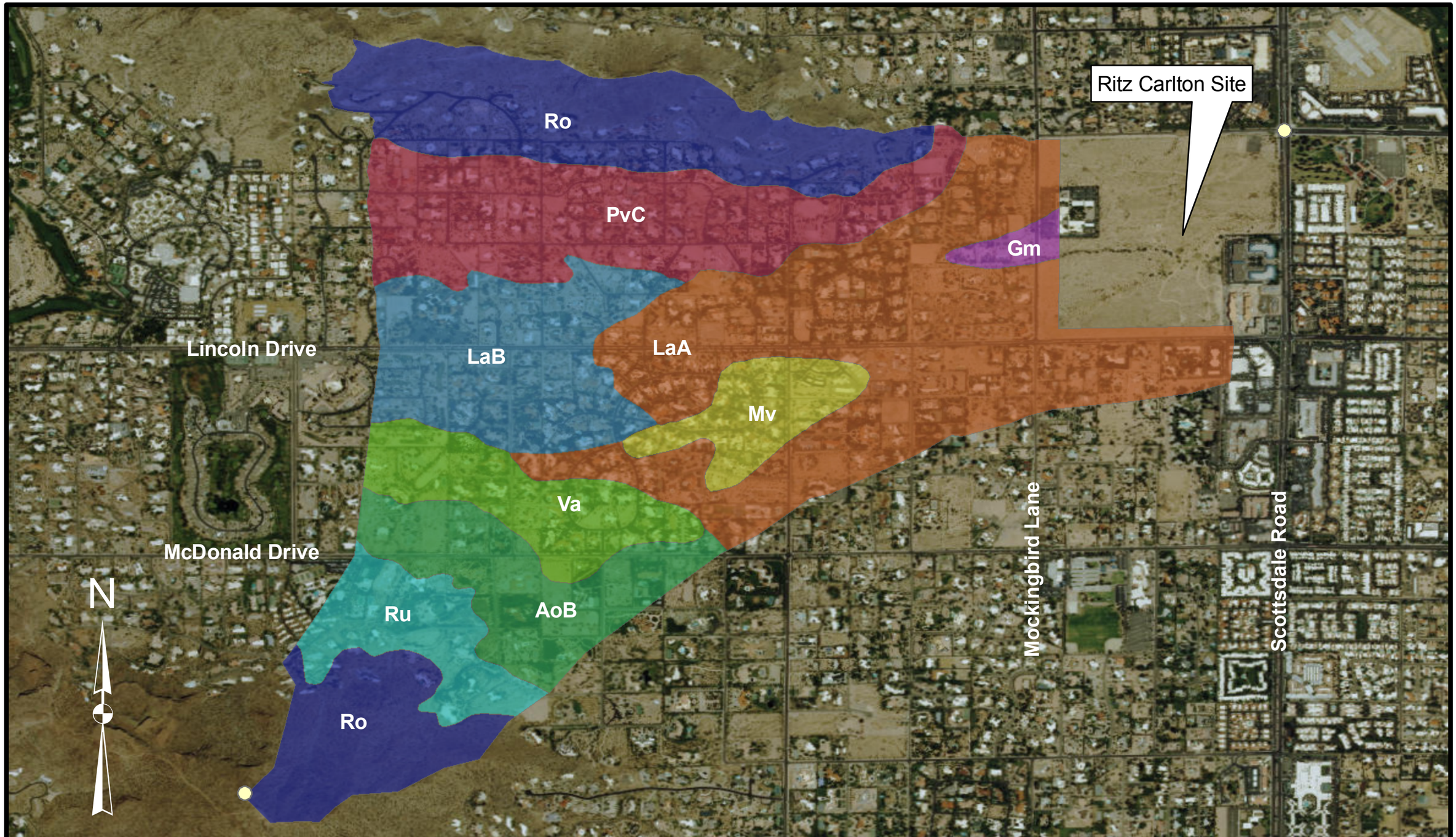
RITZ CARLTON	JOB NO. 0268901
XPSWMM - Flow Cross Sections and 100-yr Peak Flows	Exhibit 3



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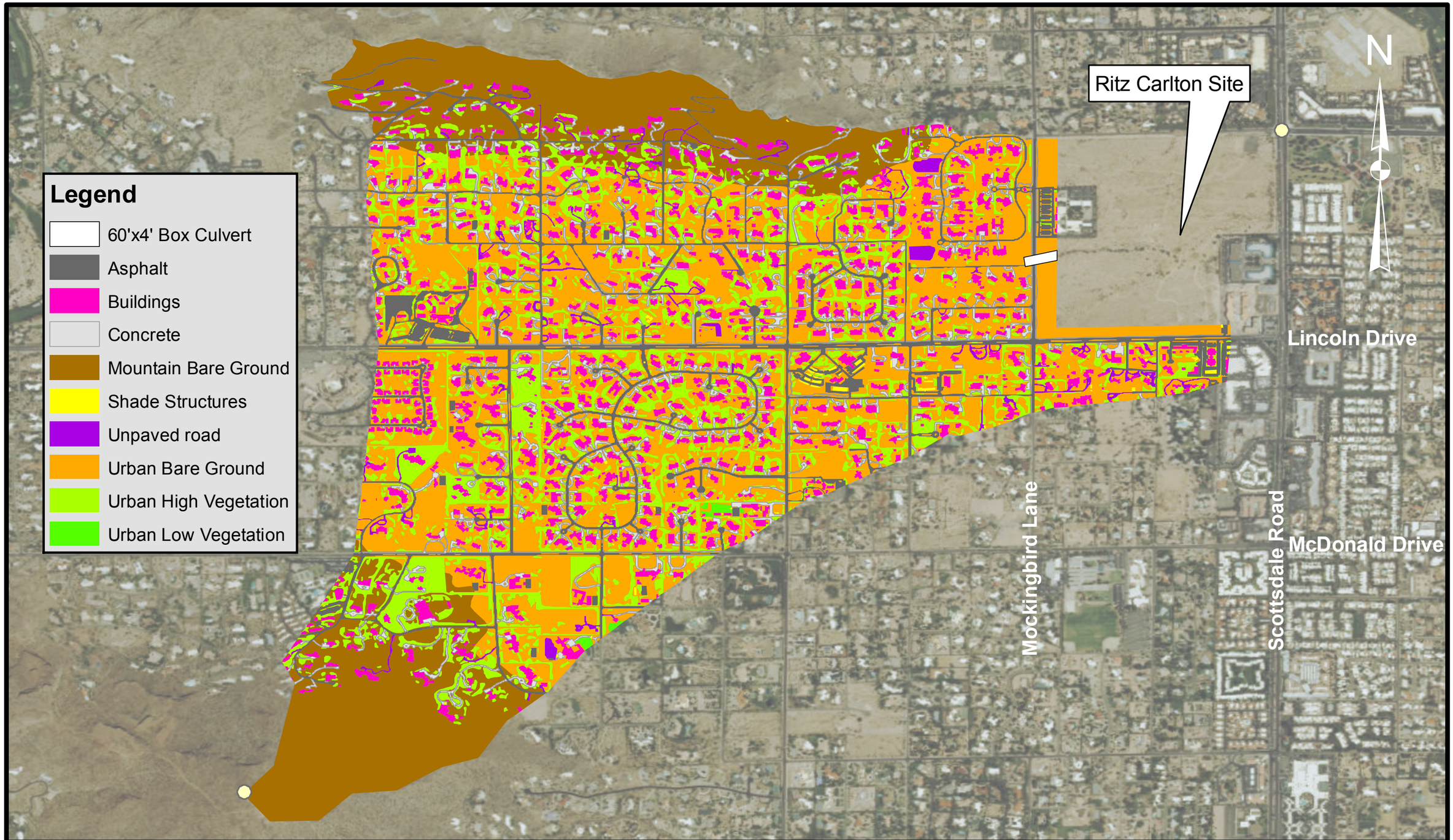
RITZ CARLTON	JOB NO. 0268901
Soil Data	Exhibit 4



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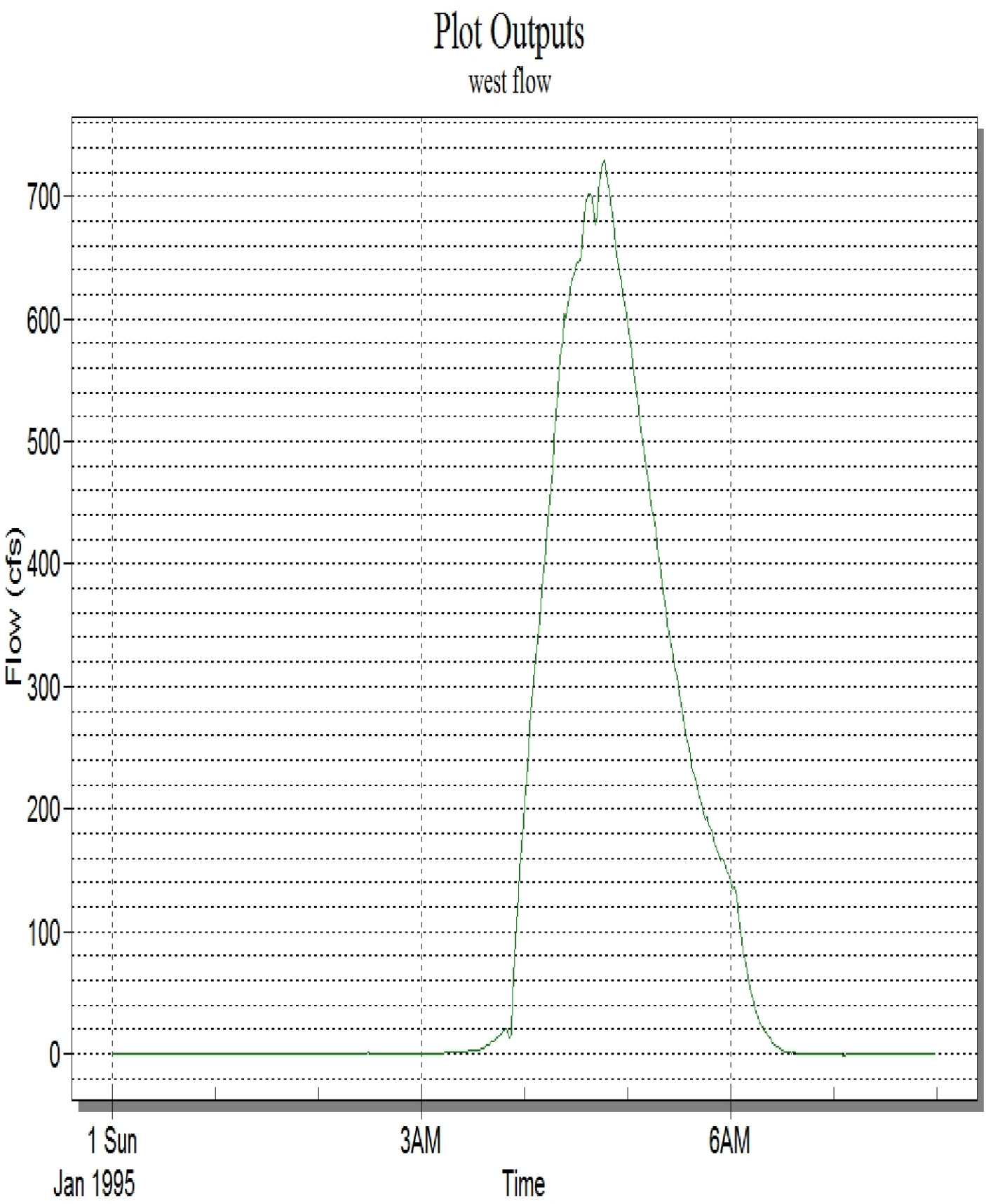
RITZ CARLTON	JOB NO. 0268901
Landuse~Culvert Data	Exhibit 5



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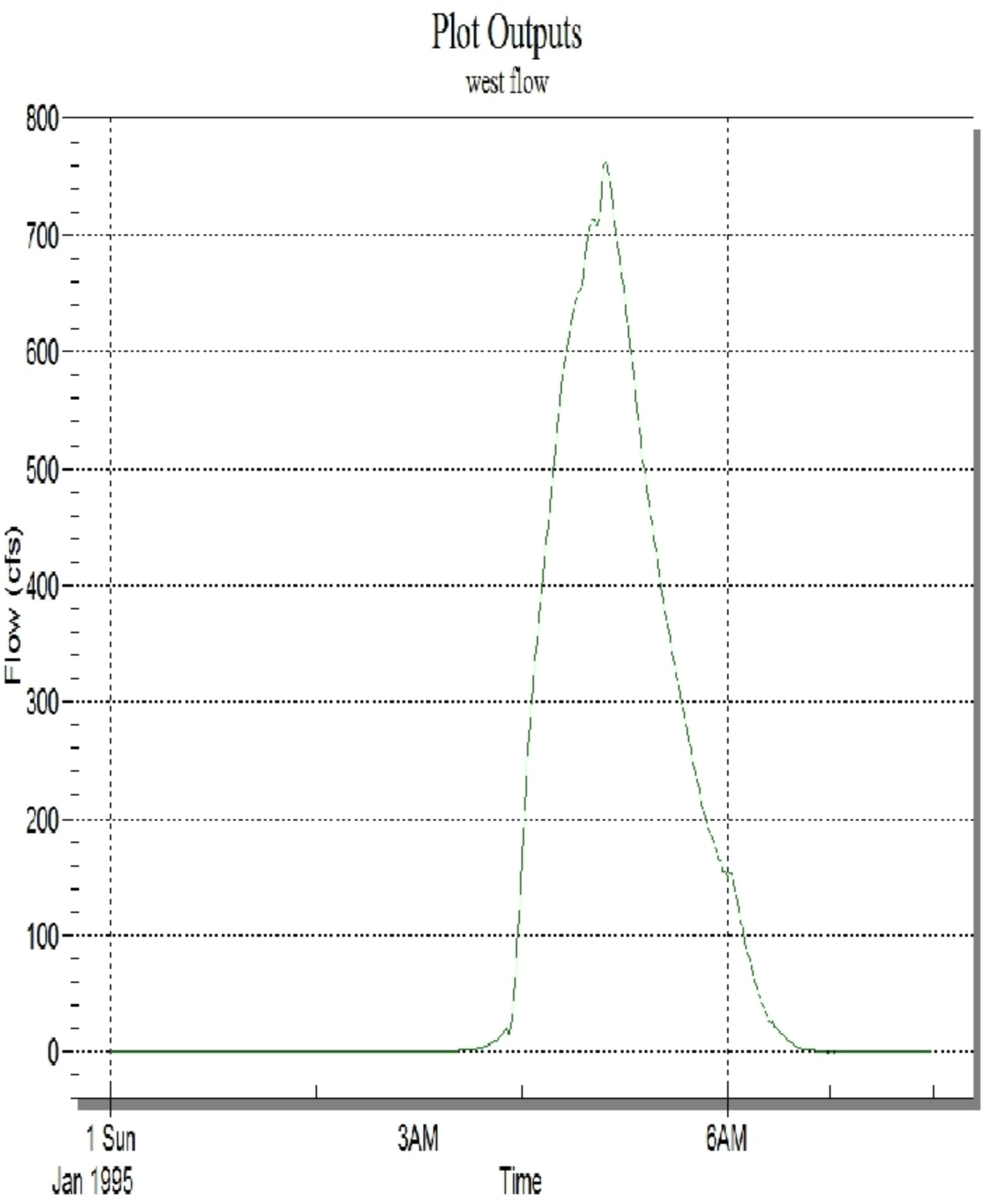
RITZ CARLTON

JOB NO. 0268901

MOCKINGBIRD LN INFLOW HYDROGRAPH

EXHIBIT 6A



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RITZ CARLTON

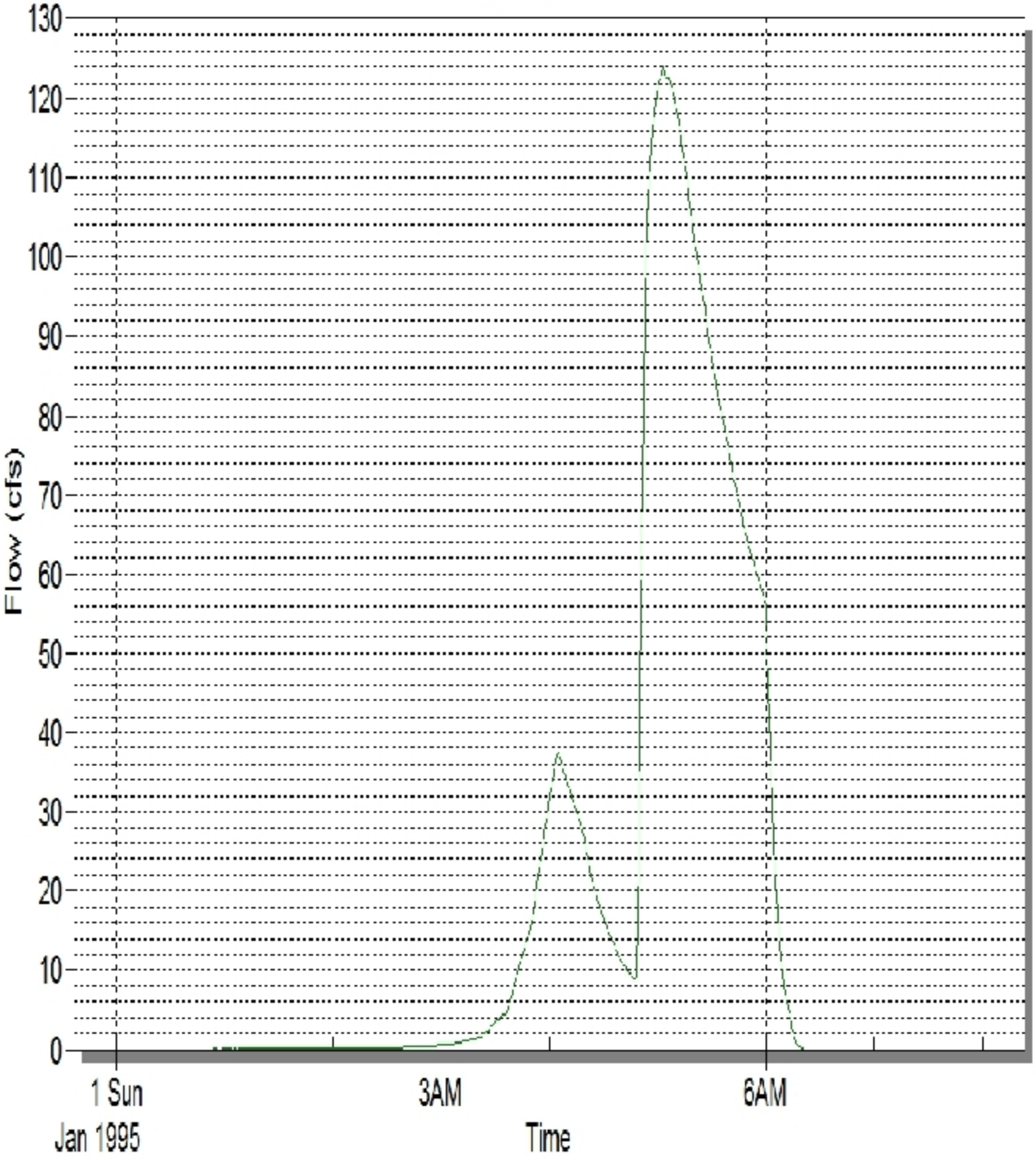
JOB NO. 0268901

MOCKINGBIRD LN INFLOW HYDROGRAPH - NO BLOCKAGE

EXHIBIT 6B

Plot Outputs

south flow



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RITZ CARLTON

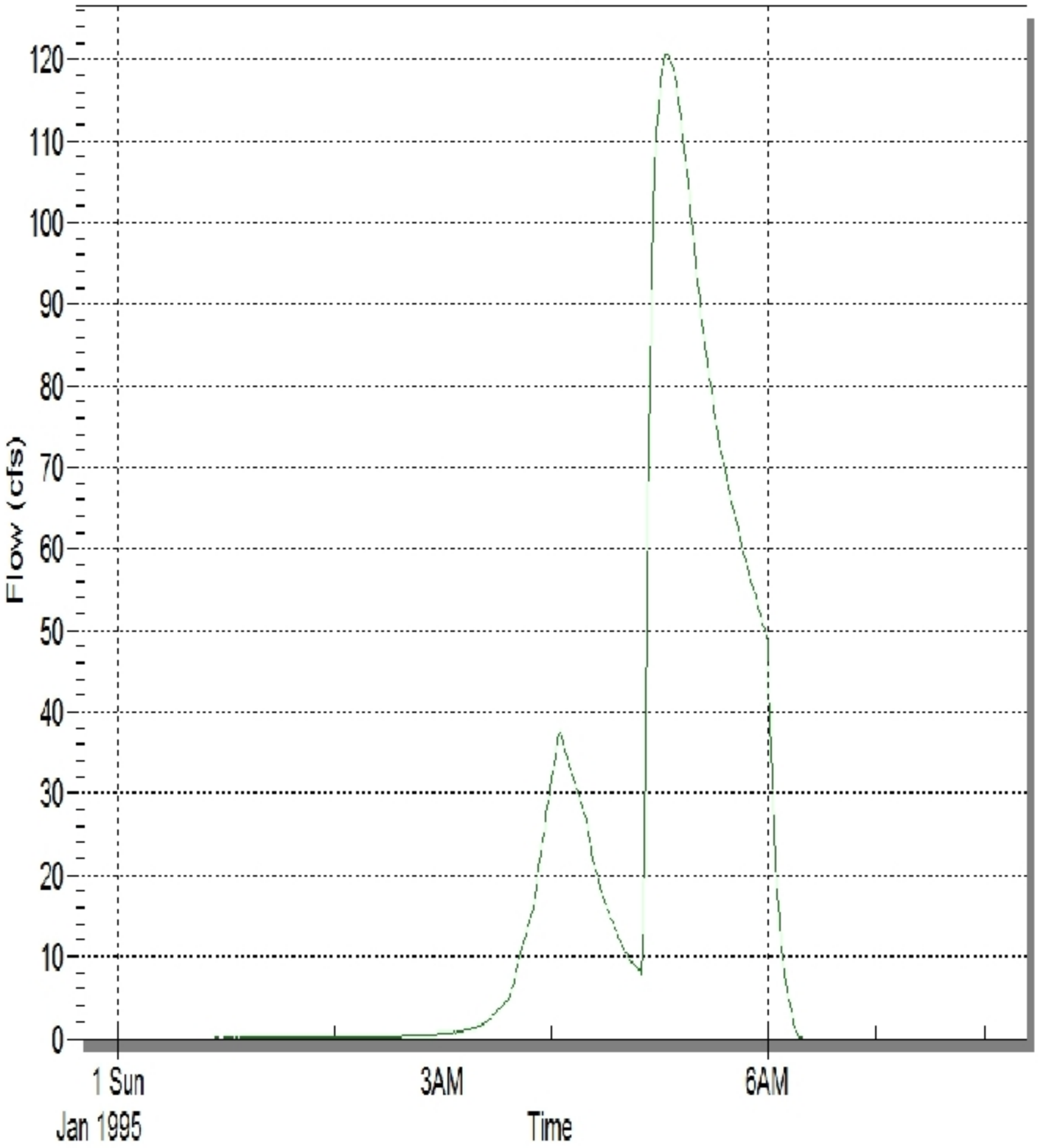
JOB NO. 0268901

LINCOLN DRIVE INFLOW HYDROGRAPH

Exhibit 7A

Plot Outputs

south flow



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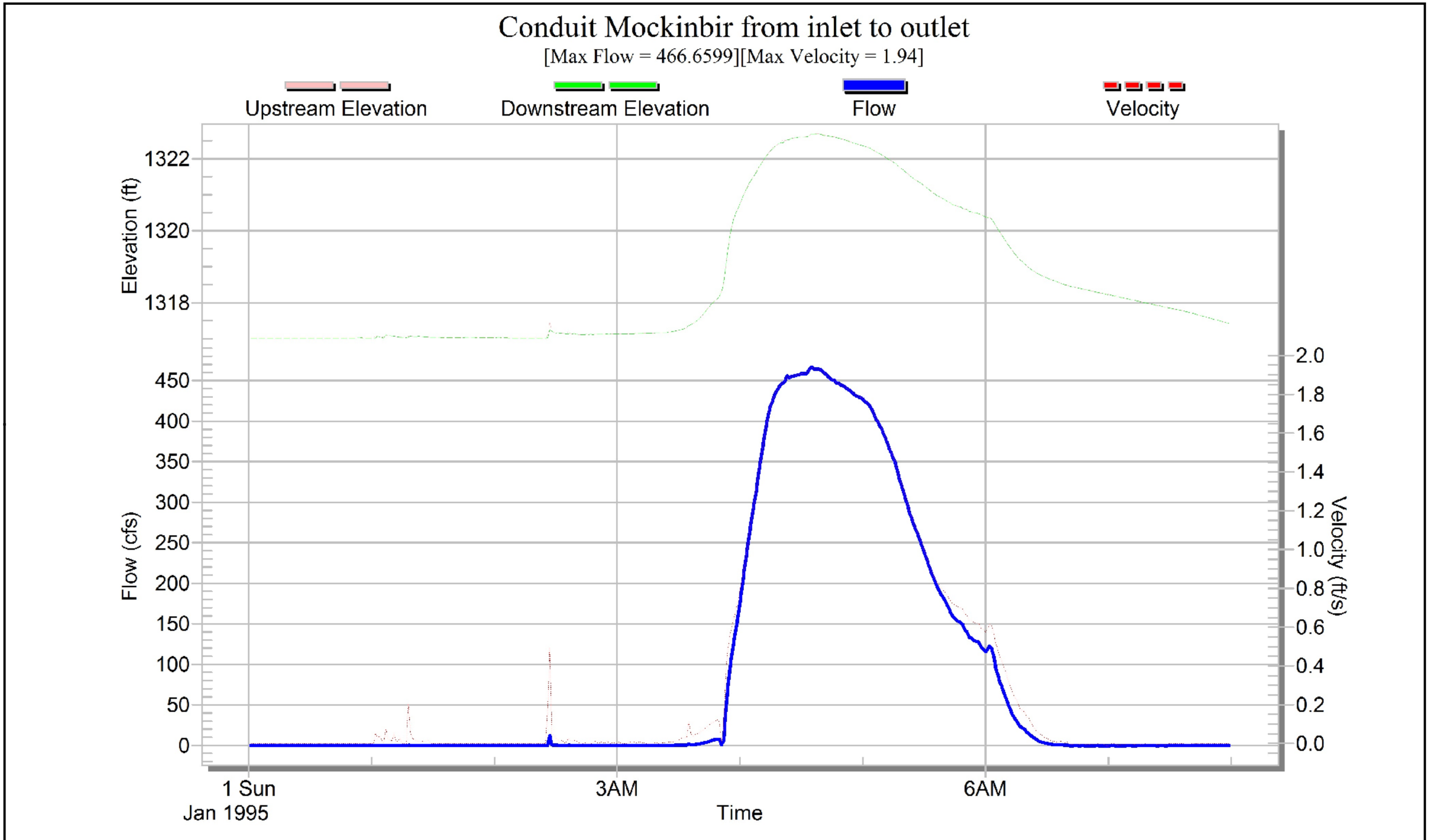
TELEPHONE (602) 264-6831

RITZ CARLTON

JOB NO. 0268901

LINCOLN DRIVE INFLOW HYDROGRAPH - NO BLOCKAGE

Exhibit 7B



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PHOENIX, ARIZONA 85014
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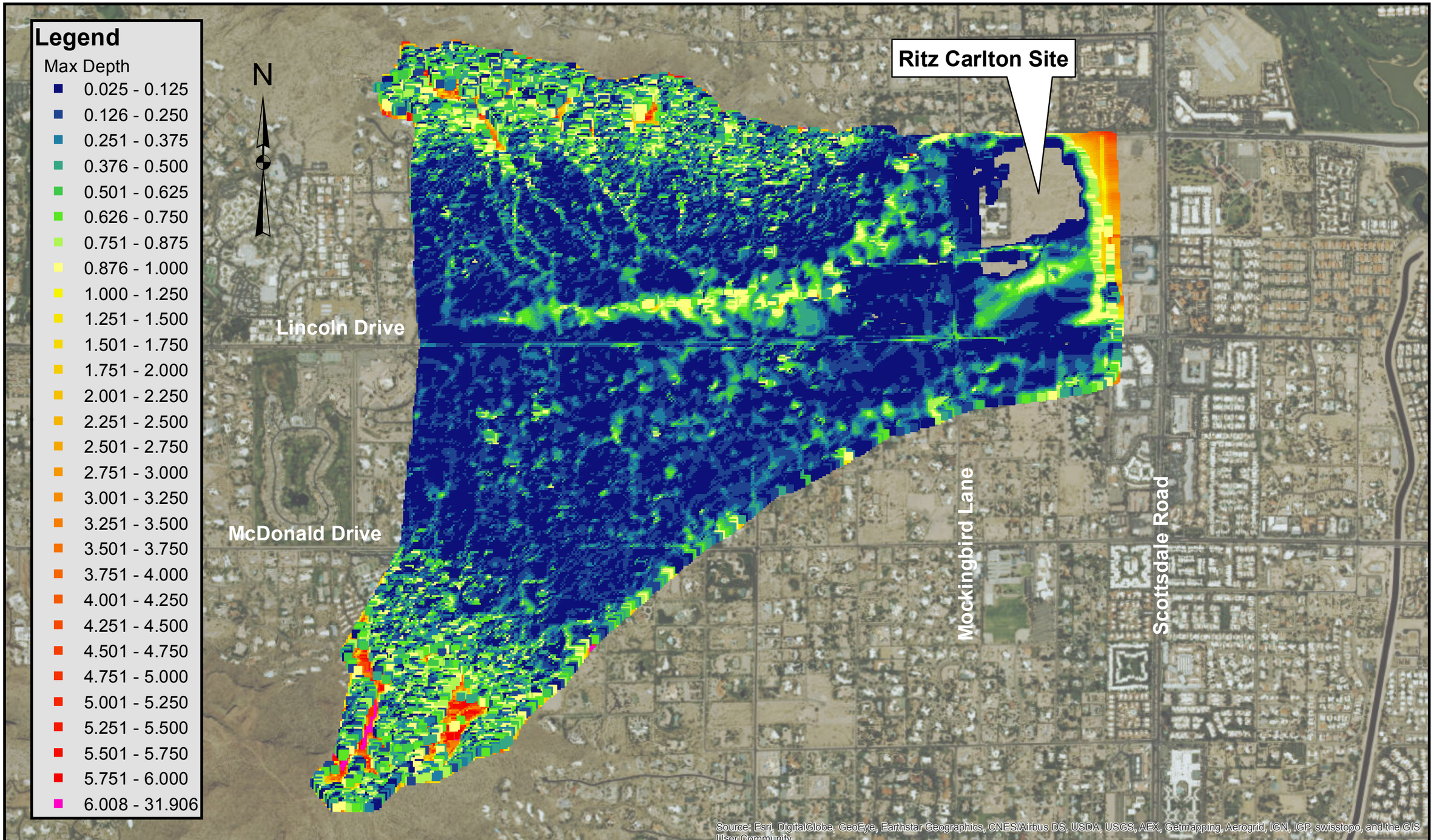
RITZ CARLTON

JOB NO. 0268901

MOCKINGBIRD LANE
BOX CULVERT HYDROGRAPH

Exhibit 8



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CVL CONSULTANTS

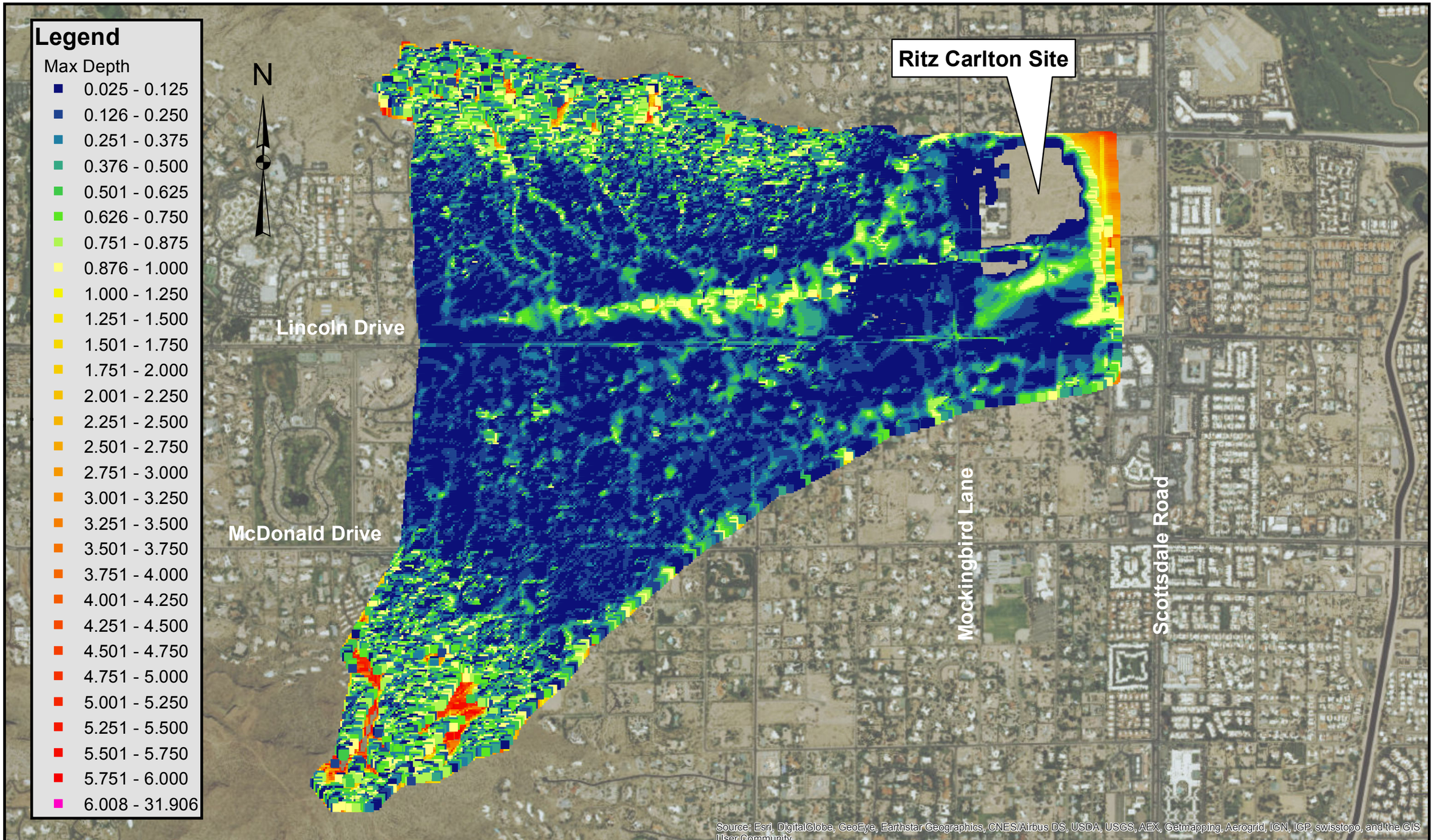
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

RITZ CARLTON

2D MAXIMUM WATER DEPTHS EXISTING

JOB NO. 0268901

EXHIBIT 9



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4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

RITZ CARLTON

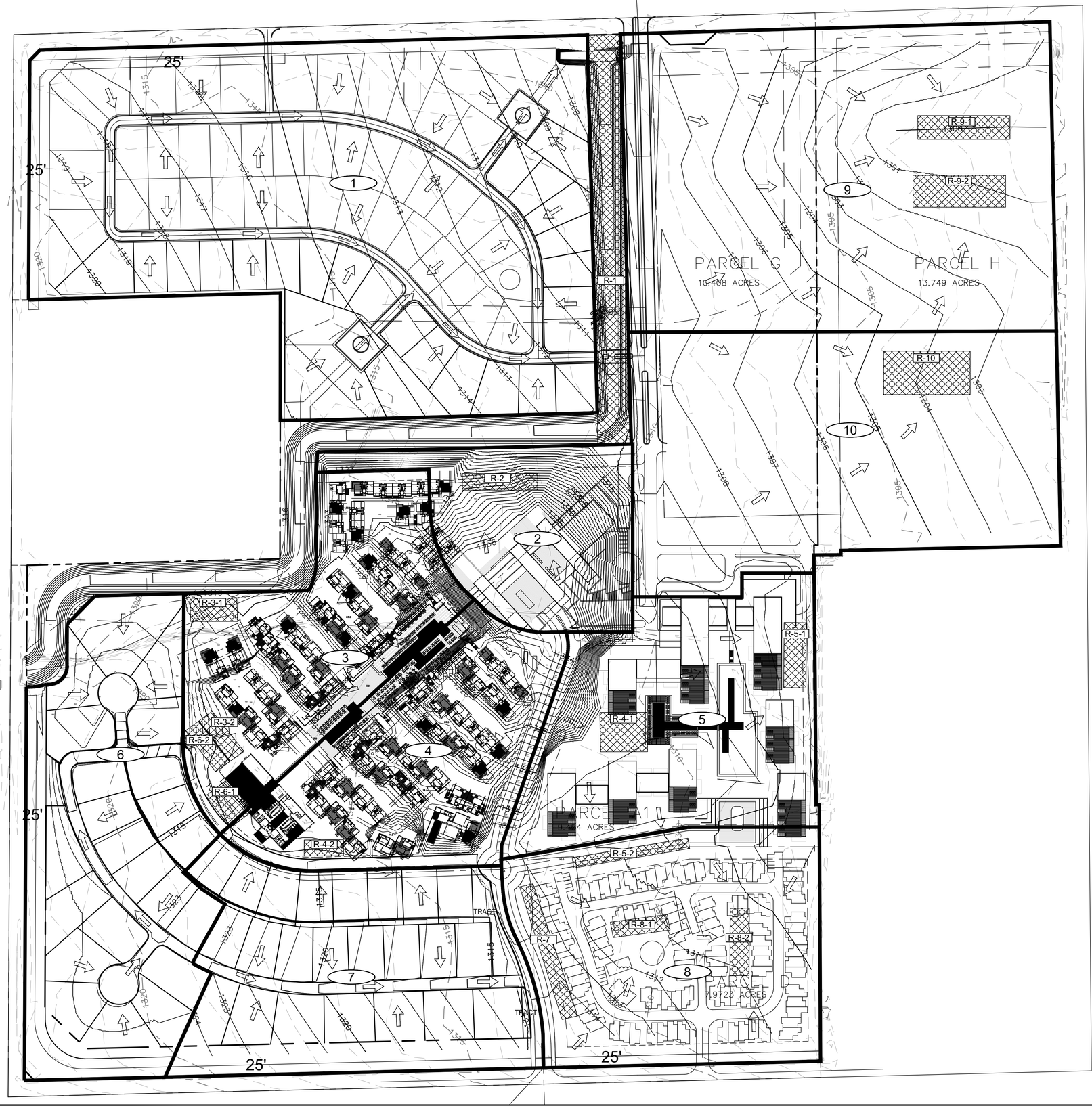
2D MAXIMUM WATER DEPTHS EXISTING - NO BLOCKAGES

JOB NO. 0268901

EXHIBIT 10

PLATE 1

Drainage Map



Retention Area

Drainage Area

R-# Retention Identification

A-## Sub Basin Identification

Flow Arrows

120' 60' 0 120'

SCALE: 1" = 120'

N

Ritz Carlton Retention			
Drainage Area	Volume Required	Retention Basin	Volume Provided
1	3.56	R–1	3.56
R–1	0.32		
SubTotal	3.56		3.36
2	0.57	R–2	1.00
SubTotal	0.57		1.00
		R–3–1	0.83
3	1.13	R–3–2	0.69
SubTotal	1.13		1.52
		R–4–1	1.67
4	1.10	R–4–2	0.53
SubTotal	1.10		2.20
		R–5–1	0.87
5	1.35	R–5–2	1.05
SubTotal	1.35		1.92
		R–6–1	0.72
6	1.38	R–6–2	0.69
SubTotal	1.38		1.41
7	1.23	R–7	1.24
SubTotal	1.23		1.24
		R–8–1	0.74
8	1.64	R–8–2	0.90
SubTotal	1.64		1.64
		R–9–1	1.64
9	2.71	R–9–2	2.07
SubTotal	2.71		3.71
10	2.08	R–10	2.71
SubTotal	2.08		2.71
Total	16.76	16 Basins	20.91

CVL CONSULTANTS
4550 North 12th Street
Phoenix, Arizona 85014
602-264-6831
www.cvlci.com

NO.	REVISION	REVISION DESCRIPTION	DATE
1		REVISION DESCRIPTION	MM/DD/YY
2		REVISION DESCRIPTION	MM/DD/YY
3		REVISION DESCRIPTION	MM/DD/YY
4		REVISION DESCRIPTION	MM/DD/YY

Coe & Van Loo Consultants, Inc.

Drainage Map

Ritz Carlton
Paradise Valley, ARIZONA

SHEET OF XX

CVL Contact: CONTACT
CVL Project #: PROJECT
CVL File #:

PROJECT NO. XXXXXXX

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

Printed By: EnriqueG Print Date: December 7, 2015 Filename: N:\01\0268901\Hydro\PDR\CADD\WB Drain.dwg

RITZ CARLTON PROPERTY
PARKING ANALYSIS

Northeast Corner of Section 10
Township 2 North, Range 4 East

Registered Professional Engineer (Civil)
CERTIFICATE NO.
35879
DAWN D.
CARTIER
Date Signed 10.14.15
ARIZONA, U.S.A.

Expires 3/31/2016

Prepared for:

Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, Arizona 85253

By:

CivTech, Inc.
8590 East Shea Boulevard
Suite 130
Scottsdale, Arizona 85350
(480) 659-4250

October 2015
CivTech Project # 15-360

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A parking demand analysis was conducted for the Ritz Carlton Resort ("Resort") and the surrounding Palmeraie mixed-use area to determine the number of parking spaces required to support the new resort hotel, amenities and retail area when fully utilized. These calculations determine the average parking requirements and the overall peak parking requirements for the area pursuant to the site plan revised in July 2015. A shared parking analysis was also completed to account for the changes in parking demand created by alternate uses within the Resort and retail areas including the hotel, restaurants, offices, event areas and recreation areas during various times of the day. The shared parking analysis for the resort was conducted using a shared parking methodology approved by the Town of Paradise Valley for two scenarios, Average Use and Peak Use for both Weekdays and Weekends, between the hours of 6:00 a.m. and 12:00 a.m. Shared parking for the Palmeraie development was calculated using the City of Scottsdale's approved shared parking methodology. This letter documents the findings of the analysis for the resort and retail portions of the Ritz Carlton. There are three other parcels within the development, Parcels B, C and D, which will be developed with residential land uses and are encouraged to provide parking consistent with the Town's code requirements.

EXECUTIVE SUMMARY

Shared parking calculations were performed for the Ritz Carlton Resort for the average utilization and the peak utilization. Average utilization of the resort requires 406 parking spaces while peak utilization requires 535 parking spaces. The current resort plan provides for 710 parking spaces which includes the required parking for the resort villas, an ownership product which can revert into the resort rental pool. A total of 390 parking spaces are provided adjacent to the resort and 320 parking spaces are provided adjacent to the villas and resort retail shops. 240 parking spaces are reserved for the resort villas leaving 470 parking spaces to be shared amongst the resort uses, 48 shared spaces are located adjacent to the resort retail. These spaces, along with miscellaneous spaces provided around the site, provide enough parking supply for the highest use during the non-peak season. **Table 1** provides a summary of the resort parking.

Table 1 – Resort Parking Summary

	Spaces
Shared Peak Parking Required	535
Shared Non-Peak Parking Required	406
Traditional Parking Provided	470
Valet Parking Provided	540

Additionally, to accommodate parking demand in excess of the highest peak hour calculated, a valet scenario has been established. The Ritz Carlton resort will operate with a full time mandatory valet service although traditional parking was considered in the report to evaluate a more conservative condition. Parking spaces shown in the plan are striped for traditional parking. The valet scenario considers the use of both the resort and resort villa parking areas.

An increase of 15 percent may be applied to the available parking when providing valet services, thus increasing the available parking to 540 spaces [(710 – 240) x 1.15]. With the valet, there would be a surplus of 5 parking spaces during the peak event. A valet service is required during the peak event to meet the parking demand.

Without shared parking, the Town of Paradise Valley SUP Guidelines indicate that 472 parking spaces are required during the average use period and that 621 parking spaces are required during the peak use period.

The proposed resort facility meets the parking requirements as determined by the Town of Paradise Valley's SUP Guidelines using a shared parking demand model.

Shared parking calculations were also prepared for the Palmeraie development using the shared parking model established by the City of Scottsdale. A total of 2,291 parking spaces are required for the Palmeraie development without consideration for shared parking. Using the City's shared parking model, a total of 1,876 parking spaces are required. The current plan for the Palmeraie indicates that 3,366 parking spaces will be provided. These values are summarized in **Table 2**.

Table 2 – Palmeraie Parking Summary

	Spaces
Shared Peak Parking Required	1,876
Parking Provided	3,366

A total of 3,366 parking spaces will be provided at the Palmeraie development which indicates that a surplus of as many as 1,490 spaces could be available for use by the Ritz Carlton. Both Palmeraie and Ritz Carlton have agreed to share these excess spaces in the case of large events at the Ritz Carlton Resort. Retail and office parking needs diminish greatly in the evening which is the typical peak for resort parking.

CONCLUSION

The parking provided by the Ritz Carlton Resort will accommodate the average resort utilization. During a peak event, the resort will provide a valet only scenario which will accommodate the required parking.

The adjacent Palmeraie development provides an opportunity to share some additional parking due to their symbiotic uses. The parking for a resort hotel typically peaks during an event which happens in the evening. Palmeraie will contain retail and some office uses. Parking spaces associated with office uses are typically available for other users after 5:00 PM. Retail parking tends to peak in the late afternoon and then steadily decrease through the evening with most retail stores closed by 9:00 PM. Palmeraie is currently showing excess parking of more than 1,000 spaces that could be shared with the Ritz Carlton development should the need arise. A shared parking with the Palmeraie and an agreement should be in place once operational.

Parking should be designed to meet the Town of Paradise Valley code and should meet all ADA requirements. Parking stall depth and width along with isle width should be design in accordance with Town standards. ADA accessible parking should be designed in a location convenient for resort entry. Although a valet option will be available for ADA patrons, ADA accessible parking will still be required.

PROPOSED DEVELOPMENT

This parking evaluation considers the effects of both the Ritz Carlton Resort and the Palmeraie Center. These two properties are adjacently located and will have cross access for shared parking.

Regular parking for the resort will be provided by two parking areas connected by internal driveways. The main parking area for the Resort as proposed will consist of 390 spaces. Approximately 320 additional parking spaces are located adjacent to the resort villas and the 30,000 square foot resort commercial use.

The Ritz Carlton development is proposed with a 200 room resort hotel and 120 villas including a spa, lodge, meeting facilities, gardens, outdoor function space, and retail. The residential component of the plan consists of 144 lots/units of low density single family residential and 100 units/lots of attached residences. The commercial component of the site within the Town limits is planned to consist of 151,000 square feet of retail/restaurant use and 200 attached residential dwelling units.

The adjacent Palmeraie development, located within the City limits of Scottsdale, will be cohesively designed with the retail portion of the Ritz Carlton. Palmeraie is located on the southwest corner of Scottsdale Road and Indian Bend Road. Palmeraie is a planned retail development consisting of approximately 300,000 SF of retail and restaurant land uses, a 175 room hotel and 235 resort hotel condominium units. There has been some discussion of allowing the City of Scottsdale to annex the retail portion of the Ritz Carlton plan. Therefore the parking analysis for the Palmeraie development has been evaluated using criteria from the City of Scottsdale. The current Palmeraie plan indicates that 3,366 spaced will be provided in the parking garage and surrounding surface parked areas.

Parking for the surrounding residences, as proposed in the Town of Paradise Valley *Draft October 2005 Special Use Permit (SUP) Guidelines*, which are separately “owned” components of the plan, will be self-contained.

RITZ CARLTON PARKING CALCULATION METHODOLOGY

Parking Generation

Parking demand was calculated using the rates provided by the Town of Paradise Valley SUP Guidelines. Square footage areas for various uses (i.e. restaurant, meeting rooms, etc.) and/or the number of units were based on a summary Resort program and corresponding site plan as shown within the Ritz Carlton SUP submittal dated July 2015. The Resort Summary Program is attached in Appendix A. Site plans for the Resort and for Palmeraie have been included in Appendix B. The following assumptions were made when generating parking for each use.

- Section 4 of the *Town of Paradise Valley Special Use Permit Guidelines* was used to determine the number of spaces required for the resort and uses located within and around the hotel.[1]

[1] Town of Paradise Valley Special Use Permit Guidelines Section 4 “Resorts”, DRAFT October 27, 2005

Each use within the Resort was placed into one of the six categories presented within Section 4 of the SUP Guidelines. Section 4b states that the *"requirements may be modified in conjunction with special use permit or major amendment approval based on information documenting overlapping usage of on-site facilities by guests or visitors and as contained in an approved traffic analysis."*

Parking Calculation

Parking was calculated for individual uses within the Resort using the rates documented in Section 4 of the SUP Guidelines. The gross parking required for each use was calculated. The gross parking was then prorated by assigning a percentage indicating the overlap from guests already staying within the resort ("onsite demand") vs. drawing new trips (vehicles) from non-guests ("offsite demand"). All parking for guest rooms and employees was determined to be completely "off-site". Parking generated by all other uses was assumed to be used by Resort occupants ("on-site") and non-Resort occupants ("off-site"). Therefore, overlap percentages were applied to these uses to account for the "on-site" occupants who will already be parked as part of the resort guest room rate or within the Ritz Carlton community housing. This occurrence is known as internal capture. The percentages applied to the uses were originally determined from data provided by Marriott International for their resort at Camelback Inn and a verification letter provided by The Ritz Carlton Hotel Company, LLC. In subsequent parking evaluations within the Town of Paradise Valley, the assumptions have been refined to reflect the character and demographics of a typical resort user.

The parking demand was calculated for both the average use and peak use of the hotel. The average use of the hotel would likely occur during the resort off-season. The number of occupied rooms during the off-season was assumed at full occupancy to maintain a conservative approach to these calculations. Peak demand calculations were prepared to provide a parking demand during the resorts peak season including events which would have a higher number of local users.

The net number of parking spaces for each use was summed to obtain the minimum *non-shared* parking requirements for the average and peak scenarios. The results of the calculations are presented in **Table 3**. Detailed calculations are attached in Appendix C.

Table 3 – Non-Shared Parking Spaces Required

Calculation Method	Parking Spaces	
	Average Use	Peak Use
Town of Paradise Valley SUP Guidelines	472	621

Shared Parking Analysis

For projects with a variety of land uses, the parking demand for each land use would peak at different hours. Therefore, the actual number of spaces needed at a given hour is less than cumulative parking demand. *Shared Parking* Urban Land Institute [ULI] describes shared parking as follows:

"Shared parking is defined as a parking space that can be used to serve two or more individual land uses without conflict or encroachment. The opportunity to implement shared parking is the result of two conditions:

- Variations in the peak accumulation of parked vehicles as the result of different activity patterns of adjacent or nearby land uses (by hour, by day, by season)
- Relationships among land use activities that result in people's attraction to two or more land uses on a single auto trip to a given area or development"

To determine the total number of shared parking spaces required between different land uses, a parking occupancy rate analysis was conducted. To calculate the total number of shared spaces required, the non-shared parking spaces (as previously calculated and shown in Table 3) are multiplied by the occupancy rate for that hour represented as a percentage of use. This analysis was completed using the distribution data as suggested by the Urban Land Institute's *Shared Parking*. ITE does not provide time of day data for a 'Leisure Hotel' or a 'Resort Hotel'.

Occupancy is dependent upon peak seasonal factors, days of the week, and time periods. Per the development code two scenarios were established, weekday and weekend. Each scenario looks at time periods beginning at 6:00 a.m. and ending at 12:00 a.m.

The "adjusted" net number of parking spaces required for each use during each time period is aggregated. The resultant is the required number of spaces for each time period. The shared parking demand required is determined by the greatest of the aggregate values calculated, weekday total or weekend total. The shared parking results are presented in **Table 4**. Detailed calculations are attached within Appendix D.

Table 4 – Shared Parking Spaces Required*

Scenario	Shared Parking Spaces	
	Weekday	Weekend
Average Use	387	406
Peak Use	535	535

**Shared totals do not include the 240 spaces required by the Resort Villas which will be valet parked in an independent lot.*

A total of 406 shared parking spaces are required for the Resort based on average utilization while 535 will be required during the peak utilization.

RESORT DESIGN AVERAGE WEEKDAY AND WEEKEND RESULTS

Using shared parking distributions, the average use parking demand for the resort is estimated to be 406 parked vehicles. Without shared parking, the Resort will require 472 parking spaces. The site plan for the resort currently shows 470 parking spaces available for shared parking (710 total spaces – 240 resort villa spaces) which indicates the resort has excess parking of 58 spaces. The peak demand period is in the weekend evening period, 7:00 p.m. – 8:00 p.m.

RESORT PEAK SEASON WEEKDAY AND WEEKEND RESULTS

During the peak season the resort will be fully utilized with full occupancy of the guest rooms and the ballrooms and event areas. A peak season parking calculation was prepared to account for the possibility that the users of the ballrooms and event areas could be different from the guests within the resort. To account for the possibility of a higher number of non-guest ("off-site") users, the ratios applied to the Guest Lawn and the Ballrooms were modified to allow for 50 percent on-site and 50 percent off-site use. The analysis was also prepared assuming that all ballroom and event areas would contain individual non-related groups during the same time period. This would require the resort to provide 535 shared parking spaces to accommodate the likelihood of a peak event. This is 67 spaces less than the provided parking as shown on the site plan.

RESORT VALET ONLY SCENARIO

Most Ritz Carlton Resorts operate on a valet only basis. The parking design in this location has been designed for self-parking with the option to switch to a valet only scenario as needed. Due to the advanced booking of hotel rooms and events which will take place in the ballrooms, the resort can easily determine when a valet only scenario must be used to accommodate the required parking. Discussions with Ritz Carlton operations indicate that the parking would begin the transition from traditional parking to valet-only parking 24-hours in advance of the peak event. The valet only scenario can be applied to achieve a higher rate of parking within the same field provided for self parking. On average, the parking rate achieved by a valet only scenario increases the number of spaces by 20 to 30 percent when planned. This evaluation assumes that an efficiency of 15 percent can be achieved since specific valet plans have not been created. The resort can self park 470 vehicles within the main parking areas and an additional 240 vehicles as required for the resort villas. This same area, when converted to a valet assist scenario would allow parking for a minimum of 540 cars [(710 total spaces – 240 resort villa spaces) x 1.15 efficiency)]. With the valet, there would be a surplus of 2 parking spaces. The valet only scenario provides more parking than that required by the peak event during the peak season.

Although it is not anticipated that any additional parking will be necessary to support the Ritz Carlton project, an agreement to park vehicles at the Palmeraie during the evenings and weekends, the peak usage of the resort, will provide in excess of 1,000 spaces in addition to the 540 spaces mentioned above.

This information has been summarized in **Table 5** below.

Table 5 – Peak Season Peak Event Resort Parking Summary

Calculation	Parking Required		Parking Provided	
Methodology	Gross	Shared	Traditional	Valet Assist
Town SUP Guidelines	621	535	470	540

PALMERAIE PARKING CALCULATION METHODOLOGY

Parking Generation

Parking demand calculations were generated separately for the Palmeraie development which will provide separate parking facilities from the Ritz Carlton Resort. It should be noted that a large portion of the proposed Palmeraie mix-use development is located within the City of Scottsdale limits. Therefore, parking rates and calculations for the Palmeraie development were computed using the City of Scottsdale parking requirements.

The City of Scottsdale stipulates the number of parking spaces required for various types of development. These parking requirements are outlined in *City of Scottsdale's Zoning Ordinance Appendix B*, *Article IX*. **Table 6** summarizes the City's required parking ratios by use according to the zoning ordinance.

Table 6 - City of Scottsdale Parking Demand by Land Use

Land Use	Space Requirement	
	Rate	Units
Office	1 space/300 SF	SF
Gym/Health and Wellness	1 space/200 SF	SF
Retail	1 space/300 SF	SF
Residential/Luxury Condos	1 space/DU	DU
Restaurant and Bars	1 space/120 SF	SF
Grocery Store/Gourmet Foods	1 space/300 SF	SF
Hotel	1.25 spaces/guest room	Room

Parking Calculation

Parking was calculated for individual uses within the Palmeraie development using the rates documented in Appendix B, Article IX. The gross parking required for each use was calculated. Internal capture within the site was not a consideration for the Palmeraie development.

The parking demand was calculated for the all of the uses within the Palmeraie development. The net number of parking spaces for each use was summed to obtain the minimum *non-shared* parking requirements.

The parking requirements outlined in **Table 6** were applied to the square footage for each land use within the Palmeraie development. **Table 7** summarizes the unshared parking needs for the Palmeraie development. Detailed calculations are attached in Appendix E.

Table 7- Palmeraie Required Unadjusted Parking (Not Shared)

Land Use	Intensity		Space Requirement		Parking Required
Office	102,031	SF	300	S.F./space	340
Gym/Health and Wellness	25,523	SF	200	S.F./space	128
Retail	210,879	SF	300	S.F./space	703
Residential/Luxury Condos	487	DU	1	DU/space	487
Restaurant and Bars	53,491	SF	120	S.F./space	446
Grocery Store/Gourmet Foods	18,149	SF	300	S.F./space	60
Hotel	159	Room	1.25	Room/space	127
				TOTAL	**2,291**

The total number of spaces required by the City of Scottsdale Zoning Ordinance without consideration for shared parking by time of day is calculated at 2,291.

Shared Parking Analysis

Similar to the shared parking analysis prepared for the Ritz Carlton Resort, a separate shared parking analysis was prepared for the Palmeraie development. The City of Scottsdale has established utilization percentages for both weekday and weekend operation. Each day is divided into three blocks of time, 12am-7am, 7am-6pm and 6pm-12am. Table 8 displays the utilization percentages as shown within the City of Scottsdale's Parking Code.

Table 8 - City of Scottsdale Parking Utilization by Use

General Land Use Classification	Weekdays			Weekends		
	12AM - 7AM	7AM - 6PM	6PM - 12AM	12AM - 7AM	7AM - 6PM	6PM - 12AM
Office	5%	100%	5%	0%	60%	10%
Gym/Office Health and Wellness	5%	100%	5%	0%	60%	10%
Retail	0%	100%	80%	0%	100%	60%
Residential/Luxury Condos	100%	55%	85%	100%	65%	75%
Restaurant and Bars	50%	70%	100%	45%	70%	100%
Grocery Store/Gourmet Foods	50%	70%	100%	45%	70%	100%
Hotel	100%	65%	90%	100%	65%	80%

The total parking required for each use as shown in Table 7 was factored for each of the six categories shown in Table 8. Table 9 displays the resulting parking required for each major land use by day of the week and time of day.

Table 9 - City of Scottsdale Shared Parking Calculation

General Land Use Classification	Weekdays			Weekends		
	12AM - 7AM	7AM - 6PM	6PM - 12AM	12AM - 7AM	7AM - 6PM	6PM - 12AM
Office	17	340	17	0	204	34
Gym/Office Health and Wellness	6	128	6	0	77	13
Retail	0	703	562	0	703	422
Residential/Luxury Condos	487	268	414	487	317	365
Restaurant and Bars	223	312	446	201	312	446
Grocery Store/Gourmet Foods	30	42	60	27	42	60
Hotel	127	83	114	127	83	102
TOTAL	891	**1876**	1620	842	1737	1442

PALMERAIE PARKING RESULTS

Using the City of Scottsdale shared parking utilization by time of day and day of the week; the parking demand for the mixed-use retail area is estimated to be 1,876 parked vehicles. Without shared parking, Palmeraie will require 2,291 parking spaces. The site plan for Palmeraie currently shows 3,366 parking spaces available for parking which indicates the mixed-use area could have an excess of as many as 1,490 spaces. The peak demand period is in the weekday period, 7:00 a.m. – 6:00 p.m.

APPENDIX

APPENDIX A
RESORT SUMMARY PROGRAM

THE RITZ-CARLRON PARADISE VALLEY
Paradise Valley, Arizona

Facilities Criteria Summary
Date: March 10, 2015

		PROPOSED CRITERIA			Allocation	
					% of Total	Gross Area/Key
GUESTROOMS	**Bays**	**Keys**	**N.S.F.**	**G.S.F.**		
King	1	50	509	540		
Double Queen	1	30	559	592		
Club King	1	25	509	540		
Club Double	1	15	559	592		
Executive Suite	2	76	1,019	1,080		
Deluxe Suite	3	3	1,528	1,620		
Presidential Suite	5	1	2,547	2,700		
Club Lounge	5	yes	2,547	2,700		
Hotel Keys:		**200**				
TOTAL BAYS	**291**					
GROSS BAY SIZE						
King Bay Size			16' x 33.75'			
Doubles Bay Size			16' x 37.00'			
% of Rooms with Balconies / Patios		100%	16' x 6'			
SPA / FITNESS CENTER / RECREATION			**N.S.F.**	**G.S.F.**		
Spa	10 - Treatment Rooms		7,500	10,000	3.59%	50.0
Fitness Center / Motion Studio			1,750	2,500	0.90%	12.5
Early Arrival / Late Departure Facility			0	0		
Kid's Center			0	0		
Teen Center			0	0		
Library, Guest PC stations			0	0		
Indoor Pool			0	0		
Outdoor Pool		2,400				
Outdoor Pool Deck Area		5,780				
RETAIL			**N.S.F.**	**G.S.F.**		
Sundries Shop			375	400		
Signature Shop			0	0		
Resort Retail			0	0		
Residential Sales Office			0	0		
Leased Retail						
FOOD & BEVERAGE			**N.S.F.**	**G.S.F.**		
FOOD:		Seats				
Casual Restaurant		80	2,660	2,830		
Private Rooms		0	0	0		
Terrace		40		exterior		
Pool Restaurant		60	1,690	1,800		
Private Rooms		14	390	410		
Terrace		40		exterior		
SUBTOTAL FOOD:		234		5,040	1.81%	25.2
BEVERAGE:						
Lobby Lounge		50	1,970	2,100		
Lobby Lounge Bar		16	730	780		
Terrace		0		exterior		
Pool Bar		20	660	700		
SUBTOTAL BEVERAGE:		86		3,580	1.29%	17.9
FUNCTION			**N.S.F.**	**G.S.F.**		
Main Ballroom			10,000	11,300		
Junior Ballroom			5,500	6,500		
Board Room			0	0		
Meeting Rooms			2,700	3,200		
Function Pavilion			0	0		
TOTAL FUNCTION SPACE			18,200	21,000	7.54%	105.0
Business Center			282	300		
Wedding Showroom			705	750		
Meeting Planner Office			113	120		

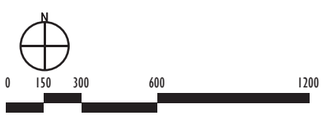
AREA REQUIREMENTS INCLUDING SUPPORT		**PROPOSED CRITERIA**	Allocation	
		G.S.F.	% of Total	Gross Area/Key
2	PUBLIC ENTRY	2,955	1.06%	14.8
3	FOOD & BEVERAGE	9,040	3.25%	45.2
4	RECREATION	13,100	4.70%	65.5
5	RETAIL	400	0.14%	2.0
6	FUNCTION SPACE	34,655	12.44%	173.3
7A	GUESTROOMS	156,780	56.30%	783.9
7B	GUESTROOM SUPPORT	15,600	5.60%	78.0
7C	CLUB LOUNGE	2,700	0.97%	13.5
8A	ADMINISTRATION	3,580	1.29%	17.9
8B	EMPLOYEE FACILITIES	4,290	1.54%	21.5
9	ENGINEERING / MAINTENANCE	2,160	0.78%	10.8
10	FOOD SERVICE	10,000	3.59%	50.0
11A	LAUNDRY	2,130	0.76%	10.7
11B	HOUSEKEEPING	990	0.36%	5.0
12	ELEVATOR / ESCALATOR	800	0.29%	4.0
13	HOTEL SUPPORT SYSTEMS	540	0.19%	2.7
14	FIRE PROTECTION / LIFE SAFETY	110	0.04%	0.6
15	MECHANICAL / ELECTRICAL / PLUMBING	4,490	1.61%	22.5
16E	LOSS PREVENTION	270	0.10%	1.4
	PUBLIC & SUPPORT CIRCULATION	13,891	4.99%	69.5
	TOTAL HOTEL	**278,481**	**100.00%**	**1,392**
	ADDITIONAL FACILITIES	0	0.00%	0
	TOTAL	**278,481**	**100.00%**	**1,392**

PARKING REQUIREMENTS: 446 STALLS

APPENDIX B
SITE PLANS

MASTER PLAN

Area	Description
A | A1	Ritz-Carlton Hotel and Villas
B	Single Family Resort Branded Residential
C	Single Family Ritz-Carlton Branded Residential
D	Resort Related Attached Residences
E	Palmeraie Resort Related Mixed Use



CIVTECH, INC
Traffic Engineering
10605 N Hayden Road | Ste 140
Scottsdale, AZ 85260-5595
480.659.4250
contact: Dawn Carter

CVL CONSULTANTS
Civil, Landscape, Planning, & Survey
4550 N 12th St
Phoenix, AZ 85014
602.264.6831
contact: Ryan Weed

MASON ARCHITECTS
Architecture & Master Planning
2995 Woodside Rd | Ste 400
Woodside, CA 94062
650.851.8810
contact: Peter Mason

NELSEN PARTNERS
Mixed-Use Architecture
15210 N Scottsdale Rd | Ste 300
Scottsdale, AZ 85254
480.949.6800
contact: George A Melara

WITHEY MORRIS, PLC
Land Use & Zoning Attorney
2525 E Arizona Biltmore Cir | Ste A-212
Phoenix, Arizona 85016
602.230.0600
contact: Jason Morris

FIVE STAR DEVELOPMENT

The Ritz-Carlton Resort

Paradise Valley Special Use Permit Application
July 30, 2015

THE RITZ-CARLTON®

MASTER PLAN

Land Use Plan

IV-1.a

APPENDIX C
NON SHARED PARKING CALCULATIONS

ATTACHMENT C-1
AVERAGE USE NON-SHARED PARKING
INCLUDING INTERNAL CAPTURE

Ritz Carlton Parking Analysis 10/08/15

SUP Guideline		SUP Guideline Parking Requirement	Use	Qty.	Unit	Equivalent Sq Ft	Gross Parking Required	Guest	Non-Guest	Net Parking Required
Resort										
i.	1.2	space/guest unit	Resort Casitas	200	keys	156,780	240	0%	100%	240
ii.	2	space/dwelling unit	Resort Villas	120	units	0	240	0%	100%	240
iii(a).	1	space/2 seats (dining area) in restaurants (interior)	Café	80	seats	9,040	40	75%	25%	10
iii(a).	1	space/2 seats (dining area) in restaurants (interior)	Lounge, Deli & Pool Bar	140	seats		70	75%	25%	18
iii(b).	1	space/2 seats (dining area) in restaurants (exterior)	Café	40	seats		20	75%	25%	5
iii(b).	1	space/2 seats (dining area) in restaurants (exterior)	Lounge, Deli & Pool Bar	60	seats		30	75%	25%	8
iv.	1	space/50sf meeting rooms, auditoriums or group assembly (interior)	Ballroom, Boardroom, Mtg. Room	18200	sf	20,270	364	75%	25%	91
***iv.**	1	space/50sf meeting rooms, auditoriums or group assembly (exterior)	Function Lawn	10000	sf	10,000	200	75%	25%	50
iv.	1	space/2 people, auditoriums or group assembly (exterior)	Wedding Gazebo(3)	0	people	0	0	75%	25%	0
(1)**v.**	1	space/300sf net sales areas in retail establishments	Retail - Public	23,363	sf	33,375	78	90%	10%	8
(2)**vi(a).**	1	space/300sf net occupied space in office & service establishments	Office/Service - Spa	7500	sf	10,000	25	90%	10%	3
vi(b).	1	space/300sf net occupied space in office & service establishments	Office/Service - Fitness Center	1750	sf	2,500	6	100%	0%	0
vi(c).	1	space/300sf net occupied space in office & service establishments	Office/Service - Ritz Kids	0	sf	0	0	100%	0%	0
vi(d).	1	space/300sf net occupied space in office & service establishments	Offices, Function Support & Front D	11475	sf	23,150	39	0%	100%	39
		Other areas not listed in guidelines (circulation, storage, etc.)	Other	44950	sf	44,950	0			0
					SUBTOTAL	**310,065**	**1352**			**712**

GROSS TOTAL	**310,065**	**1352**	**NET TOTAL**	**712**
		NON RESIDENTIAL TOTAL		**472**

Total Guest Room and Employee Parking (Hotel)	279
Total Restaurant Parking	41
Total Conference/Convention	141
Total Spa	3
Total Retail	8
Total Residential Parking	240
	712

(1) The square footage shown is 75 percent of the gross floor area to assume the usable floor space.
(2) The square footage shown is 70 percent of the gross floor area to assume the usable floor space.
(3) Wedding Gazebo users will be the same as those within other function space therefore their parking requirement was omitted to avoid double counting.

ATTACHMENT C-2
PEAK USE NON-SHARED PARKING
INCLUDING INTERNAL CAPTURE

Ritz Carlton Parking Analysis 10/08/15

SUP Guideline		SUP Guideline Parking Requirement	Use	Qty.	Unit	Equivalent Sq Ft	Gross Parking Required	Guest	Non-Guest	Net Parking Required
Resort										
i.	1.2	space/guest unit	Resort Casitas	200	keys	156,780	240	0%	100%	240
ii.	2	space/dwelling unit	Resort Villas	120	units	0	240	0%	100%	240
iii(a).	1	space/2 seats (dining area) in restaurants (interior)	Café	80	seats	9,040	40	75%	25%	10
iii(a).	1	space/2 seats (dining area) in restaurants (interior)	Lounge, Deli & Pool Bar	140	seats		70	75%	25%	18
iii(b).	1	space/2 seats (dining area) in restaurants (exterior)	Café	40	seats		20	75%	25%	5
iii(b).	1	space/2 seats (dining area) in restaurants (exterior)	Lounge, Deli & Pool Bar	60	seats		30	75%	25%	8
iv.	1	space/50sf meeting rooms, auditoriums or group assembly (interior)	Ballroom, Boardroom, Mtg. Room	18,200	sf	20,270	364	50%	50%	182
***iv.**	1	space/50sf meeting rooms, auditoriums or group assembly (exterior)	Function Lawn	10,000	sf	10,000	200	50%	50%	100
iv.	1	space/2 people, auditoriums or group assembly (exterior)	Wedding Gazebo(3)	0	people	0	0	50%	50%	0
(1)**v.**	1	space/300sf net sales areas in retail establishments	Retail - Public	23,363	sf	33,375	78	80%	20%	16
(2)**vi(a).**	1	space/300sf net occupied space in office & service establishments	Office/Service - Spa	7,500	sf	10,000	25	90%	10%	3
vi(b).	1	space/300sf net occupied space in office & service establishments	Office/Service - Fitness Center	1,750	sf	2,500	6	100%	0%	0
vi(c).	1	space/300sf net occupied space in office & service establishments	Office/Service - Ritz Kids	0	sf	0	0	100%	0%	0
vi(d).	1	space/300sf net occupied space in office & service establishments	Offices, Function Support & Front D	11,475	sf	23,150	39	0%	100%	39
		Other areas not listed in guidelines (circulation, storage, etc.)	Other	44,950	sf	44,950	0			0
					SUBTOTAL	**310,065**	**1352**			**861**

GROSS TOTAL	**310,065**	**1352**	**NET TOTAL**	**861**
		NON RESIDENTIAL TOTAL		**621**

Total Guest Room and Employee Parking (Hotel)	279
Total Restaurant Parking	41
Total Conference/Convention	282
Total Spa	3
Total Retail	16
Total Residential Parking	240
	861

(1) The square footage shown is 70 percent of the gross floor area to assume the usable floor space.
(2) The square footage shown is 75 percent of the gross floor area to assume the usable floor space.
(3) Wedding Gazebo users will be the same as those within other function space therefore their parking requirement was omitted to avoid double counting.

APPENDIX D
SHARED PARKING CALCULATIONS

ATTACHMENT D-1

AVERAGE USE SHARED PARKING CALCULATIONS

WEEKEND

	Ritz Carlton														
Land Use	**Resort Guest Rooms**		**Resort Employees**		**Restaurant**		**Conference**		**Spa**		**Retail**		**Residential**		
Gross Size	200 Rooms		25,650 SF		320 Seats		28,200 SF		7,500 SF		33,375 SF		120 Units		
Percent Adjustment	None		52%		70%		None		None		70%		None		
Net Size	200 Rooms		13,225 SF		320 Seats		28,200 SF		7,500 SF		23,363 SF		120 Units		**SHARED**
Parking Rate	1.2 /Room		1 /300 SF		1 /2 Seats		1 /50 SF		1 /300 SF		1 /300 SF		2 /Unit		**PARKING**
Req-d Spaces	240		39		41		141		3		8		240		**DEMAND**
Adjustments	None		w/ 48% for non-usable space		w/ 25% Non guest		w/ 25% Non-guest (ballroom) & 25% Non-guest (Lawn)		w/ 10% Non-guest		w/ 30% BOH and 10% Non-guest		None		
Time of Day	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**TOTAL SPACES**
6:00 AM	95%	228	5%	2	20%	9	0%	0	5%	1	0%	0	0%	0	240
7:00 AM	95%	228	30%	12	20%	9	0%	0	10%	1	3%	1	0%	0	251
8:00 AM	90%	216	90%	36	20%	9	50%	71	40%	2	10%	1	0%	0	335
9:00 AM	80%	192	90%	36	20%	9	100%	141	55%	2	30%	3	0%	0	383
10:00 AM	70%	168	100%	39	20%	9	100%	141	75%	3	45%	4	0%	0	364
11:00 AM	70%	168	100%	39	30%	13	100%	141	90%	3	70%	6	0%	0	370
12:00 PM	65%	156	100%	39	30%	13	100%	141	100%	3	85%	7	0%	0	359
1:00 PM	65%	156	100%	39	45%	19	100%	141	100%	3	95%	8	0%	0	366
2:00 PM	70%	168	100%	39	45%	19	100%	141	100%	3	100%	8	0%	0	378
3:00 PM	70%	168	100%	39	45%	19	100%	141	100%	3	100%	8	0%	0	378
4:00 PM	75%	180	90%	36	45%	19	100%	141	85%	3	90%	8	0%	0	387
5:00 PM	80%	192	75%	30	60%	25	80%	113	65%	2	75%	6	0%	0	368
6:00 PM	85%	204	60%	24	90%	37	80%	113	35%	2	65%	6	0%	0	386
7:00 PM	85%	204	55%	22	95%	39	80%	113	15%	1	10%	1	0%	0	380
8:00 PM	90%	216	55%	22	100%	41	80%	113	10%	1	10%	1	0%	0	394
9:00 PM	95%	228	55%	22	100%	41	80%	113	5%	1	10%	1	0%	0	406
10:00 PM	95%	228	45%	18	40%	17	25%	36	0%	0	0%	0	0%	0	299
11:00 PM	100%	240	45%	18	20%	9	0%	0	0%	0	0%	0	0%	0	267
MIDNIGHT	100%	240	30%	12	0%	0	0%	0	0%	0	0%	0	0%	0	252
Number of Parking Spaces With Shared Parking for Ritz Carlton															**406**
Number of Non-Shared Parking Spaces Required by City Code for Ritz Carlton															**472**

ATTACHMENT D-2

AVERAGE USE SHARED PARKING CALCULATIONS

WEEKDAY

Land Use	Ritz Carlton														SHARED PARKING DEMAND
	Resort Guest Rooms		Resort Employees		Restaurant		Conference		Spa		Retail		Residential		
Gross Size	200 Rooms		25,650 SF		320 Seats		28,200 SF		7,500 SF		33,375 SF		120 Units		
Percent Adjustment	None		52%		None		None		None		None		None		
Net Size	200 Rooms		13,225 SF		320 Seats		320 SF		7,500 SF		23,363 SF		120 Units		
Parking Rate	1.2 /Room		1 /300 SF		1 /2 Seats		1 /50 SF		1 /300 SF		1 /300 SF		2 /Unit		
Req-d Spaces	240		39		41		141		3		8		240		
Adjustments	None		w/ 48% for non-usable space		W / 25% Non guest		w/ 25% Non-guest (ballroom) & 25% Non-guest (Lawn)		w/ 10% Non-guest		w/ 30% BOH and 10% Non-guest		None		
Time of Day	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**TOTAL SPACES**
6:00 AM	95%	228	5%	2	20%	9	0%	0	5%	1	0%	0	0%	0	240
7:00 AM	95%	228	30%	12	20%	9	0%	0	10%	1	3%	1	0%	0	251
8:00 AM	90%	216	90%	36	20%	9	50%	71	40%	2	10%	1	0%	0	335
9:00 AM	80%	192	90%	36	20%	9	100%	141	55%	2	30%	3	0%	0	383
10:00 AM	70%	168	100%	39	20%	9	100%	141	75%	3	45%	4	0%	0	364
11:00 AM	70%	168	100%	39	30%	13	100%	141	90%	3	73%	6	0%	0	370
12:00 PM	65%	156	100%	39	30%	13	100%	141	100%	3	85%	7	0%	0	359
1:00 PM	65%	156	100%	39	45%	19	100%	141	100%	3	95%	8	0%	0	366
2:00 PM	70%	168	100%	39	45%	19	100%	141	100%	3	100%	8	0%	0	378
3:00 PM	70%	168	100%	39	45%	19	100%	141	100%	3	100%	8	0%	0	378
4:00 PM	75%	180	90%	36	45%	19	100%	141	85%	3	90%	8	0%	0	387
5:00 PM	80%	192	70%	28	60%	25	75%	106	65%	2	75%	6	0%	0	359
6:00 PM	85%	204	40%	16	90%	37	75%	106	35%	2	65%	6	0%	0	371
7:00 PM	85%	204	20%	8	95%	39	50%	71	15%	1	10%	1	0%	0	324
8:00 PM	90%	216	20%	8	100%	41	25%	36	10%	1	10%	1	0%	0	303
9:00 PM	95%	228	20%	8	100%	41	25%	36	5%	1	10%	1	0%	0	315
10:00 PM	95%	228	20%	8	40%	17	25%	36	0%	0	0%	0	0%	0	289
11:00 PM	100%	240	10%	4	20%	9	0%	0	0%	0	0%	0	0%	0	253
MIDNIGHT	100%	240	5%	2	0%	0	0%	0	0%	0	0%	0	0%	0	242
Number of Parking Spaces With Shared Parking for Ritz Carlton															**387**
Number of Non-Shared Parking Spaces Required by City Code for Ritz Carlton															**472**

ATTACHMENT D-3
PEAK USE SHARED PARKING CALCULATIONS
WEEKEND

	Ritz Carlton														
Land Use	**Resort Guest Rooms**		**Resort Employees**		**Restaurant**		**Conference**		**Spa**		**Retail**		**Residential**		
Gross Size	200 Rooms		25,650 SF		320 Seats		28,200 SF		7,500 SF		33,375 SF		120 Units		
Percent Adjustment	None		52%		70%		None		None		70%		None		
Net Size	200 Rooms		13,225 SF		320 Seats		28,200 SF		7,500 SF		23,363 SF		120 Units		**SHARED PARKING DEMAND**
Parking Rate	1.2 /Room		1 /300 SF		1 /2 Seats		1 /50 SF		1 /300 SF		1 /300 SF		2 /Unit		
Req-d Spaces	240		39		41		282		3		16		240		
Adjustments	None		w/ 48% for non-usable space		w/ 25% Non guest		w/ 50% Non-guest (ballroom) & 50% Non-guest (Lawn)		w/ 10% Non-guest		w/ 30% BOH and 20% Non-guest		None		
Time of Day	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**TOTAL SPACES**
6:00 AM	95%	228	5%	2	20%	9	0%	0	5%	1	0%	0	0%	0	240
7:00 AM	95%	228	30%	12	20%	9	0%	0	10%	1	3%	1	0%	0	251
8:00 AM	90%	216	90%	36	20%	9	50%	141	40%	2	10%	2	0%	0	406
9:00 AM	80%	192	90%	36	20%	9	100%	282	55%	2	30%	5	0%	0	526
10:00 AM	70%	168	100%	39	20%	9	100%	282	75%	3	45%	8	0%	0	509
11:00 AM	70%	168	100%	39	30%	13	100%	282	90%	3	70%	12	0%	0	517
12:00 PM	65%	156	100%	39	30%	13	100%	282	100%	3	85%	14	0%	0	507
1:00 PM	65%	156	100%	39	45%	19	100%	282	100%	3	95%	16	0%	0	515
2:00 PM	70%	168	100%	39	45%	19	100%	282	100%	3	100%	16	0%	0	527
3:00 PM	70%	168	100%	39	45%	19	100%	282	100%	3	100%	16	0%	0	527
4:00 PM	75%	180	90%	36	45%	19	100%	282	85%	3	90%	15	0%	0	535
5:00 PM	80%	192	75%	30	60%	25	80%	226	65%	2	75%	12	0%	0	487
6:00 PM	85%	204	60%	24	90%	37	80%	226	35%	2	65%	11	0%	0	504
7:00 PM	85%	204	55%	22	95%	39	80%	226	15%	1	10%	2	0%	0	494
8:00 PM	90%	216	55%	22	100%	41	80%	226	10%	1	10%	2	0%	0	508
9:00 PM	95%	228	55%	22	100%	41	80%	226	5%	1	10%	2	0%	0	520
10:00 PM	95%	228	45%	18	40%	17	25%	71	0%	0	0%	0	0%	0	334
11:00 PM	100%	240	45%	18	20%	9	0%	0	0%	0	0%	0	0%	0	267
MIDNIGHT	100%	240	30%	12	0%	0	0%	0	0%	0	0%	0	0%	0	252
Number of Parking Spaces With Shared Parking for Ritz Carlton															**535**
Number of Non-Shared Parking Spaces Required by City Code for Ritz Carlton															**621**

ATTACHMENT D-4
PEAK USE SHARED PARKING CALCULATIONS
WEEKDAY

Land Use	Ritz Carlton														SHARED PARKING DEMAND
	Resort Guest Rooms		Resort Employees		Restaurant		Conference		Spa		Retail		Residential		
Gross Size	200 Rooms		25,650 SF		320 Seats		28,200 SF		7,500 SF		33,375 SF		120 Units		
Percent Adjustment	None		52%		None		None		None		None		None		
Net Size	200 Rooms		13,225 SF		320 Seats		320 SF		7,500 SF		23,363 SF		120 Units		
Parking Rate	1.2 /Room		1 /300 SF		1 /2 Seats		1 /50 SF		1 /300 SF		1 /300 SF		2 /Unit		
Req-d Spaces	240		39		41		282		3		16		240		
Adjustments	None		w/ 48% for non-usable space		W / 25% Non guest		w/ 50% Non-guest (ballroom) & 50% Non-guest (Lawn)		w/ 10% Non-guest		w/ 30% BOH and 20% Non-guest		None		
Time of Day	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**% OF PEAK**	**# OF SPC**	**TOTAL SPACES**
6:00 AM	95%	228	5%	2	20%	9	0%	0	5%	1	0%	0	0%	0	240
7:00 AM	95%	228	30%	12	20%	9	0%	0	10%	1	3%	1	0%	0	251
8:00 AM	90%	216	90%	36	20%	9	50%	141	40%	2	10%	2	0%	0	406
9:00 AM	80%	192	90%	36	20%	9	100%	282	55%	2	30%	5	0%	0	526
10:00 AM	70%	168	100%	39	20%	9	100%	282	75%	3	45%	8	0%	0	509
11:00 AM	70%	168	100%	39	30%	13	100%	282	90%	3	73%	12	0%	0	517
12:00 PM	65%	156	100%	39	30%	13	100%	282	100%	3	85%	14	0%	0	507
1:00 PM	65%	156	100%	39	45%	19	100%	282	100%	3	95%	16	0%	0	515
2:00 PM	70%	168	100%	39	45%	19	100%	282	100%	3	100%	16	0%	0	527
3:00 PM	70%	168	100%	39	45%	19	100%	282	100%	3	100%	16	0%	0	527
4:00 PM	75%	180	90%	36	45%	19	100%	282	85%	3	90%	15	0%	0	535
5:00 PM	80%	192	70%	28	60%	25	75%	212	65%	2	75%	12	0%	0	471
6:00 PM	85%	204	40%	16	90%	37	75%	212	35%	2	65%	11	0%	0	482
7:00 PM	85%	204	20%	8	95%	39	50%	141	15%	1	10%	2	0%	0	395
8:00 PM	90%	216	20%	8	100%	41	25%	71	10%	1	10%	2	0%	0	339
9:00 PM	95%	228	20%	8	100%	41	25%	71	5%	1	10%	2	0%	0	351
10:00 PM	95%	228	20%	8	40%	17	25%	71	0%	0	0%	0	0%	0	324
11:00 PM	100%	240	10%	4	20%	9	0%	0	0%	0	0%	0	0%	0	253
MIDNIGHT	100%	240	5%	2	0%	0	0%	0	0%	0	0%	0	0%	0	242
Number of Parking Spaces With Shared Parking for Ritz Carlton															**535**
Number of Non-Shared Parking Spaces Required by City Code for Ritz Carlton															**621**

APPENDIX E
CITY OF SCOTTSDALE – PALMERAIE PARKING CALCULATIONS

General Land Use Classification	COS Parking Rate	Total	Units	Parking Calculations	Weekdays 12AM - 7AM	Weekdays 7AM - 6PM	Weekdays 6PM - 12AM	Weekends 12AM - 7AM	Weekends 7AM - 6PM	Weekends 6PM - 12AM	Weekdays 12AM - 7AM	Weekdays 7AM - 6PM	Weekdays 6PM - 12AM	Weekends 12AM - 7AM	Weekends 7AM - 6PM	Weekends 6PM - 12AM
Office	1 space/300 SF	102,031	SF	340	5%	100%	5%	0%	60%	10%	17	340	17	0	204	34
Gym/Office Health and Wellness	1 space/200 SF	25,523	SF	128	5%	100%	5%	0%	60%	10%	6	128	6	0	77	13
Retail	1 space/300 SF	210,879	SF	703	0%	100%	80%	0%	100%	60%	0	703	562	0	703	422
Residential/Luxury Condos	1 space/DU	487	DU	487	100%	55%	85%	100%	65%	75%	487	268	414	487	317	365
Restaurant and Bars	1 space/120 SF	53,491	SF	446	50%	70%	100%	45%	70%	100%	223	312	446	201	312	446
Grocery Store/Gourmet Foods	1 space/300 SF	18,149	SF	60	50%	70%	100%	45%	70%	100%	30	42	60	27	42	60
Hotel	1.25 spaces/guest room	159	Room	127	100%	65%	90%	100%	65%	80%	127	83	114	127	83	102
TOTAL				**2,291**							891	**1876**	1620	842	1737	1442

Ritz Carlton Resort

Master Traffic Impact Analysis

Section 10, Township 2 North,
Range 4 East
Paradise Valley, AZ

November 2015
Project No. 15-360

Prepared For:
Five Star Development
6720 North Scottsdale Road
Suite 130
Scottsdale, Arizona 85253

For Submittal to:
Town of Paradise Valley

Prepared By:

CivTech

10605 North Hayden Road
Suite 140
Scottsdale, Arizona 85260
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RITZ CARLTON RESORT
MASTER TRAFFIC IMPACT ANALYSIS

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Paradise Valley, AZ

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Registered Professional Engineer (Civil)
CERTIFICATE NO. 35879
DAWN D. CARTIER
Date Signed 11/04/15
ARIZONA, U.S.A.
expires 03-31-2016

November 2015

CivTech Project No: 15-360

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EXECUTIVE SUMMARY

This report documents a traffic impact analysis performed for a mixed use development consisting of a resort, residential and commercial land uses. The proposed Ritz Carlton Resort is located on ±105.9 acres north of Lincoln Drive, south of Indian Bend Road, east of Mockingbird Lane and west of Scottsdale Road. The related Palmeraie development within the City of Scottsdale limits is located on ±17 acres on the southwest corner of Scottsdale Road and Indian Bend Road and will compliment Parcel E of the proposed site.

CivTech Inc. has been retained by Five Star Development to perform the traffic impact analysis for the proposed Ritz Carlton Resort. The site was previously prepared and approved for a mixed use plan in 2007. This report represents the second submittal which addresses comments made on the previous submittal. The Towns comments and comment responses are provided in **Appendix A**.

The development is proposed with a 200 room resort hotel and 120 villas including a spa, lodge, meeting facilities, gardens, outdoor function space, and retail. The residential component of the plan consists of approximately 114 lots/units of low density single family residential and 100 units/lots of attached residences. The commercial component of the site is planned to consist of approximately 107,000 square feet of retail/restaurant use, 44,000 square feet of office and 230 attached residential dwelling units. The site is planned to provide four (4) access points along Indian Bend Road, three (3) along Scottsdale Road (in which one (1) of the three (3) access points will be a signalized shared driveway with the Spectrum development), and one (1) access point along Lincoln Drive aligning with the Quail Run intersection.

The purpose of this study is to address traffic and transportation impacts of the proposed development on the surrounding streets and intersections. This traffic impact analysis was prepared based on criteria set forth during a scoping meeting with staff from the Town of Paradise Valley utilizing the original TIA, the Traffic Impact and Mitigation Measure guidelines from the City of Scottsdale and public input received during the planning effort in 2007, and comments received on the previous submittals. The specific objectives of the study are:

1. To evaluate lane requirements on all existing roadways and at all existing intersections within the study area.
2. To determine future level of service for all proposed major intersections within the study area and recommend any capacity related improvements.
3. To determine necessary lane configurations at all major intersections within the proposed development to provide acceptable future levels of service.
4. To evaluate the need for future traffic control changes within the proposed development.
5. To evaluate the need for auxiliary lanes at stop and signal controlled intersections.
6. To evaluate the need for deceleration lanes at each site access.

7. To assess any safety concerns on the existing roadways and provide options to ensure they are not intensified with an increase in traffic.

The following recommendations have been documented in this study:

General

- This study evaluates four (4) horizon years, opening year (2018), opening plus five (2023), opening plus ten (2028) and opening plus fifteen (2033). The future study horizon years were analyzed to ensure that future off-site impacts were constructed with the current plan.

- Per the collision data reviewed there are no major mitigation measures currently warranted within the vicinity of the site. It should be noted that the intersections of **Tatum Boulevard & Lincoln Drive** and **Scottsdale Road & Indian Bend Road** recorded a high number of rear-end crashes relative to crash type. Due to this occurrence, it is recommended that these intersections be further evaluated by the Town.

- The future lane configurations and traffic controls are depicted in **Figure 29** and **Figure 30**.

- The developer proposes signalizing the intersection of Quail Run Road and Lincoln Drive. The intersection is anticipated to exceed the peak hour signal warrant criteria in the 2018 opening year.

- Projected ADT are presented in **Table 19**. All major roadways within the study area are anticipated to have traffic volumes below the maximum roadway capacity thresholds upon full buildout of the proposed site. The background, site and available volume capacity on several roadway segments are depicted on **Figure 32**.

- An intersection site distance analysis was performed to set guidelines for establishing line of sight for the proposed development at major internal intersections. Using the guidelines set forth by A Policy on Geometric Design of Highways and Streets, **Table 21** was generated for each intersection created by a new site access point.

Roadway Improvements

- The developer will construct half-street improvements to Indian Bend Road from Scottsdale Road to approximately 600 feet to the west. This improvement will provide a two-way left-turn lane (TWLTL) on Indian Bend Road along the improved length. The remainder of Indian Bend Road is currently constructed at its ultimate condition.

- It is likely that the City of Scottsdale will require the addition of a second westbound through lane along Indian Bend Road. This determination will be made by the City of Scottsdale during their review of the Palmeraie TIMA.

- The developer will improve the intersection of Scottsdale Road and 6750 North. The west leg after improvements will consist of two (2) dedicated left-turn lanes, a dedicated right-turn lane and two (2) ingress lanes. The median within the south leg of the intersection will be modified and the northbound lanes restriped to provide two dedicated left-turn lanes and three (3) through lanes. An alternative improvement condition is proposed should the City of Scottsdale not allow dual northbound left turn lanes. Final geometry and mitigation is subject to approval by the City of Scottsdale. Improvements at this intersection could require the relocation of overhead improvements and other utilities.

- The developer proposes to signalize the intersection of Quail Run Road and Lincoln Drive, which will serve as the main entrance to the proposed Ritz Carlton Resort, by opening year 2018. Based on the signal warrant section within this report *2010 MUTCD* signal warrant criteria is met at the main Ritz Carlton entrance by opening year 2018. Signalization at this intersection will require removal of the nearest median (west of the intersection) and also require the developer to construct new medians.

- The developer has agreed to construct a westbound right-turn lane at the intersection of Lincoln Drive and Mockingbird Lane by opening year 2018. The installment of the westbound right-turn lane will improve the traffic characteristics of this intersection. This may require the relocation of the traffic signal and red light cameral on the affected corner.

- If right-of-way is available, the developer should construct a southbound right-turn lane at the intersection of Lincoln Drive and Mockingbird Lane. The installment of the southbound right-turn lane will improve the delay for southbound vehicles with the likely growth in traffic along Lincoln Drive. This will require relocation of the traffic signal on the affected corner.

- As part of planned regional improvements, the Town of Paradise Valley plans to install a raised median on Mockingbird Lane between Lincoln Drive and Northern Avenue between the financial years of 2018 and 2029. This improvement is not anticipated to cause major changes to current traffic patterns.

- The intersection of Mockingbird Lane and Indian Bend Road was evaluated as a one-way stop controlled intersection which continues to meet acceptable levels of service during the study horizon. Input from neighbors indicates a concern for increased delay at this intersection and a possible need to keep traffic flowing in all directions. Optional intersection treatments should be considered in the future.

- The traffic circle located at Intersection A should be evaluated for alternate pavement treatment. The existing pavers are difficult for a bicycle to negotiate.

- Indian Bend Road may require traffic calming elements to be installed between the traffic circle (Intersection A) and Mockingbird Lane if traffic from Palmeraie is prioritized to use Indian Bend Road. The determination to prioritize Indian Bend could be made by the City of Scottsdale during their review of the Palmeraie TIMA. Options for traffic calming that can be applied in areas with high pedestrian and bicycle volumes have been discussed within the TIA. Traffic calming options are discussed within the main body of this TIA.

Trip Generation

- Phase 1 (opening 2018) of the development is anticipated to generate 3,794 daily trips, of which 384 trips are during the AM peak hour and 353 trips are during the PM peak hour.

- Phase 2 (Buildout horizon year 2023) of the development is anticipated to generate a total of 14,710 daily trips, of which 729 trips are during the AM peak hour and 1,303 trips are during the PM peak hour. It was calculated that approximately 20% of total trips are expected to remain internal to the site. Considering the 20% internal capture reduction, 11,768 new daily trips are anticipated with 583 AM peak hour trips and 1,042 PM peak hour trips.

Intersection Capacity Analysis

- The results of the existing analysis summarized in **Table 4** indicate that all study intersections should operate at overall acceptable level of service (LOS D or better) with the exception of Scottsdale Road/Joshua Tree Road. The signalized intersections of Scottsdale Road/Indian Bend Road, Scottsdale Road/Joshua Tree Road, Scottsdale Road/6750 North, Tatum Boulevard/Lincoln Drive, Mockingbird Lane/Lincoln Drive, Scottsdale Road/Lincoln Drive, Scottsdale Road/McDonald Drive operate at acceptable LOS overall but have one or more movements that experience elevated delay during AM and/or PM peak hour.

    - The southbound left and westbound shared movements at the intersection of ***Scottsdale Road and Joshua Tree Road*** experience elevated delays during the peak hours. Elevated movement delays at stop controlled intersections with major roadways is not uncommon.

- The results of the future analyses summarized in **Table 15** indicate that all study intersections within the Town of Paradise Valley operate acceptably except for the intersection of Tatum Boulevard/Lincoln Drive. Within the City of Scottsdale, most study intersections along Scottsdale Road are anticipated to experience elevated delays in one or more movements during the AM and/or PM peak hour. These intersections are discussed along with recommended mitigation strategies below. Final mitigation and operating conditions of intersections within the jurisdiction of the City of Scottsdale will be subject to approval by the City of Scottsdale.

- The signalized intersection of site ***Tatum Boulevard and Lincoln Drive*** continues to experience elevated delays in some of its individual movements. Due to the general high traffic volumes using the intersection, right-of-way (ROW) acquisition would be required to mitigate the delay by installing additional through lanes. Lengthening the westbound right-turn lane is recommended if right-of-way can be acquired.

- All other study intersections within the Town of Paradise Valley are anticipated to operate acceptably. It may be noted that a couple movements at the intersections of Mockingbird Lane/Lincoln Drive and Quail Run Road/Lincoln Drive are anticipated to experience elevated delays during the peak hours; however, elevated delays for a few individual movements at are not uncommon at signalized intersections of major roadways. A southbound right-turn lane at the intersection of ***Mockingbird Lane and Lincoln Drive*** is recommended to reduce southbound delays if right of way can be acquired.

- Without mitigation, the signalized intersection of site ***Scottsdale Road and Indian Bend Road*** continues to experience elevated delays in some of its individual movements. Mitigation could include signal timing adjustments and reconfiguring the eastbound approach to provide two left turn lanes, one through lane and a shared through-right turn lane. The reconfiguration will not require additional pavement width at the intersection and may be completed with the half-street improvements on Indian Bend Road. After the recommended mitigation, the intersection is anticipated to operate at acceptable LOS.

- The improved condition of the intersection of ***Scottsdale Road and 6750 North*** is anticipated to operate acceptably overall. The improvements include constructing the north half of 6750 North, restriping the approach, modifying the Scottsdale Road median and striping to provide a second northbound left turn lane, add a northbound left-turn protected phase with an eastbound right-turn overlap, and appropriate signal phase timing adjustments. While the intersection improvements allow the intersection to operate acceptably overall, the eastbound left turn movement is anticipated to continue to operate with elevated delays during the peak hours. Final mitigation at this intersection will be determined by the City of Scottsdale.

    - The peak hour analyses of the alternative access conditions (only a single northbound left turn lane on Scottsdale Road approaching 6750 North) indicate that both the intersection of Scottsdale Road and Indian Bend Road and the intersection of Scottsdale Road and 6750 North are anticipated to operate with fairly similar LOS compared to the LOS anticipated with the proposed conditions.

- The two way stop controlled intersection of site ***Scottsdale Road and Joshua Tree Road*** continues to experience elevated delays. Poor LOS is not uncommon for stop controlled movements to major roadways. It should be noted that Synchro software does not allow HCM analysis left turn movements with 2-stages so actual delay may be better than analyzed. No mitigation is recommended.

- Without mitigation, the intersection of site ***Scottsdale Road and Lincoln Drive*** continues to experience elevated delays in some of its individual movements. It is recommended to adjust the signal timing and add right-turn overlap periods, where applicable. The mitigation will improve the delay such that the intersection may operate acceptably, although some individual movements are still anticipated to operate with elevated delays during the peak hours. Any phasing adjustments, including the additional of a right-turn overlap phase, will require the approval of the City of Scottsdale.

- The intersection of site ***Scottsdale Road and McDonald Drive*** continues to experience elevated delays in some of its individual movements. Due to the general high traffic volumes using the intersection, ROW acquisition would be required to mitigate the delays; however, this is not recommended as part of this study.

- The peak hour analyses of the alternative access conditions (only a single northbound left turn lane on Scottsdale Road approaching 6750 North) indicate that both the intersection of Scottsdale Road and Indian Bend Road and the intersection of Scottsdale Road and 6750 North are anticipated to operate with fairly similar LOS compared to the LOS anticipated with the proposed conditions. Final mitigation and operating conditions of intersections within the jurisdiction of the City of Scottsdale will be subject to approval by the City of Scottsdale.

- All intersections considered during the event scenario are anticipated to operate acceptably.

<u>Queue Storage Lengths</u>

- Turn lane storage recommendations for the 2033 horizon year are summarized in **Table 20**. The new turn lanes at the intersection of Quail Run Road and Lincoln Drive are recommended to be striped with 150-feet of storage each. The proposed northbound dual left-turn lanes at the intersection of Scottsdale Road and 6750 North are able to be constructed with approximately 115-feet of storage each, which is more storage than the Synchro analysis predicts. The southbound right-turn lane at the intersection is will need to be increased when the intersection is completed; 150 feet of storage is recommended.

- The westbound left-turn lane at the intersection of Mockingbird Lane and Lincoln Drive is projected to require additional storage due to residential traffic volumes. It is recommended that the turn lane be extended to provide 350-feet of storage which will require the removal of a center median. The new south- and westbound right-turn lanes at the intersection are recommended to provide 175 feet and 150 feet of storage, respectively.

- Should only a single northbound left turn lane be provided at the intersection of Scottsdale Road and 6750 North, Synchro's 95th percentile queue projection for the turn lane is 132 feet; in the same scenario, the projected 95th percentile queue for the northbound left turn lane on Scottsdale Road approaching Indian Bend Road is 309 feet. This intersection, in addition to the westbound left-turn queue, will be analyzed further as part of the update to the Palmeraie TIA as requested by the City of Scottsdale with the updated Palmeraie site plan. Final mitigation at these intersections will be determined by the City of Scottsdale.

INTRODUCTION

The Ritz Carlton development, located in the northeast quadrant of Section 10, Township 2 North, Range 4 East, is a proposed mixed use resort development. The site contains approximately 105.9 acres of undeveloped land bordered by Indian Bend Road on the north, Lincoln Drive on the south, Mockingbird Lane on the west and Scottsdale Road on the east.

A location map of the study area is provided in **Figure 1**.

The site is proposed with four entry points from Indian Bend Road, three entry points from Scottsdale Road (one is a shared, signalized driveway with the Spectrum development), and one entry point Lincoln Drive aligning with the Quail Run intersection.

This study analyzes the traffic impact due to the Ritz Carlton on the surrounding street network and meets the study requirements of the Town of Paradise Valley and the City of Scottsdale. The Ritz Carlton will generate more than 1,000 trips in the peak hour. Therefore, the study area is defined as site access drives and all signalized intersections and/or major unsignalized street intersections within ½-mile. Coordination with the Town of Paradise Valley Engineering staff indicated a desire to broaden the study area. The study area was broadened to cover major intersections in each direction of travel including Northern Avenue/Mockingbird Lane, Invergordon Road/Lincoln Drive, Mockingbird Lane/McDonald Drive, and Scottsdale Road/McDonald Drive.

This traffic impact study analyzes the intersections for levels of service at the site entrances and other key intersections within the study area. The intersections are analyzed for the AM and PM peak hours during the existing, 2018 opening year, 2023 build-out year, and 2028 and 2033 horizon years to determine the recommended intersection lane configuration, intersection stop control, turn lane storage requirements, and roadway typical sections for the development.

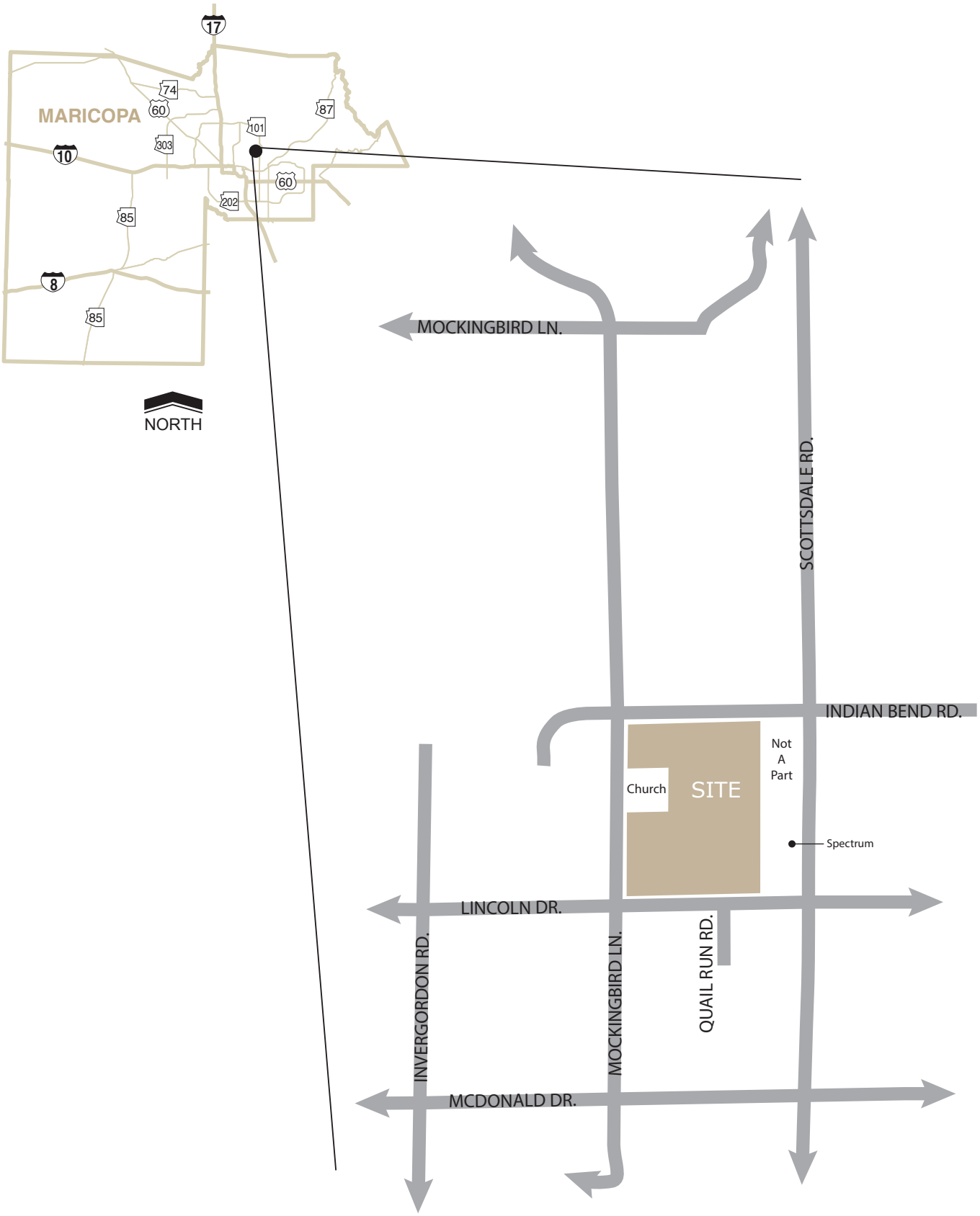


Figure 1: Vicinity Map

EXISTING CONDITIONS

SURROUNDING LAND USE

The Ritz Carlton site is currently undeveloped land located in the Town of Paradise Valley. Scottsdale Road serves as the primary boundary between the City of Scottsdale and the Town of Paradise Valley. However, the boundary jogs at Indian Bend Road and aligns with 71st Street (approximately). Land west of 71st Street between Indian Bend Road and Lincoln Drive is located within the Town of Paradise Valley.

The Spectrum Office development is located on one of the exception parcels within the development boundaries. It consists of a campus of office buildings with underground parking. A signalized driveway providing access to Scottsdale Road was provided with cross access granted to the development of the Ritz Carlton development. A half street configuration, acting as a site driveway, is currently provided for the Spectrum Office Complex use.

The Lincoln Center is a multi-tenant single-story office complex located on one of the exception parcels within the development boundaries. Access is provided from two driveways, one along Scottsdale Rod and the other along Lincoln Drive.

Saint Barnabus of the Desert is an existing church located on approximately 10 acres of land (one of the noted exceptions) within the boundaries listed for the Ritz Carlton. Saint Barnabus currently provides two driveways for access to Mockingbird Lane.

The Scottsdale Plaza Resort is located directly north of Indian Bend Road and is access via one driveway to Scottsdale Road, one driveway to Indian Bend Road and one driveway to Hummingbird Road. The access along Indian Bend Road is located east of the traffic circle and west of the Scottsdale Road intersection.

Existing residential homes surround the site. Residential dwellings are located to the south and southwest (west of the existing commercial). Homes are also found east of Scottsdale Road (east of the existing commercial) and residential homes line the street west of Mockingbird Lane and north of Indian Bend Road.

The McCormick-Stillman Railroad Park located east of Scottsdale Road on the southeast corner of Indian Bend Road and Scottsdale Road serves as a regional park for the City of Scottsdale.

McCormick Ranch Golf Club located to the northeast provides a resort hotel and golf course for public use. The Paradise Valley Country Club to the west and the Phoenician Golf Club to the southwest provide additional golf opportunities for the resort users and residential owners.

The Borgata, Scottsdale Fashion Square and other local retail establishments, located to the south, provide shopping and dining venues to local residents and visitors.

EXISTING ROADWAY NETWORK

The existing roadway network within the study area includes Scottsdale Road, Lincoln Drive, Mockingbird Lane, Invergordon Road, McDonald Drive, Indian Bend Road, Northern Avenue, and Quail Run.

Scottsdale Road is a north-south roadway located in the City of Scottsdale. Within the study area, Scottsdale Road is classified as a major arterial - suburban and has a posted speed limit along Scottsdale Road of 45 miles per hour (mph). Scottsdale Road provides access to the Carefree Highway (SR 74), the Pima Freeway (Loop 101), and the Red Mountain Freeway (Loop 202). Beginning in the north, Tom Darlington Drive becomes Scottsdale Road upon crossing Carefree Highway. North of Carefree Highway, the alignment is North Tom Darlington Drive; south of Carefree Highway it becomes Scottsdale Road. Scottsdale Road continues south, eventually becoming Rural Road, south of Red Mountain Freeway. North of the Loop 202 it remains Scottsdale Road, while south of the Loop 202 it becomes Rural Road.

Lincoln Drive is an east-west roadway. West of the 71st Street alignment, it is located in the Town of Paradise Valley, is classified as a urban major arterial and has a posted speed limit of 40 mph. East of the 71st Street alignment, it is within the City of Scottsdale, is classified as a minor collector - suburban and has a posted speed limit of 35 mph. Beginning in the east at Cattletrack Road, Lincoln Drive continues west, providing access to the Piestewa Peak Highway (SR 51). After crossing the SR 51, the alignment becomes Glendale Avenue where it continues to the west providing access to I-17. To the east of the SR 51, it remains as Lincoln Drive, but upon crossing the SR 51 it becomes East Glendale Avenue.

Mockingbird Lane is a predominantly north-south minor arterial roadway located in the Town of Paradise Valley. Beginning in the north, 68th Street becomes North Mockingbird Lane where it continues south, ultimately becoming Monte Vista Drive. North of McDonald Drive, it remains as North Mockingbird Lane. South of East Mockingbird Lane, it becomes Monte Vista Drive. North of East Mockingbird Lane, it is 68th Street; south of East Mockingbird Lane, it is North Mockingbird Lane. North Mockingbird Lane runs north-south, while East Mockingbird Lane runs east-west.

Invergordon Road is a north-south roadway located in the Town of Paradise Valley. It is classified as a minor arterial north of Northern Avenue and south of Lincoln Drive and is classified as a local roadway between Northern Avenue and Lincoln Drive. Invergordon Road begins in the north, providing access to various side streets as it continues south. Ultimately, it comes to an end when it becomes 64th Street. Invergordon Road does not provide regional access to major highways/ freeways. Invergordon Road, south of Lincoln Drive has a posted speed limit of 35 mph.

McDonald Drive is an east-west roadway. West of the 71st Street alignment, it is located in the Town of Paradise Valley, is classified as a minor arterial and has a posted speed limit of 35 mph. East of the 71st Street alignment, it is within the City of Scottsdale, is classified as a suburban minor arterial and has a posted speed limit of 40 mph. Beginning in the east at the Pima Freeway (Loop 101), McDonald Drive continues west terminating at Tatum Boulevard. McDonald Drive provides regional access to the Pima Freeway (Loop 101) and is a major travel route to and from the Phoenix Sky Harbor International Airport when used to access the 44th Street alignment.

Indian Bend Road is an east-west roadway. West of Scottsdale Road, it is located in the Town of Paradise Valley, is classified as a collector and has a posted speed limit of 25 mph. East of Scottsdale Road, Indian Bend Road is within the City of Scottsdale and is classified as a suburban minor arterial. The posted speed limit along Indian Bend Road, east of Scottsdale Road, is 40 mph. Beginning in the east at Pima Freeway (Loop 101), Indian Bend Road continues west until terminating at Mockingbird Lane. Indian Bend Road provides regional access to the Pima Freeway. Indian Bend Road contains a traffic circle within the study area. This was originally placed on behalf of the land owners prior to the planning of the Ritz Carlton development.

Northern Avenue is an east-west roadway located in the Town of Paradise Valley. It is classified as a local roadway except for the portion that is named East Mockingbird Lane, which is classified as a minor arterial. Beginning in the east, Golf Drive becomes Northern Avenue. Continuing west, Northern Avenue then becomes East Mockingbird Lane, just west of North Mockingbird Lane. East Mockingbird Lane continues west where it then becomes East Northern Avenue again, west of Invergordon Road. East Northern Avenue ultimately terminates when it becomes North Foothill Drive. Northern Avenue does not provide access to any major highways/ freeways from its location with the Town of Paradise Valley.

Quail Run Road is a north-south residential roadway located in the Town of Paradise Valley. The observed speed limit is 25 mph since it is a residential street. Quail Run Road begins at Lincoln Drive and ends within the existing subdivision. It does not provide access to any major highways/freeways. There is no posted speed limit along Quail Run Road but given its residential nature, a speed of 25 mph should be observed.

6750 North is an east-west driveway located in the City of Scottsdale. It is located on Scottsdale Road approximately ¼-mile south of the Scottsdale Road and Lincoln Drive intersection. This access currently operates as a driveway for Spectrum. The existing configuration of the driveway provides for the half street on the south side (Spectrum property).

EXISTING INTERSECTION CONFIGURATION

The intersection of **Mockingbird Lane/68th Street and Northern Avenue/Mockingbird Lane** is operating under 4-way stop controlled conditions. The northbound approach consists of one dedicated left turn lane and a shared through-right turn lane. The southbound, eastbound, and westbound approaches each consist of a shared left-through-right turn lane. The intersection of Mockingbird Lane and Northern Avenue is located just south of the Camelback Golf Course driveway.

The intersection of **Mockingbird Lane and Indian Bend Road** is operating as a tee intersection under stop controlled conditions. The northbound approach consists of a shared through-right turn lane. The southbound approach consists of one dedicated left turn lane and one through lane. The eastbound approach is an unpaved, gated, emergency access for the adjacent parcel. The westbound approach consists of one dedicated left turn lane and one dedicated right turn lane with stop control. Mockingbird Lane functions as the major roadway, while Indian Bend Road functions as the minor roadway.

The intersection of **Scottsdale Plaza Resort Driveway and Indian Bend Road** is operating as a tee intersection under stop controlled conditions. All approaches consist of a single general purpose lane. Indian Bend Road functions as the major roadway, while the Scottsdale Plaza Resort Driveway functions as the minor roadway.

The intersection of **Scottsdale Road and Indian Bend Road** is operating under signalized conditions. The north- and southbound left-turn movements operate with permitted and lagging protective phasing. The east- and westbound approaches are split phase lagging and leading, respectively. The northbound approach consists of one dedicated left turn lane, three through lanes, and one dedicated right turn lane. The southbound approach consists of one dedicated left turn lane, two through lanes, and one shared through-right turn lane. The eastbound approach consists of one dedicated left turn lane and a shared through-right turn lane. The westbound approach consists of two dedicated left turn lanes, one through lane, and one shared through-right turn lane.

The intersection of **Scottsdale Road and Joshua Tree Lane** is operating as a tee intersection under stop controlled conditions. The northbound approach consists of two through lanes and a shared through-right turn lane. The southbound approach consists of a dedicated left turn lane and three through lanes. The westbound approach consists of a single general purpose lane. The intersection provides a center vehicle refuge space for left turning vehicles from Joshua Tree Lane. Scottsdale Road functions as the major roadway, while the Joshua Tree Lane functions as the minor roadway.

The intersection of **Scottsdale Road and 6750 North** is operating as a tee intersection under signalized conditions. The Spectrum Access is located on Scottsdale Road between Lincoln Drive and McDonald Drive at ¼ mile spacing. All left turn movements operate with permitted phasing. The northbound approach consists of one dedicated left turn lane and three through lanes. The southbound approach consists of three through lanes and one dedicated right turn lane. The eastbound approach consists of one dedicated left turn lane and one dedicated right turn lane. There is currently no westbound approach.

The intersection of **Tatum Boulevard and Lincoln Drive** is operating under signalized conditions. The left turn movement approaching eastbound operates with protected leading phasing. All other left turn movements operate with leading protected and permitted phasing. The northbound, southbound and westbound approaches consist of a dedicated left turn lane two through lanes and a dedicated right turn lane. The east bound approach consists of two dedicated left turn lanes, one through lane and a shared through-right turn lane.

The intersection of **Invergordon Road and Lincoln Drive** is operating under signalized conditions. All left-turn movements operate with permitted phasing. The northbound approach consists of one dedicated left turn lane and a shared through-right turn lane. The southbound approach is not striped and is assumed to provide a shared left-through-right turn lane. The eastbound and westbound approaches consist of one dedicated left turn lane, one through lane, and a shared through-right turn lane.

The intersection of **Mockingbird Lane and Lincoln Drive** is operating under signalized conditions. The northbound and southbound left-turn movements operate with permitted phasing only while the eastbound and westbound left-turn movements operate with permitted and lagging protective phasing. The northbound and southbound approaches consist of one dedicated left turn lane and a shared through-right turn lane. The eastbound and westbound approaches consist of one dedicated left turn lane, one through lane, and a shared through-right turn lane.

The intersection of **Quail Run Road and Lincoln Drive** is operating as a tee intersection under stop controlled conditions. The northbound approach consists of one shared left-right turn lane with stop control. There is currently no southbound approach. The eastbound approach consists of one through lane and a shared through-right turn lane. The westbound approach consists of one dedicated left turn lane and two through lanes. Lincoln Drive functions as the major roadway, while Quail Run functions as the minor roadway. Quail Run Road provides residential access only south of Lincoln Drive.

The intersection of **Scottsdale Road and Lincoln Drive** is operating under signalized conditions. The northbound and southbound left-turn movements operate with lagging protective phasing. The east- and westbound approaches are split phase lagging and leading, respectively. The south- and eastbound right-turn movements have an additional protected phase during the eastbound approach and northbound left-turn protected phases, respectively. The northbound approach consists of one dedicated left turn lane, three through lanes, and a right turn lane. The southbound approach consists of two dedicated left turn lanes, three through lanes, and a right turn lane. The eastbound approach consists of one dedicated left turn lane, one through lane, and one shared through-right turn lane. The westbound approach consists of two dedicated left turn lanes, two through lanes, and one dedicated right turn lane.

The intersection of **Mockingbird Lane and McDonald Drive** is operating under all-way stop controlled conditions. The northbound approach consists of a shared left-through-right turn lane. The southbound approach consists of one dedicated left turn lane and one dedicated right turn lane. The eastbound and westbound approaches consist of one dedicated left turn lane and a shared through-right turn lane.

The intersection of **Scottsdale Road and McDonald Drive** is operating under signalized conditions. The northbound and southbound left-turn movements operate with lagging protective phasing. The eastbound and westbound left-turn movements operate with permissive and lagging protective phasing. The eastbound right-turn movement has an additional protected phase during the northbound left-turn protected phase. The northbound approach consists of two dedicated left turn lanes, two through lanes, and a shared through-right turn lane. The southbound approach consists of one dedicated left turn lane, three through lanes, and a right turn lane. The eastbound approach consists of one dedicated left turn lane; one shared left turn-through lane, and one right turn lane. The westbound approach consists of two dedicated left turn lanes, two through lanes, and one dedicated right turn lane.

The existing intersection traffic controls are summarized in **Table 1**.

Table 1 – Existing Intersection Traffic Controls

ID	Intersection	Traffic Controls
1	Northern Ave & Mockingbird Ln.	4-way stop
2	Mockingbird Ln. & Indian Bend Rd.	1-way stop (WB)
3	Scottsdale Plaza Resort & Indian Bend Rd.	1-way stop (SB)
4	Scottsdale Rd. & Indian Bend Rd.	Signalized
5	Scottsdale Rd. & Joshua Tree Ln.	1-way stop (WB)
6	Scottsdale Rd. & 6750 North	Signalized
7	Tatum Blvd. & Lincoln Dr.	Signalized
8	Invergordan Rd. & Lincoln Dr.	Signalized
9	Mockingbird Ln. & Lincoln Dr.	Signalized
10	Quail Run & Lincoln Dr.	1-way stop (NB)
11	Scottsdale Rd. & Lincoln Dr.	Signalized
12	Mockingbird Ln. & McDonald Dr.	4-way stop
13	Scottsdale Rd. & McDonald Dr.	Signalized

The existing lane configurations and intersection traffic controls are depicted in **Figure 2**.

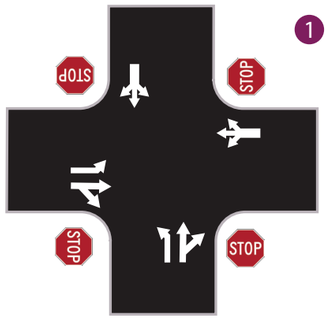
EXISTING TRAFFIC VOLUMES

Peak hour turning movement counts were conducted at the study intersections during April of 2015. Peak hour volumes counted for use in this traffic impact analysis are depicted in **Figure 3**.

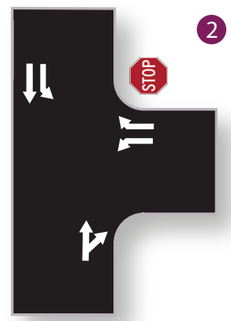
Average daily traffic (ADT) segment counts were obtained from the City of Scottsdale website and the Arizona Department of Transportation's (ADOT) traffic data management system. Town of Paradise Valley does not publish ADT data. One additional 24-hour segment count was conducted on Lincoln Drive, west of Quail Run Road. The data obtained is provided in **Appendix B** and is presented in **Table 2**.

Table 2 – 24-Hour Segment Traffic Volumes

Roadway	Reference	Volume
Scottsdale Rd.	North of Indian Bend Road	39,100
Scottsdale Rd.	Between Indian Bend Rd. & Lincoln Dr.	43,500
Scottsdale Rd.	Between Lincoln Dr. & McDonald Dr.	43,200
Scottsdale Rd.	South of McDonald Dr.	40,700
Mockingbird Ln.	Between Indian Bend Rd. & Lincoln Dr.	5,999
Indian Bend Rd.	East of Scottsdale Rd.	16,300
Lincoln Dr.	East of Tatum Blvd.	22,483
Lincoln Dr.	West of Quail Run Rd.	13,870
McDonald Drive	East of Scottsdale Rd.	18,700



Mockingbird Ln. & Northern Ave.



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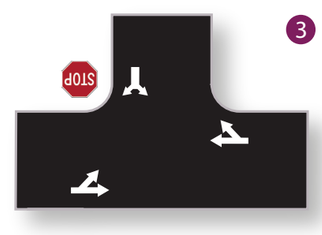
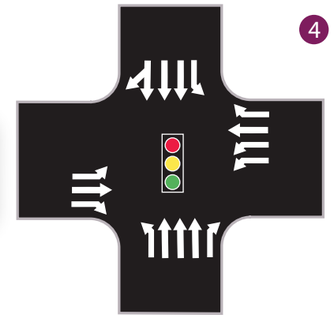


Scottsdale Plaza Resort & Indian Bend Rd.



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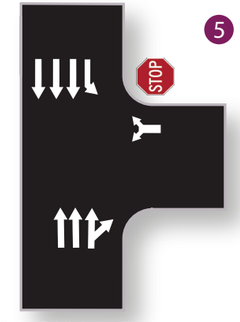
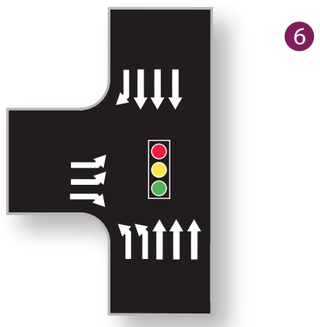
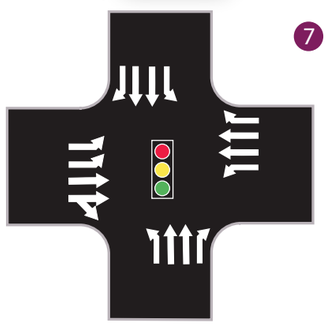


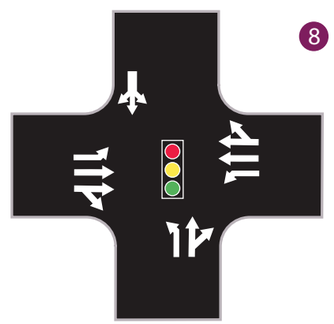
Scottsdale Rd. & Joshua Tree Ln.



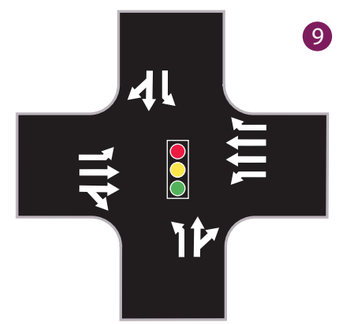
Scottsdale Rd. & 6750 North



Tatum Blvd. & Lincoln Dr.



Invergordon Rd. & Lincoln Dr.



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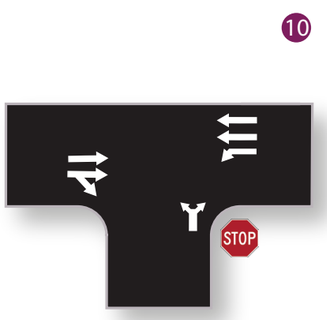

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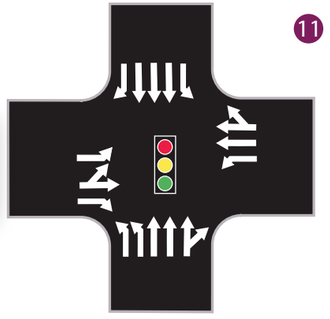

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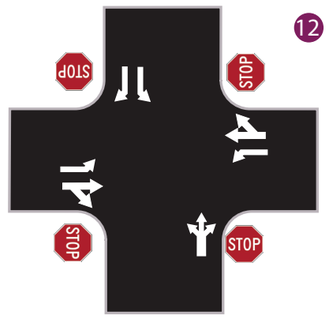

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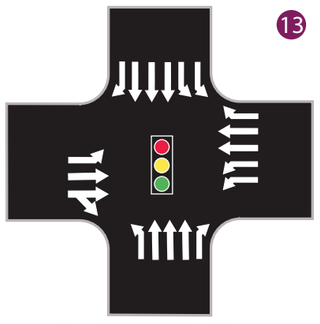

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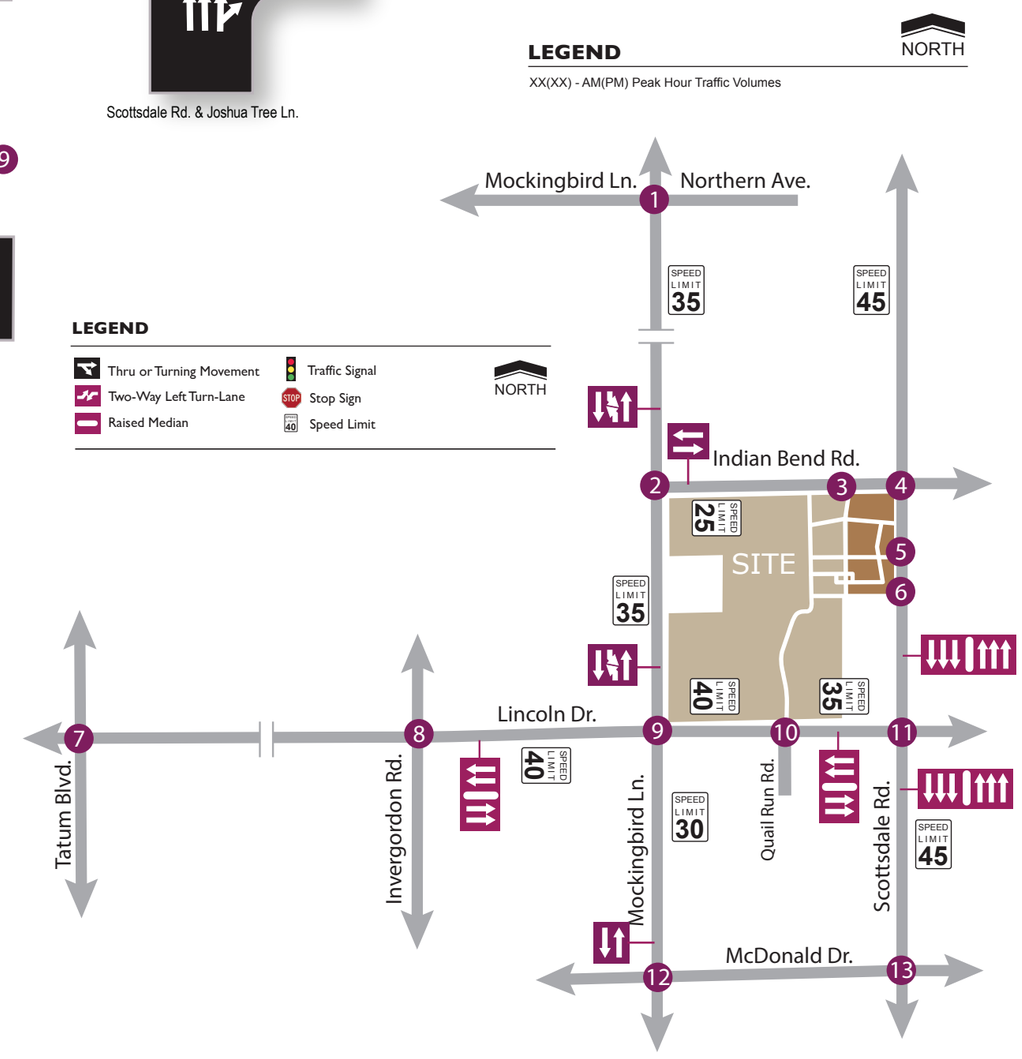
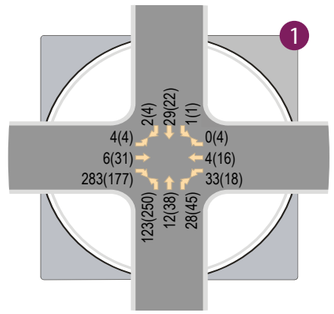


Figure 2: Existing Lane Configurations and Traffic Controls



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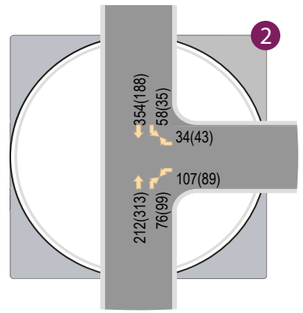

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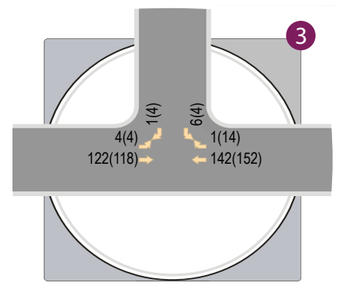
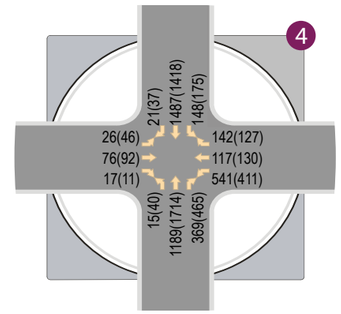


Scottsdale Plaza Resator & Indian Bend Rd.



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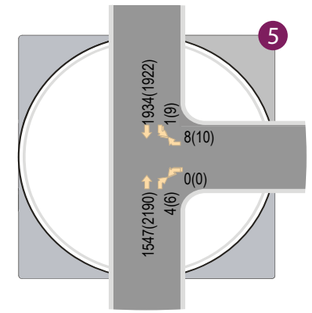

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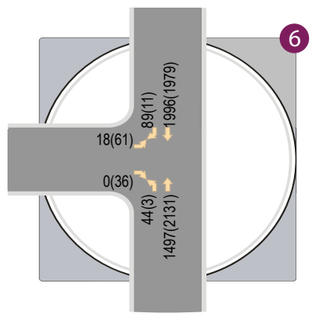
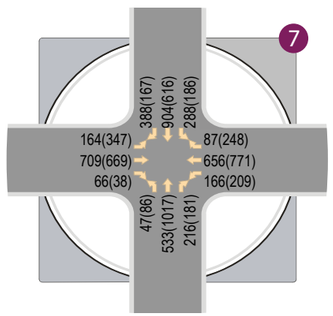
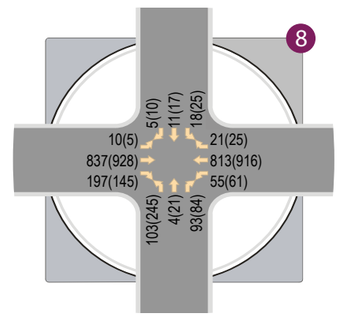


Scottsdale Rd. & 6750 North



Tatum Blvd. & Lincoln Dr.



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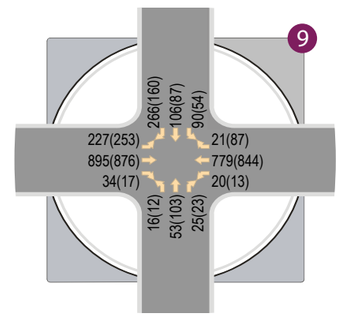
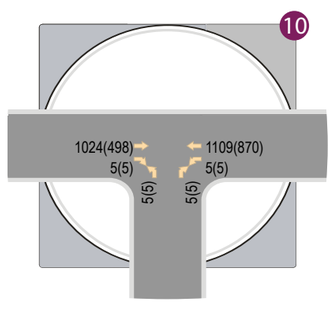


Mockingbird Ln. & Lincoln Dr.



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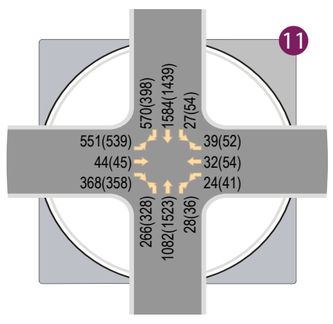
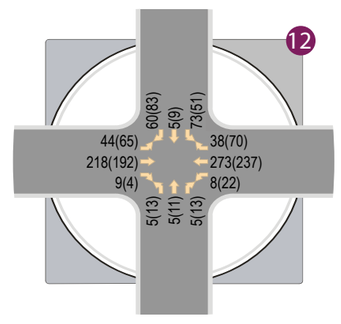


Scottsdale Rd. & Lincoln Dr.



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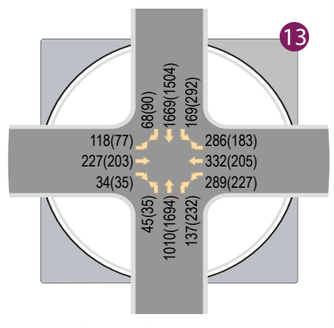


Scottsdale Rd. & McDonald Dr.

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

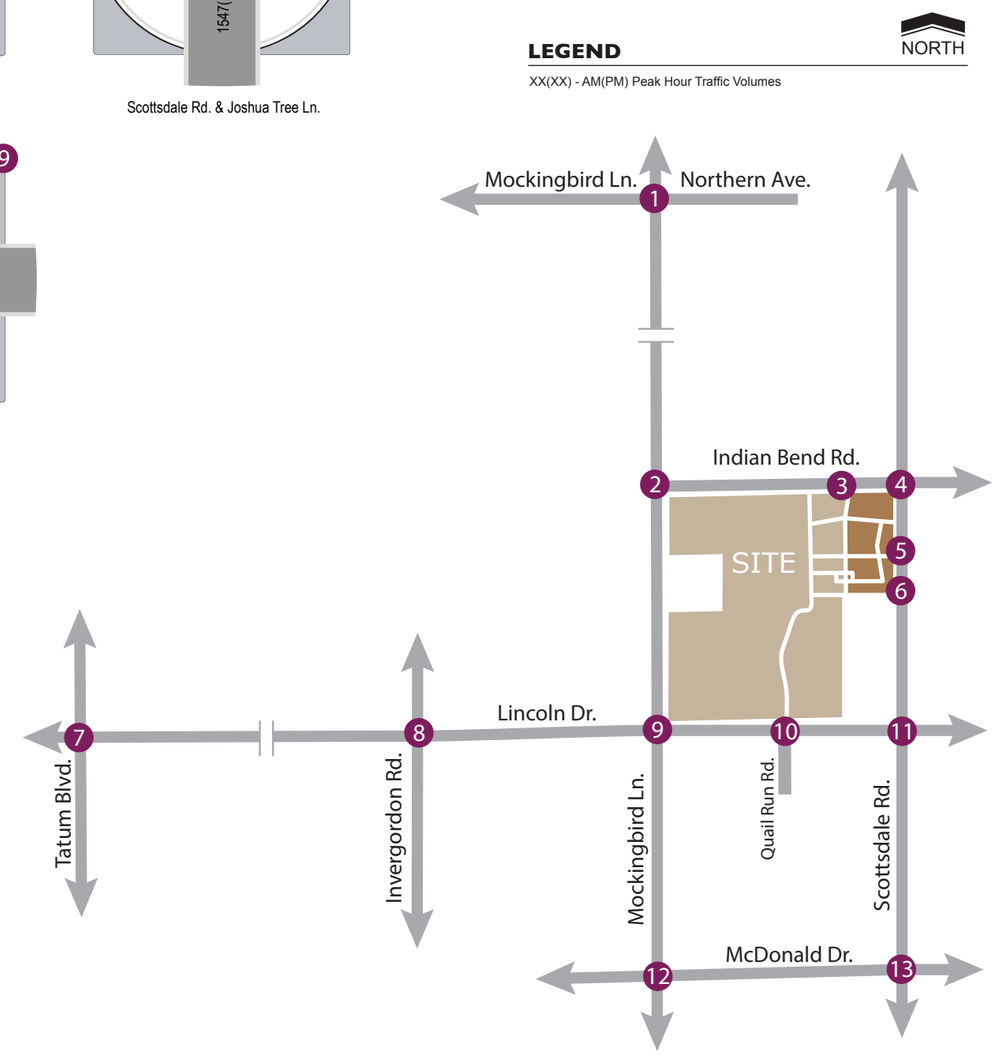


Figure 3: Existing Traffic Volumes

EXISTING CAPACITY ANALYSIS

Peak hour capacity analyses have been conducted for the study intersections based on existing lane configurations, stop control and traffic volumes. All intersections have been analyzed using the methodologies presented in the *Highway Capacity Manual (HCM), Special Report 209,* updated 2010. All signalized and unsignalized intersections have been analyzed as such using the methodologies presented in the *Highway Capacity Manual, Special Report 209,* Updated 2010, and using Synchro 9 software under the HCM 2010 methodologies.

The concept of level-of-service (LOS) uses qualitative measures that characterize operational conditions within the traffic stream. The individual levels-of-service are described by factors that include speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations A through F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions. **Table 3** lists the level of service criteria for signalized and unsignalized intersections.

Table 3 – Level-of-Service Criteria for Controlled Intersections

Level-of-Service	Unsignalized Control Delay (sec/veh)	Signalized Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10-15	> 10-20
C	> 15-25	> 20-35
D	> 25-35	> 35-55
E	> 35-50	> 55-80
F	> 50	> 80

Source: Exhibit 18-4 and Exhibit 19-1, Highway Capacity Manual 2010

Results of the existing level-of-service analyses are shown in **Table 4** for both peak hours. The analyses utilized signal timing provided by the Town of Paradise Valley and the City of Scottsdale. The traffic analysis worksheets for the existing conditions have been included within **Appendix B**. Analysis of segment ADT is provided in a later section.

Table 4 – Existing Peak Hour Levels of Service

ID	Intersection	Control	Approach/ Movement	AM Peak Hour	PM Peak Hour
1	Mockingbird Ln. & Northern Ave.	4-way Stop	NB left	B	B
			NB thru/right	A	A
			SB shared	A	A
			EB left	A	A
			EB thru/right	B	B
			WB shared	A	A
			Overall	**A**	**B**
2	Mockingbird Ln. & Indian Bend Rd.	1-way stop (WB)	SB Left	A	A
			WB Left	C	B
			WB Right	A	B
3	Scottsdale Plaza Resort Driveway & Indian Bend Rd.	1-way stop (SB)	SB shared	A	A
			EB shared	A	A
4	Scottsdale Rd. & Indian Bend Rd.	Signalized	NB left	D	D
			NB thru	D	D
			NB right	C	C
			SB left	D	D
			SB thru	C	C
			SB right	D	C
			EB left	E	E
			EB thru	E	E
			EB right	D	D
			WB left	E	E
			WB thru	D	D
			WB right	B	B
			Overall	**D**	**D**
5	Scottsdale Rd. & Joshua Tree Rd.	1-way stop (WB)	SB left	D	F
			WB shared	D	F
6	Scottsdale Rd. & 6750 North	Signalized	NB	A	A
			SB	A	A
			EB	E	E
			Overall	**A**	**A**
7	Tatum Blvd. & Lincoln Dr.	Signalized	NB left	C	C
			NB thru	D	D
			NB right	D	C
			SB left	C	C
			SB thru	C	C
			SB right	C	C
			EB left	E	F
			EB thru	E	E
			EB right	E	E
			WB left	D	D
			WB thru	D	D
			WB right	D	D
			Overall	**D**	**D**

Table 4 – Existing Peak Hour Levels of Service (Continued)

ID	Intersection	Control	Approach/ Movement	AM Peak Hour	PM Peak Hour
8	Invergordan Rd. & Lincoln Dr.	Signalized	NB left	C	C
			NB thru/right	C	C
			SB shared	C	C
			EB left	A	B
			EB thru	A	A
			EB right	A	A
			WB left	B	B
			WB thru	A	A
			WB right	A	A
			Overall	**A**	**B**
9	Mockingbird Ln. & Lincoln Dr.	Signalized	NB left	E	E
			NB thru/right	D	E
			SB left	D	D
			SB thru/right	D	D
			EB left	D	C
			EB thru	B	A
			EB right	B	A
			WB left	D	D
			WB thru	D	D
			WB right	D	E
			Overall	**C**	**C**
10	Quail Run & Lincoln Dr.	1-way Stop (NB)	NB shared	C	B
			WB left	B	A
11	Scottsdale Rd. & Lincoln Dr.	Signalized	NB left	C	C
			NB thru	A	A
			NB right	A	B
			SB left	D	D
			SB thru	B	C
			SB right	B	B
			EB left/thru	F	F
			EB right	D	D
			WB left	E	E
			WB thru	E	E
			WB right	E	E
			Overall	**C**	**C**
12	Mockingbird Ln. & McDonald Dr.	4-way Stop	NB Shared	A	A
			SB Left	B	B
			SB Right	A	A
			EB Left	A	A
			EB Shared	B	B
			WB Left	A	A
			WB Shared	B	B
			Overall	**B**	**B**

Table 4 – Existing Peak Hour Levels of Service (Continued)

ID	Intersection	Control	Approach/ Movement	AM Peak Hour	PM Peak Hour
13	Scottsdale Rd. & McDonald Dr.	Signalized	NB left	D	D
			NB thru	C	D
			NB right	C	C
			SB left	C	D
			SB thru	D	C
			SB right	B	B
			EB left	D	D
			EB thru	E	E
			EB right	E	E
			WB left	F	F
			WB thru	D	E
			WB right	C	C
			Overall	**D**	**D**

The results of the existing analysis summarized in **Table 4** indicate that all study intersections should operate at overall acceptable level of service (LOS D or better) with the exception of Scottsdale Road/Joshua Tree Road. The signalized intersections of Scottsdale Road/Indian Bend Road, Scottsdale Road/Joshua Tree Road, Scottsdale Road/6750 North, Tatum Boulevard/Lincoln Drive, Mockingbird Lane/Lincoln Drive, Scottsdale Road/Lincoln Drive, Scottsdale Road/McDonald Drive operate at acceptable LOS overall but have one or more movements that experience elevated delays during AM and/or PM peak hour.

The southbound left and westbound shared movements at the intersection of ***Scottsdale Road and Joshua Tree Road*** experience elevated delays during the peak hours. Elevated delays at stop controlled movements at intersections with major roadways is not uncommon.

CRASH EXPERIENCE

The following crash analysis was developed from historical data obtained by CivTech from ADOT. The crash data and collision diagrams can be found in **Appendix D**. The crash history data covered the latest full three year periods available, 2012 through 2014.[1] For this project, CivTech has done its best in attempting to glean the most relevant crashes from the more than 100,000 crashes that occur each year; however, the results cannot be considered "official" since they were not received from an official source.

CivTech identified a three-year total of 90 crashes without any fatalities at the study intersections. There were 29 in 2012, 30 in 2013, and 31 in 2014.

Section Crashes. Since there were just a small number of crashes along the Mockingbird Lane frontage of the proposed development, and the Lincoln Drive frontage of the proposed development, the resulting section crash analysis is provided in **Table 5** and **Table 6**, respectively.

Table 5 – Section Crashes: Mockingbird Lane, Lincoln Drive to Indian Bend Road

STATISTIC	2012	2013	2014	TOTAL
Crash Severity				
Injury Crashes (# Injuries)	0	1(1)	0	1(1)
Non-Injury, Property Damage Only	1	0	0	1
TOTAL	1	1	0	2
Crash Type				
Angle	1	1	0	2
TOTAL	1	1	0	2
Crashes involving bicycles/pedestrians	0	0	0	0

A review of the results summarized in **Table 5** reveals that the small number of crashes that occurred on Mockingbird Lane between Lincoln Drive and Indian Bend Road does not warrant further detailed analysis (contributing factors, etc.) or any mitigation measures that could be provided with the proposed development.

[1] ADOT is charged by statute with the responsibility of tracking all incidents involving motor vehicles occurring, reported, and investigated in the State. ADOT has devolved the responsibility of responding to requests for crash data to local agencies. In this case, CivTech requested crash data from the Town which it could not provide in time for this analysis.

Table 6 – Section Crashes: Lincoln Drive, Mockingbird Lane to 70th Street

STATISTIC	2012	2013	2014	TOTAL
Crash Severity				
Injury Crashes (# Injuries)	0	2(2)	1(1)	3(3)
Non-Injury, Property Damage Only	3	1	4	8
TOTAL	3	3	5	11
Crash Type				
Angle	0	1	0	1
Left Turn	0	0	2	2
Rear End	2	0	0	2
Sideswipe (same direction)	1	1	1	3
Sideswipe (opposite direction)	0	0	1	1
Other/Unknown	0	1	1	2
TOTAL	3	3	5	11
Crashes involving bicycles/pedestrians	0	0	0	0

A review of the results summarized in **Table 6** reveals that the small number of crashes that occurred on Lincoln Drive between Mockingbird Lane and 70th Street does not warrant further detailed analysis (contributing factors, etc.) or any mitigation measures that could be provided with the proposed development.

Intersection Crashes. There were crashes at or related to five (5) of the seven (7) study intersections that are signalized or otherwise considered key to the analysis. At one of these seven (Scottsdale Road at 6750 North), no crashes were recorded. The remaining study intersection along Scottsdale Road at Joshua Tree Lane recorded one (1) PDO (Property Damage Only) incident in its 3-year analysis, which does not warrant further evaluation. For this exercise, CivTech selected from the crash data base only those crashes for which the indicated study area was intersection or intersection-related.

Scottsdale Road at Lincoln Drive -- The first intersection to be considered is that of Scottsdale Road at Lincoln Drive, the crashes of which are summarized in **Table 7**. This is a major intersection with a traffic signal. Less than one-fourth of the crashes (6 of 26) resulted in bodily injury; 20 of the 26 crashes occurred during daytime, while the other 6 occurred during nighttime (with lighting).

Table 7 – Intersection Crashes: Scottsdale Road at Lincoln Drive

STATISTIC	2012	2013	2014	TOTAL
Crash Severity				
Injury Crashes (# Injuries)	1(1)	2(2)	3(4)	6(7)
Non-Injury, Property Damage Only	6	5	9	20
TOTAL	7	7	12	26
Crash Type				
Single Vehicle	0	1	0	1
Angle	1	1	2	4
Left Turn	1	1	0	2
Sideswipe (same direction)	0	0	1	1
Rear End	5	4	8	17
Other/Unknown	0	0	1	1
TOTAL	7	7	12	26
Crashes involving bicycles/pedestrians	0	0	0	0

A review of the results summarized in **Table 7** reveals that the small number and the several types of crashes that occurred on Scottsdale Road at Lincoln Drive does not warrant further detailed analysis (contributing factors, etc.) or any mitigation measures that could be provided with the proposed development.

A review of the crash data reveals that more than half (17 of 26) of the crashes were rear-end collisions, which may occur whenever there is a slowing or stopping of traffic, such as for a red light. Rear-end collisions tend to increase when a traffic signal is used to treat the types of collisions that are more severe, such as angle or left turn collisions, and are generally considered untreatable as they are often the result of inattention or some other factor contributed by the driver of the following vehicle.

Tatum Boulevard at Lincoln Drive – The next study intersection to be considered is Tatum Boulevard at Lincoln Drive. The crash analysis for this intersection is provided in **Table 8**. This is a major intersection with a traffic signal. About one-third of the crashes (8 of 26) resulted in bodily injury. 16 of the 26 incidents occurred during daytime, while the remaining 8 occurred during nighttime (with lighting).

Table 8 – Intersection Crashes: Tatum Boulevard at Lincoln Drive

STATISTIC	2012	2013	2014	TOTAL
Crash Severity				
Injury Crashes (# Injuries)	1(1)	4(7)	3(4)	8(12)
Non-Injury, Property Damage Only	5	4	9	18
TOTAL	6	8	12	26
Crash Type				
Angle	0	3	2	5
Rear End	6	5	8	19
Sideswipe (same direction)	0	0	1	1
Other/Unknown	0	0	1	1
TOTAL	6	8	12	26
Crashes involving bicycles/pedestrians	0	0	0	0

A review of the results summarized in **Table 8** reveals that most of the recorded incidents occurred as non-injury.

A review of the crash data reveals that about three-fourths of the crashes (19 of 26) were rear-end collisions, which may occur whenever there is a slowing or stopping of traffic, such as for a red light. Rear-end collisions tend to increase when a traffic signal is used to treat the types of collisions that are more severe, such as angle or left turn collisions, and are generally considered untreatable as they are often the result of inattention or some other factor contributed by the driver of the following vehicle. However, due to the large factor of rear-end collisions, it is recommended that further evaluation is needed by the Town of Paradise Valley.

The largest majority of crashes reported occurred in clear weather on dry roads throughout the year with no concentrations of collisions on any particular day of the week or in any single month or season.

Scottsdale Road at Indian Bend Road -- The crashes recorded at the signalized intersection of Scottsdale Road and Indian Bend Road are summarized in **Table 9**. Fewer than thirty percent (6 of 21) of the crashes resulted in injury. Most of the collisions occurred during daylight in clear weather on dry roads. Only a couple incidents occurred at dusk or in the dark, or raining with wet conditions.

Table 9 – Intersection Crashes: Scottsdale Road at Indian Bend Road

STATISTIC	2012	2013	2014	TOTAL
Crash Severity				
Injury Crashes (# Injuries)	2(2)	4(6)	0	6(8)
Non-Injury, Property Damage Only	8	5	2	15
TOTAL	10	9	2	21
Crash Type				
Single Vehicle	1	0	0	1
Angle	0	1	0	1
Rear End	8	7	2	17
Sideswipe (same direction)	1	0	0	1
Other/Unknown	0	1	0	1
TOTAL	10	9	2	21
Crashes involving bicycles/pedestrians	0	0	0	0

A review of the crash data reveals that more than eighty percent of the crashes (17 of 21) were rear-end collisions. As previously stated, due to the large factor of rear-end collisions, it is recommended that further evaluation is needed by the Town of Paradise Valley.

The largest majority of crashes reported occurred in clear weather on dry roads throughout the year with no concentrations of collisions on any particular day of the week or in any single month or season. Only one incident was recorded for raining conditions and two incidents reported wet surface.

Mockingbird Lane at Lincoln Drive – **Table 10** summarizes the crashes recorded at the intersection of Mockingbird Lane and Lincoln Drive. At this signalized intersection, none of the recorded incidents (0 of 2) resulted in injury. Both of these incidents occurred in daytime, with clear weather and dry surface.

Table 10 – Intersection Crashes: Mockingbird Lane at Lincoln Drive

STATISTIC	2012	2013	2014	TOTAL
Crash Severity				
Injury Crashes (# Injuries)	0	0	0	0
Non-Injury, Property Damage Only	1	1	0	2
TOTAL	1	1	0	2
Crash Type				
Rear End	1	0	0	1
Other/Unknown	0	1	0	1
TOTAL	1	1	0	2
Crashes involving bicycles/pedestrians	0	0	0	0

A review of the small amount of crash data shows only one rear-end collision, with the other incident unknown. Due to the small amount of incidents, this intersection does not warrant further analysis.

Mockingbird Lane at Indian Bend Road. The crashes recorded at Mockingbird Lane and Indian Bend road are summarized as reported in **Table 11**. This intersection is stop controlled in the westbound approach. The one recorded incident back in 2012 resulted in injury. This incident occurred in dry conditions, during clear weather in the daytime.

Table 11 – Intersection Crashes: Mockingbird Lane at Indian Bend Road

STATISTIC	2012	2013	2014	TOTAL
Crash Severity				
Injury Crashes (# Injuries)	1(1)	0	0	1(1)
Non-Injury, Property Damage Only	0	0	0	0
TOTAL	1	0	0	1
Crash Type				
Rear End	1	0	0	1
TOTAL	1	0	0	1
Crashes involving bicycles/pedestrians	0	0	0	0

A review of the incident reported shows that this incident was from a rear-end collision. Since only one incident has been reported for this intersection since 2012, it is not recommended to be evaluated for further analysis.

Conclusion. Per the above discussion, it can be concluded that there are no major mitigation measures currently warranted within the vicinity of the site. It should be noted that the intersections of **Tatum Boulevard & Lincoln Drive** and **Scottsdale Road & Indian Bend Road** recorded a high number of rear-end crashes relative to crash type. Due to this occurrence, it is recommended that these intersections be further evaluated by the Town.

FUTURE ROADWAY IMPROVEMENTS

PROJECT SPECIFIC IMPROVEMENTS

The developer is expected to complete half-street improvements to Indian Bend Road from Scottsdale Road to approximately 600 feet to the west. This will provide a two-way left-turn lane on Indian Bend Road along the improved length. The remainder of Indian Bend Road is at its ultimate condition.

It is likely that the City of Scottsdale will require the addition of a second westbound through lane along Indian Bend Road. This determination will be made by the City of Scottsdale during their future review of the Palmeraie TIMA.

The developer will improve the intersection of Scottsdale Road and 6750 North. The west leg after improvements will consist of two dedicated left turn lanes, a dedicated right turn lane and two ingress lanes. The median within the south leg of the intersection will be modified and the northbound lanes restriped to provide two dedicated left turn lanes and three through lanes. An alternative improvement condition is proposed should the City of Scottsdale not allow dual northbound left turn lanes. Final geometry and mitigation is subject to approval by the City of Scottsdale. Improvements at this intersection could require the relocation of overhead improvements and other utilities.

The developer proposes to signalize the intersection of Quail Run Road and Lincoln Drive which will serve as the main entrance to the proposed Ritz Carlton Resort by opening year 2018. A signal warrant analysis is provided at a later section in the report. This will require removal of the nearest median (west of the intersection). The developer also currently plans to construct new medians.

The developer has agreed to construct a westbound right turn lane and a southbound right turn lane on Lincoln Drive approaching Mockingbird Lane. The turn lanes will separate approaching right turning traffic from through traffic on the same approach and improve the traffic characteristics of the intersection. This may require the relocation of the traffic signal and red light camera on the affected corners.

The traffic circle located at the intersection of Access A and Indian Bend Road should be evaluated for alternative pavement treatment. The existing pavers are difficult for a bicycle to negotiate.

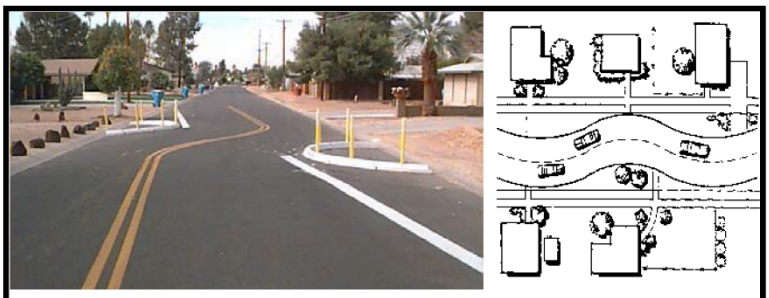
Indian Bend Road may require traffic calming elements to be installed between the traffic circle (Intersection A) and Mockingbird Lane if traffic from Palmeraie is prioritized to use Indian Bend Road. The determination to prioritize Indian Bend Road could be made by the City of Scottsdale during their review of the future Palmeraie TIMA. Potential traffic calming options are discussed below.

Speed humps - A vertical “hump” across the roadway that causes the driver to slow due to driver discomfort. This treatment is arguably the most cost effective treatment as they generally have a low cost to initially place and maintain and are fairly effective at decreasing vehicular speeds below the speed limit within its vicinity.

SPEED HUMP

Radar Speed Sign – typically accompanied by a speed limit sign, a radar speed sign reminds drivers with illuminated visual feedback boards. These signs are effective at reminding drivers of speed limits and reduces occurrences of speeding vehicles provided driver observance.

Chicane – A chicane is a relatively quick horizontal swerve in the road that causes the driver to slow due to driver discomfort and to keep the vehicle within the travel lane. If the roadway is already constructed, a chicane may require additional right-of-way or decreasing lane widths. Locations available for chicanes generally depend on curbing and access needs. On-street parking is restricted on and approaching chicanes. Chicanes with center medians are prefered as drivers cannot drive through the opposing travel lane to maintain a higher speed. Chicanes with center median and landscaping may provide a nieghborhood element, but are considerably more expensive to install than the previous options discussed.



CHICANE

Choker – a choker is a short section that provides a considerably smaller roadway width than the rest of the roadway. Chokers cause drivers to slow due to perceived discomfort with the vehicle's tires in closer proximity to the outside curb and opposing traffic. A choker can restrict the roadway to allow only one lane preventing simultaneous two-way traffic. Consideration must also be given to driveway access and parking. Costs of chokers depend on their length and quality/maintenance of landscaping installed. The Town of Paradise Valley has already applied this concept on Mockingbird lane immediately south of McDonald Drive.

A treatment specific to the intersection of 69th Place and Indian Bend Road may be employed rather than or in addition to treatment(s) to roadway segments. If the intersection is reconfigured to an all-way stop condition or a roundabout, vehicles traveling on Indian Bend Road will be required to slow or stop. An all-way stop is relatively inexpensive to install, but requires justification which may be explored further. A roundabout, when properly designed, can improve neighborhood traffic conditions and add neighborhood character, but is more expensive than all of the previous options and will not prevent or deter traffic from using Indian Bend Road.

REGIONAL IMPROVEMENTS

Construction along Scottsdale Road, north of the Ritz Carlton development was completed in early 2007 as part of a City of Scottsdale improvement project. Eastbound Indian Bend Road was widened at the intersection with Scottsdale Road to provide dual westbound left turn lanes. The Town of Paradise Valley plans to install a median on Mockingbird Lane between Lincoln Drive and Northern Avenue sometime within the financial years 2018 and 2029. This improvement is not anticipated to cause major changes to current traffic patterns. There are no other known projects planned within the opening years of the Ritz Carlton development which will redirect current traffic patterns on the surrounding area streets.

The intersection of Mockingbird Lane and Indian Bend Road was evaluated as a one-way stop controlled intersection which continues to meet acceptable levels of service during the study horizon. Input from neighbors indicates a concern for increased delay at this intersection and a possible need to keep traffic flowing in all directions. Optional intersection treatments should be considered in the future.

PROPOSED DEVELOPMENT

SITE LOCATION

The Ritz Carlton located in the northeast quadrant of Section 10, of Township 2 North, Range 4 East is a proposed resort, residential and commercial planned development. The site contains approximately ±105.9 acres of undeveloped land bordered by Indian Bend Road on the north, Lincoln Drive on the south, Mockingbird Lane on the west and Scottsdale Road on the east. Four existing developments located within the above mentioned boundaries, accounting for approximately 30-acres of land, are exceptions from this development. These exceptions are made up of an existing church located on a ±10-acre parcel east of Mockingbird Lane with the Spectrum Office development located along Scottsdale Road, the Alliance Residential development location along Lincoln Drive and the Lincoln Center Office Development located at the northwest corner of Scottsdale Road and Lincoln Drive accounting for the other ±20-acres.

The related Palmeraie development within the City of Scottsdale is located on ±17 acres on the southwest corner of Scottsdale Road and Indian Bend Road and will compliment Parcel E of the site.

LAND USE AND INTENSITY

This development consists of mixed uses which include resort, residential, office and a shopping center. **Table 12** illustrates the land uses and intensity of the proposed development.

Table 12 – Land Use and Intensity/Density

Parcel	Land Use	Size (acres)	Area Coverage	Dwellings / Floor Area
A	Resort Hotel	±18.0	29.8%	200 Keys
A1	Resort Villas	±9.5	38.2%	120 Units
B	Single-Family Residential	±33.5	25.6%	89 DU's
C	Single-Family Residential	±25.8	24.5%	55 DU's
D	Attached Residential	±8.0	38.7%	100 DU's
E	Attached Residential Grocery Store Office Retail Restaurant	±11.0	40.2%	200 DU's 9,519 SF 43,599 SF ±113,882 SF 27,700 SF

DU = Dwelling Unit

SITE PLAN AND ACCESS

The layout of the site is illustrated in **Figure 5**. The development is proposed with a 200 room resort hotel and 120 villas including a spa, lodge, meeting facilities, gardens, outdoor function space, and retail. The residential component of the plan consists of approximately 114 lots/units of low density single family residential and 100 units/lots of attached residences. The commercial component of the site is planned to consist of approximately 107,000 square feet of retail/restaurant use, 44,000 square feet of office and 230 attached residential dwelling units. The site is proposed with four entry points from Indian Bend Road, three entry points from Scottsdale Road (one is a shared, signalized driveway with the Spectrum development at 6750 North), and one entry point Lincoln Drive aligning with the Quail Run intersection.

Roadways internal to the commercial area provide access to all parcels but are designed to discourage cut-through traffic as they are somewhat circuitous, often provide on street parking and will likely have considerable pedestrian crossing traffic. Vehicles are anticipated to prefer to use accesses closest to respective parking areas. The hotel plans for easy pedestrian access to/from the commercial corner.

TRIP GENERATION

The average daily traffic (ADT), AM peak hour and PM peak hour volumes have been estimated by trip rates given in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition.* The applicable trip rates from ITE's *Trip Generation Manual* were used to calculate the total trips for the site. **Table 13** shows the trip generation established for this development. Detailed trip generation calculations have been included in the **Appendix E**.

The Ritz Carlton has several land uses that if considered as stand-alone projects would generate traffic volumes that would require evaluation. However, the Resort Hotel land use accounts for these uses as part of the development. Therefore, the trips generated from the resort portion of the development are determined by the number of units and are inclusive of the spa, retail, meeting space, and club house uses.

Note: Site Layout May Change. Most Recent Overall Comprehensive Site Plan Shown. Retail Component Layout May Change. Parcel D now Accesses Quail Run Road – No Public Access to Parcel D from Lincoln Drive is Proposed.

Figure 4: Site Plan

Trip Reductions for Internal Trips

According to data presented in the ITE Trip Generation Manual, trips attracted to commercial and/or retail land uses are often shared. This means that a single trip (vehicle) to the proposed development may visit other generators within the site during the same visit, a phenomenon known as "interaction" or "internal capture." This is especially true for sites with multiple tenants and/or land uses. This has the effect of reducing the off-site trip generating potential of the proposed site. Based on the proposed resort and residential land uses it was determined internal capture rates would not be apply by Phase I opening year (2018). Preliminary calculations per ITE methodology indicated a full build internal capture rate greater than 20% percent by study horizon year (2023). For study purposes and to remain conservative, a maximum internal capture rate of 20% percent was applied to the total daily and both the AM and PM peak hour trips. Detailed internal capture calculations have been included within **Appendix E**

Trip Reductions for Pass-By Trips

Based on published ITE data, it could be estimated that a portion of the traffic entering and exiting the development proposed for this site would be "new" traffic added to the adjacent roadway system and that the balance of the traffic would come from that which is already "passing by" the site. This TIA does not apply pass-by reductions within the peak hour analyses to be conservative.

Trips were generated for both the opening year and build-out of the development. **Table 6** displays the resulting trip generation results.

Table 13 – Trip Generation

						Daily	AM Peak Hour			PM Peak Hour		
Phase	Parcel	Land Use	ITE	Size	Units	Total	In	Out	Total	In	Out	Total
1	A	Resort Hotel	330	200	Rooms	1,000	87	34	121	36	48	84
1	A1	Resort Hotel	330	120	Rooms	600	64	25	89	22	29	51
1	B	Homes	210	89	DU	944	18	55	73	60	35	95
1	C	Homes	210	55	DU	606	12	37	49	39	23	62
2	D	Attached Homes	230	100	DU	644	9	43	52	41	20	61
2	E	Attached Homes	230	200	DU	1,176	15	75	90	72	35	107
2	E	Retail	820	85,000	SF	6,112	88	54	142	258	280	538
2	E	Grocery Store	850	10,000	SF	2,062	21	13	34	76	73	149
2	E	Restaurant	931	12,000	SF	1,080	8	2	10	60	30	90
2	E	Office	710	44,000	SF	486	61	8	69	11	55	66
Total Phase 1 Trips			*Totals*			3,794	190	194	384	198	155	353
Total Buildout Trips			*Totals*			14,710	383	346	729	675	628	1,303
			Internal Capture			*(2,942)*	*(77)*	*(69)*	*(146)*	*(135)*	*(126)*	*(261)*
			Net Trips			11,768	306	277	583	540	502	1,042

Phase 1 (opening 2018) of the development is anticipated to generate 3,794 daily trips, of which 384 trips are during the AM peak hour and 353 trips are during the PM peak hour.

Phase 2 (Buildout horizon year 2023) of the development is anticipated to generate 14,710 daily trips, of which 729 trips are during the AM peak hour and 1,303 trips are during the PM peak hour. Some trips are expected to remain internal to the site and some external trips will already be using the roadways adjacent to the site. Considering these reductions, 11,768 new daily trips are anticipated with 583 AM peak hour trips and 1,042 PM peak hour trips.

TRIP DISTRIBUTION

The Ritz Carlton development consists of multiple land uses. Trips were distributed based on the type of land use. For hotel related trips, most are anticipated to travel to/from Sky Harbor Airport with the remainder to nearby areas in downtown Scottsdale. For residential trips, employment opportunity within a 10-mile radius of the site, projected by Maricopa Association of Government (MAG) socioeconomic data, was considered. For retail, restaurant and commercial trips, the projected population within a 5-mile radius was considered. For office trips, the projected employment within a 5-mile radius was considered. These distributions of socioeconomic data were used as a base for the distributions applied to the trips generated by the site. They were adjusted according to major roadways and likely travel routes such as Lincoln Drive, Scottsdale Road and Loop 101.

The trip distribution applied to site generated traffic is summarized in **Table 14** and depicted in **Figure 5**, **Figure 6**, **Figure 7** and **Figure 8**.

Table 14 – Trip Distribution Percentages by Land Use

Roadway	To/From	Trip Distribution			
		Hotel	Residential	Retail	Office
Tatum Boulevard	North	0%	2%	5%	3%
Tatum Boulevard	South	75%	11%	7%	10%
Scottsdale Road	North	5%	11%	21%	19%
Scottsdale Road	South	5%	20%	24%	24%
Mockingbird Lane	West	0%	2%	5%	2%
Indian Bend Road	East	5%	29%	16%	20%
Lincoln Drive	West	0%	0%	2%	0%
Lincoln Drive	East	10%	15%	7%	12%
McDonald Drive	East	0%	10%	8%	8%
McDonald Drive	West	0%	0%	5%	2%
Total		**100%**	**100%**	**100%**	**100%**

The percentages presented in **Table 14** were applied to the trips generated to determine the site traffic at the intersections within the study area. **Figure 9** and **Figure 10** present the opening year site traffic (2018) for the Ritz Carlton. **Figure 11** and **Figure 12** present the build-out site generated traffic (2023, 2028 and 2033).

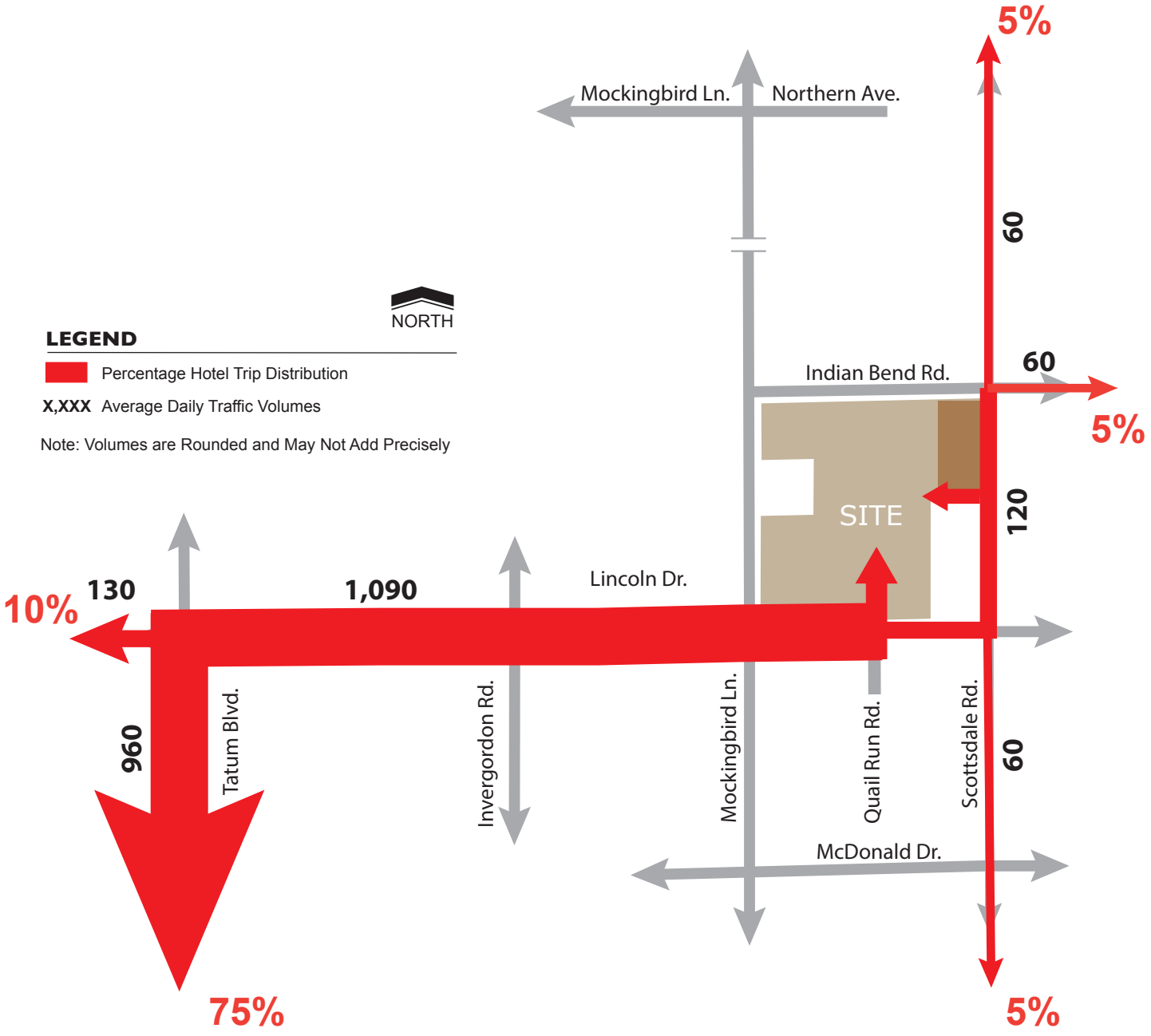


Figure 5: Hotel Distribution

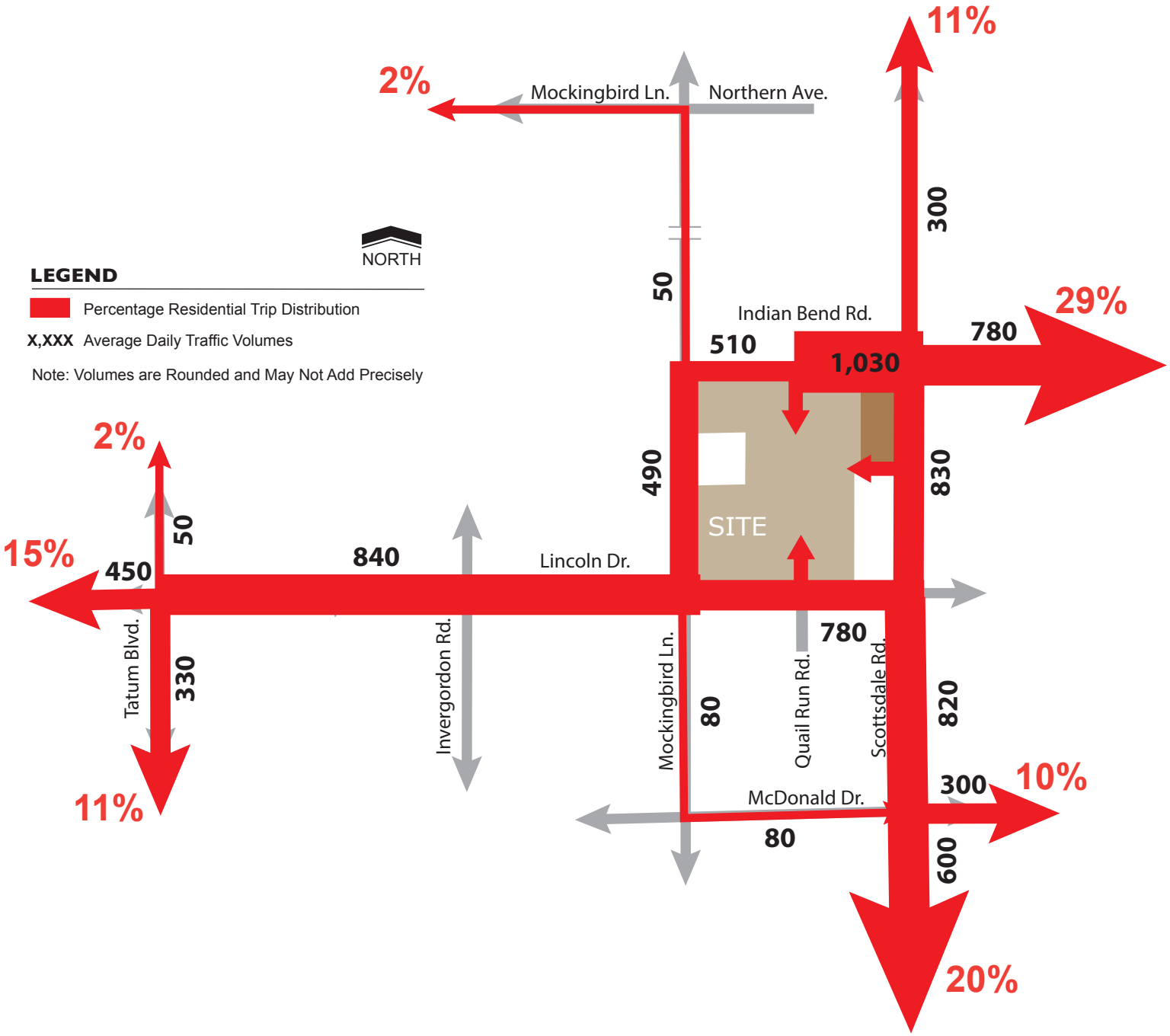


Figure 6: Residential Distribution

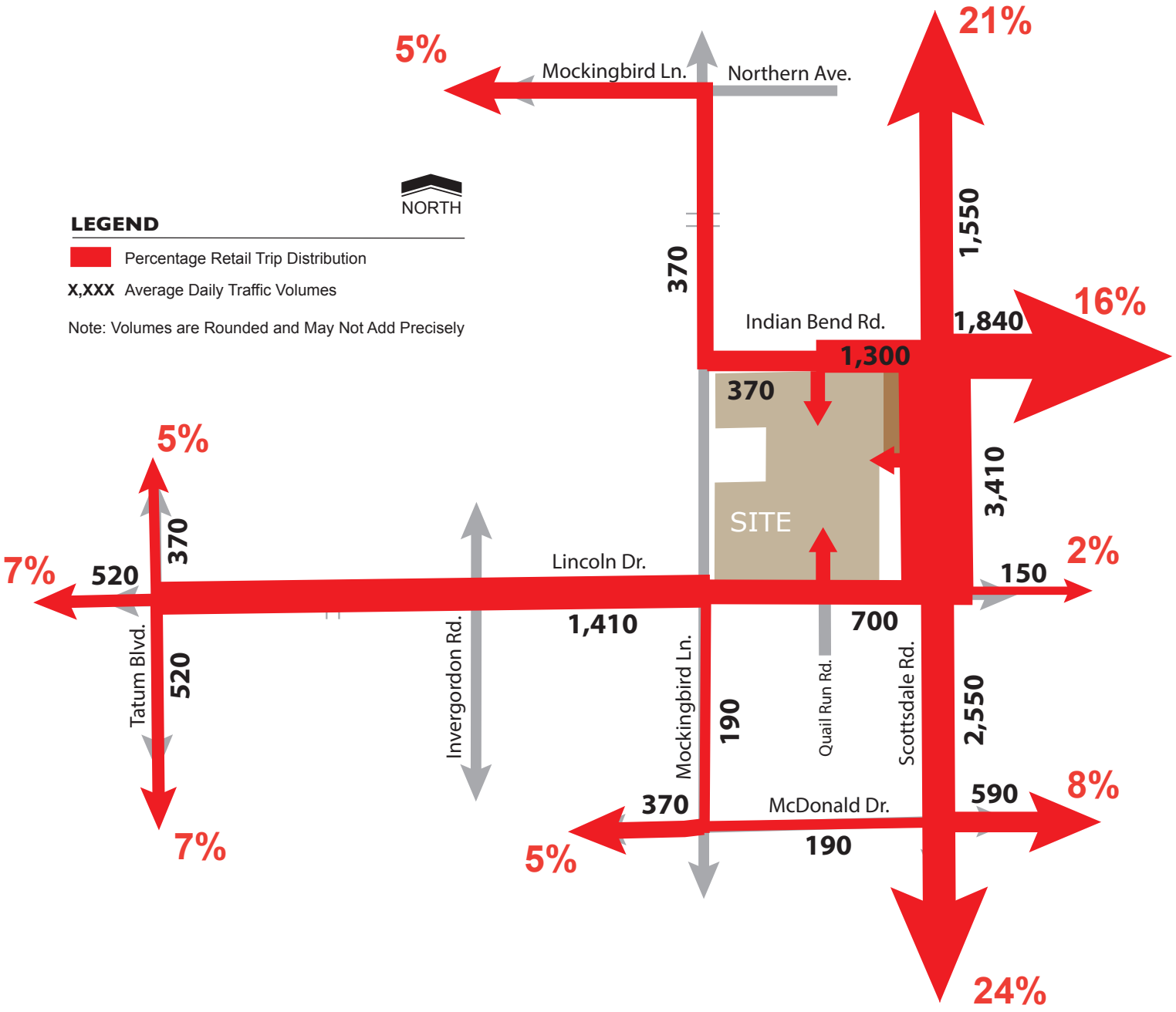


Figure 7: Retail Distribution

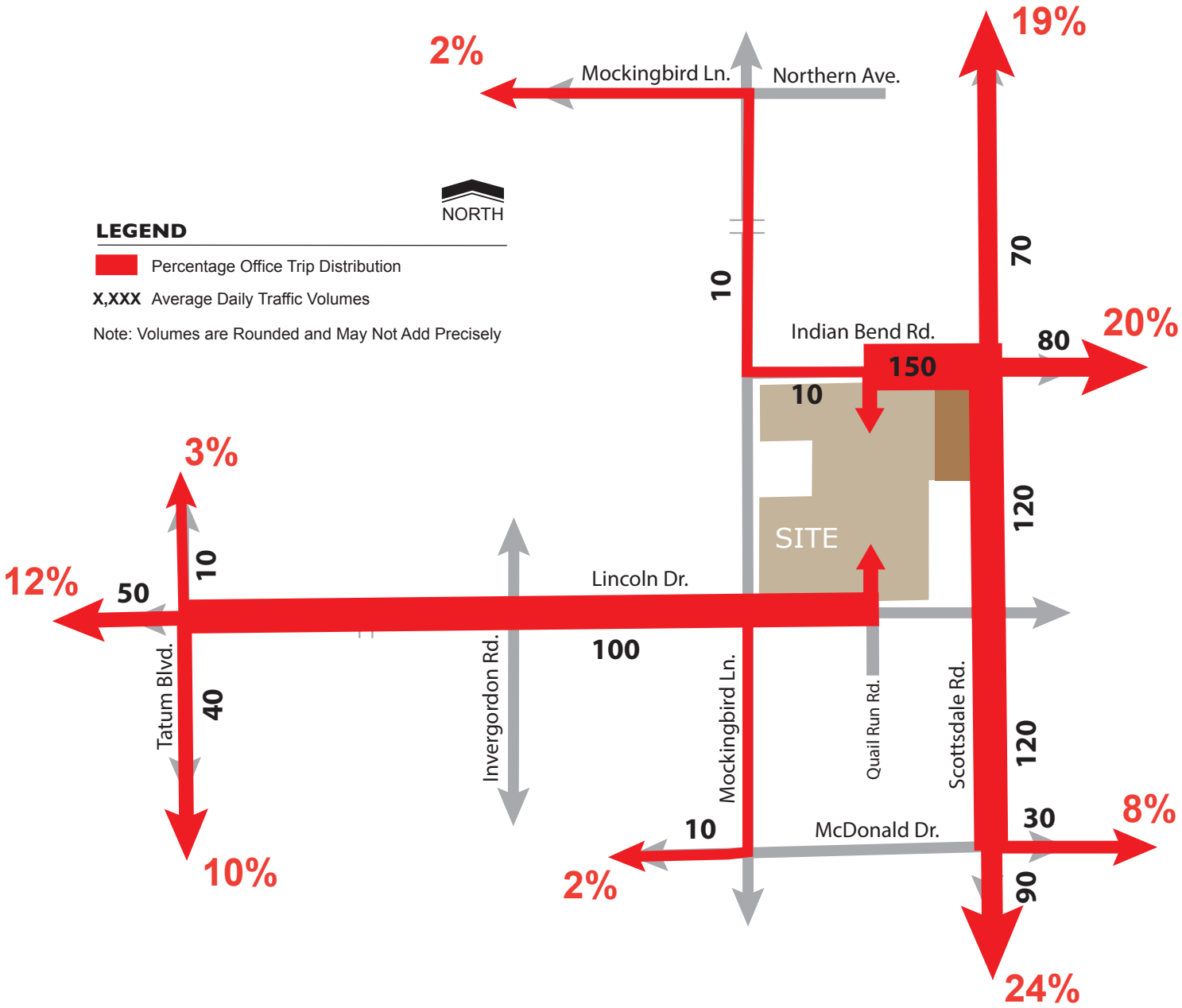
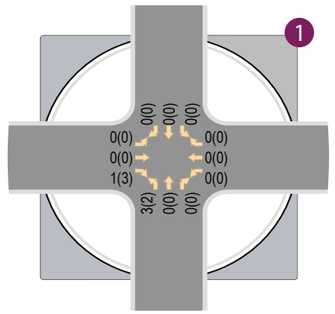
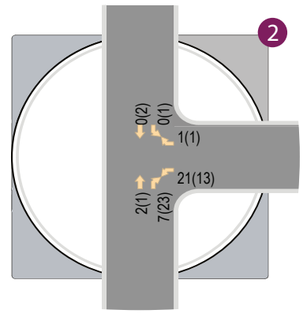


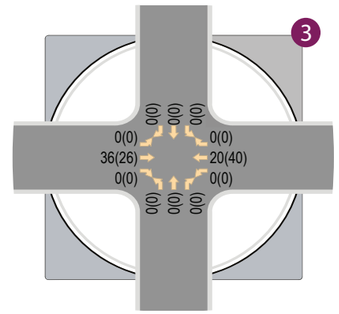
Figure 8: Office Distribution



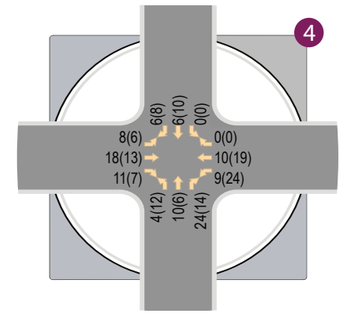
Mockingbird Ln. & Northern Ave.



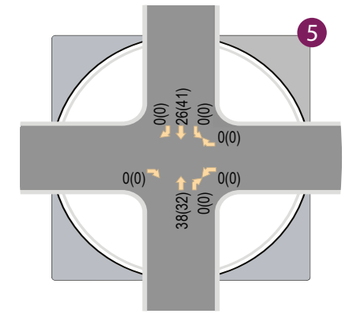
Mockingbird Ln. & Indian Bend Rd.



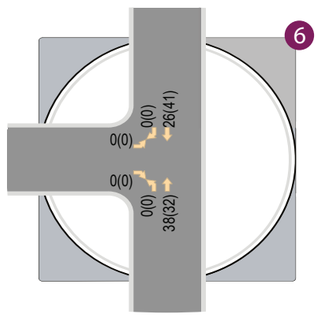
Scottsdale Plaza Resort & Indian Bend Rd.



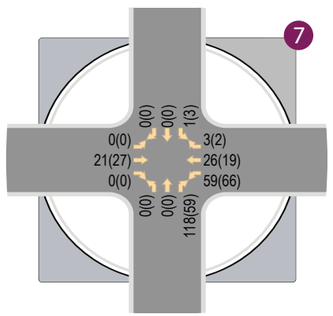
Scottsdale Rd. & Indian Bend Rd.



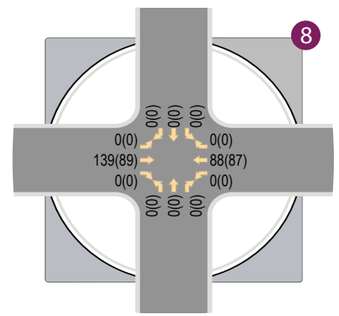
Scottsdale Rd. & Joshua Tree Ln.



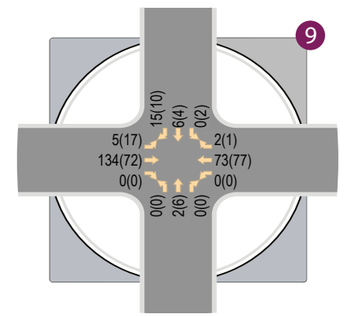
Scottsdale Rd. & 6750 North



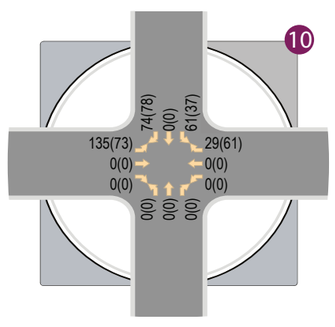
Tatum Blvd. & Lincoln Dr.



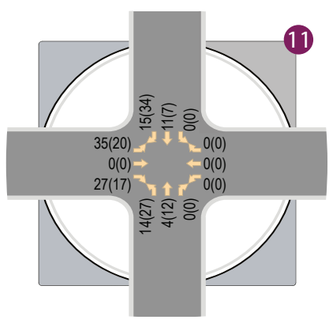
Invergordon Rd. & Lincoln Dr.



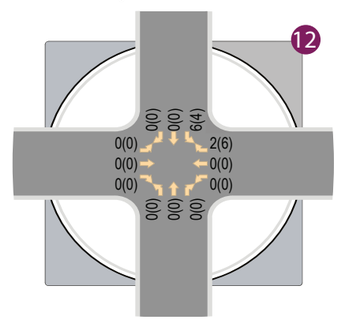
Mockingbird Ln. & Lincoln Dr.



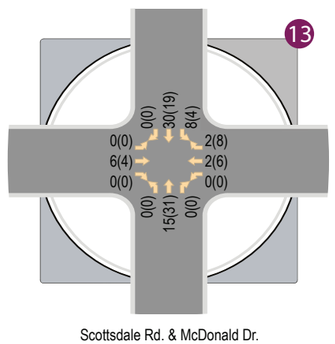
Quail Run Rd & Lincoln Dr.



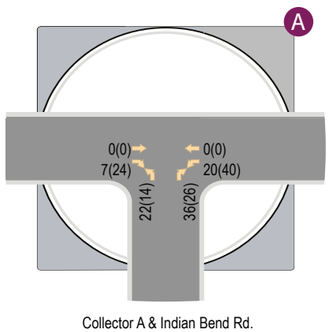
Scottsdale Rd. & Lincoln Dr.



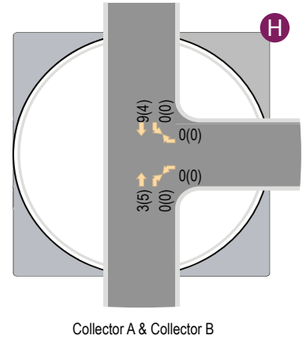
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



Collector A & Collector B

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

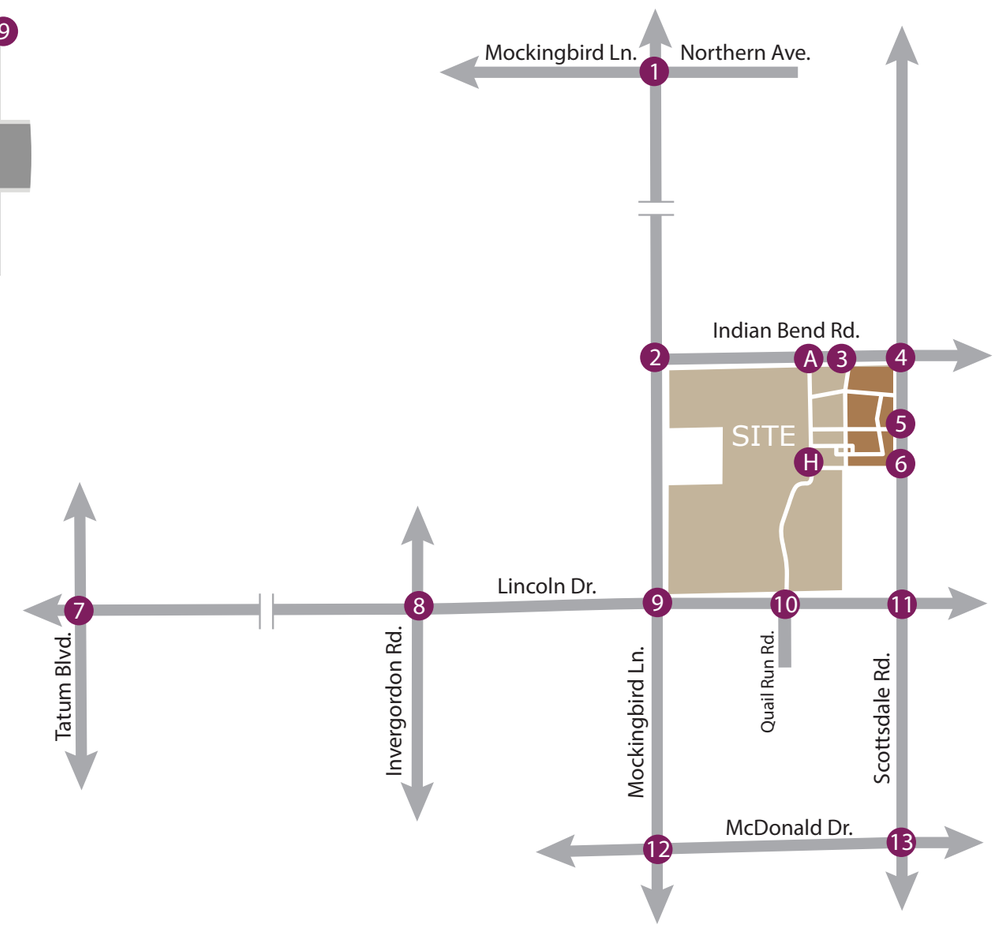
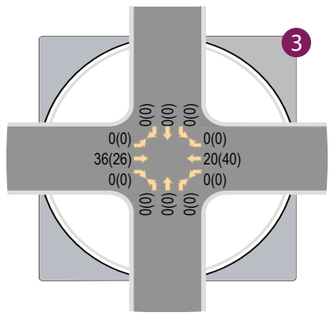
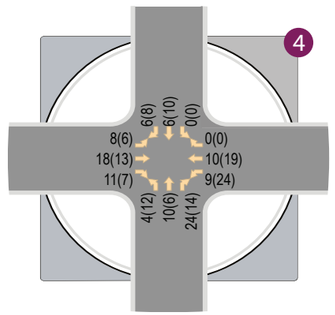


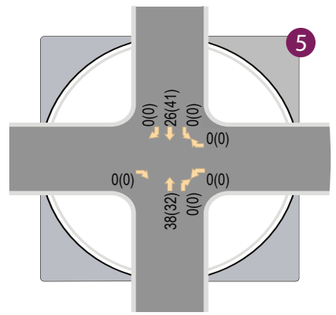
Figure 9: Site Generated Phase I Traffic Volumes A



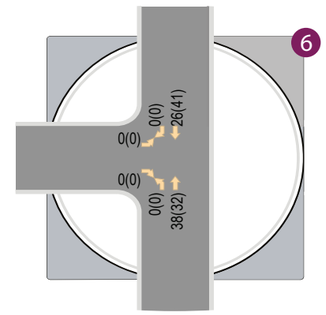
Scottsdale Plaza Resort & Indian Bend Rd.



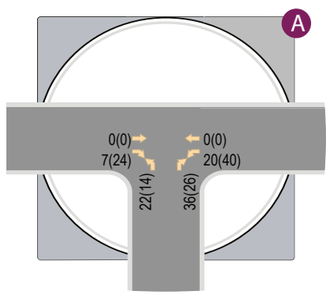
Scottsdale Rd. & Indian Bend Rd.



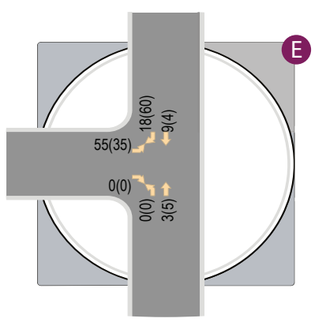
Scottsdale Rd. & Joshua Tree Ln.



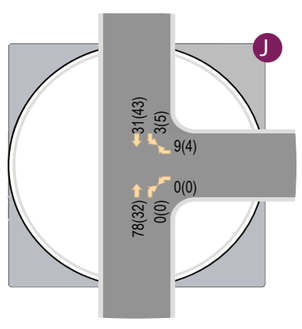
Scottsdale Rd. & 6750 North



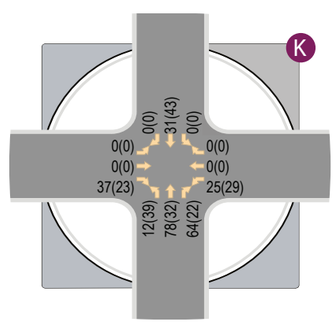
Collector A & Indian Bend Rd.



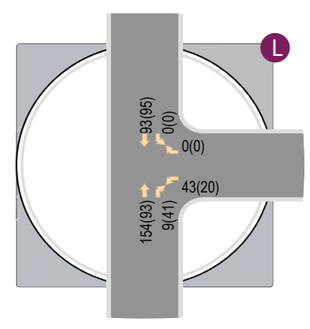
Quail Run Rd. & North Residential Access



Quail Run Rd. & Hotel Access



Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access

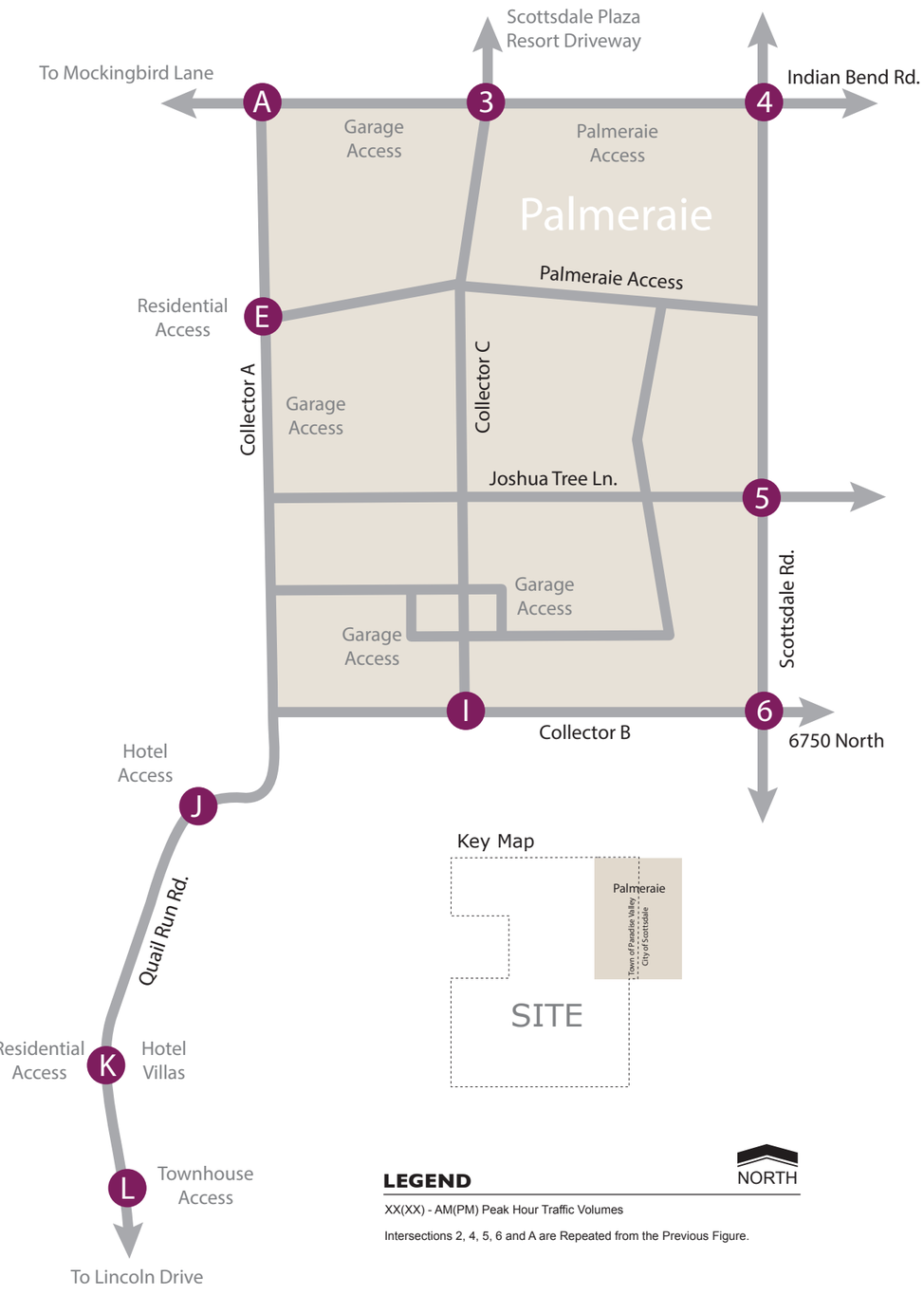
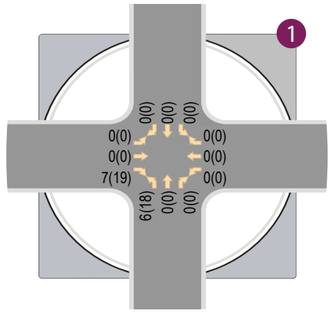
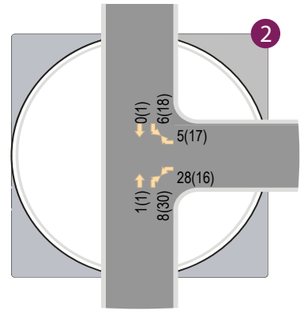


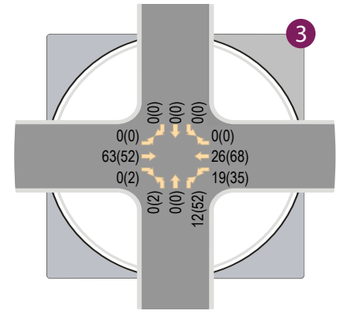
Figure 10: Site Generated Phase I Traffic Volumes B



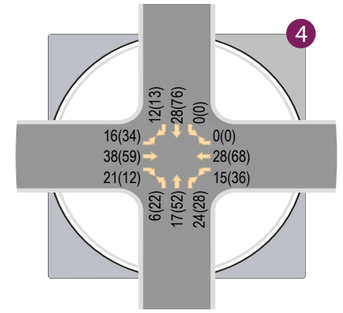
Mockingbird Ln. & Northern Ave.



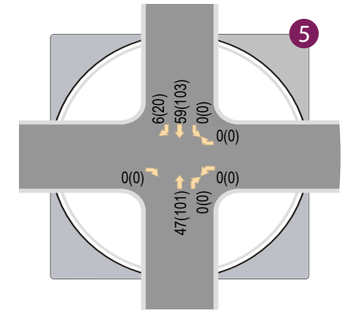
Mockingbird Ln. & Indian Bend Rd.



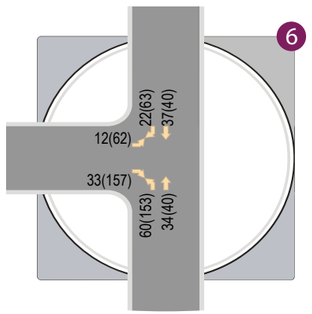
Scottsdale Plaza Resort & Indian Bend Rd.



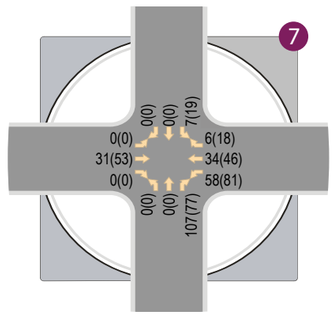
Scottsdale Rd. & Indian Bend Rd.



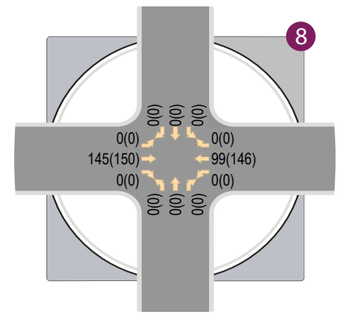
Scottsdale Rd. & Joshua Tree Ln.



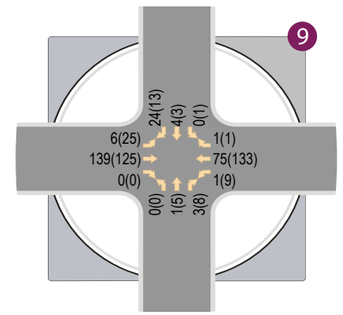
Scottsdale Rd. & 6750 North



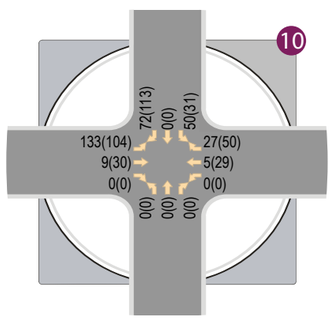
Tatum Blvd. & Lincoln Dr.



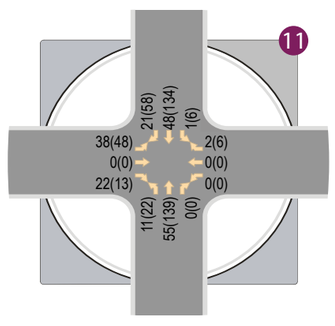
Invergordon Rd. & Lincoln Dr.



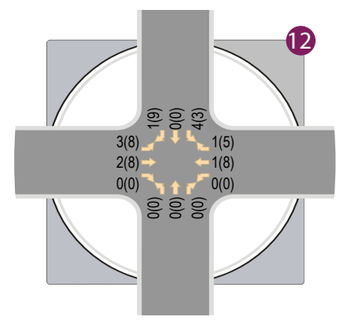
Mockingbird Ln. & Lincoln Dr.



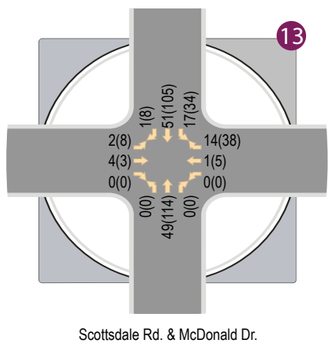
Quail Run Rd & Lincoln Dr.



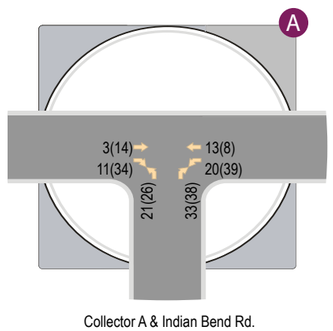
Scottsdale Rd. & Lincoln Dr.



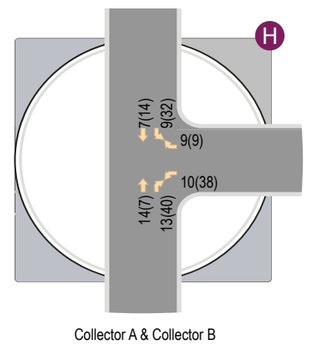
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



Collector A & Collector B

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

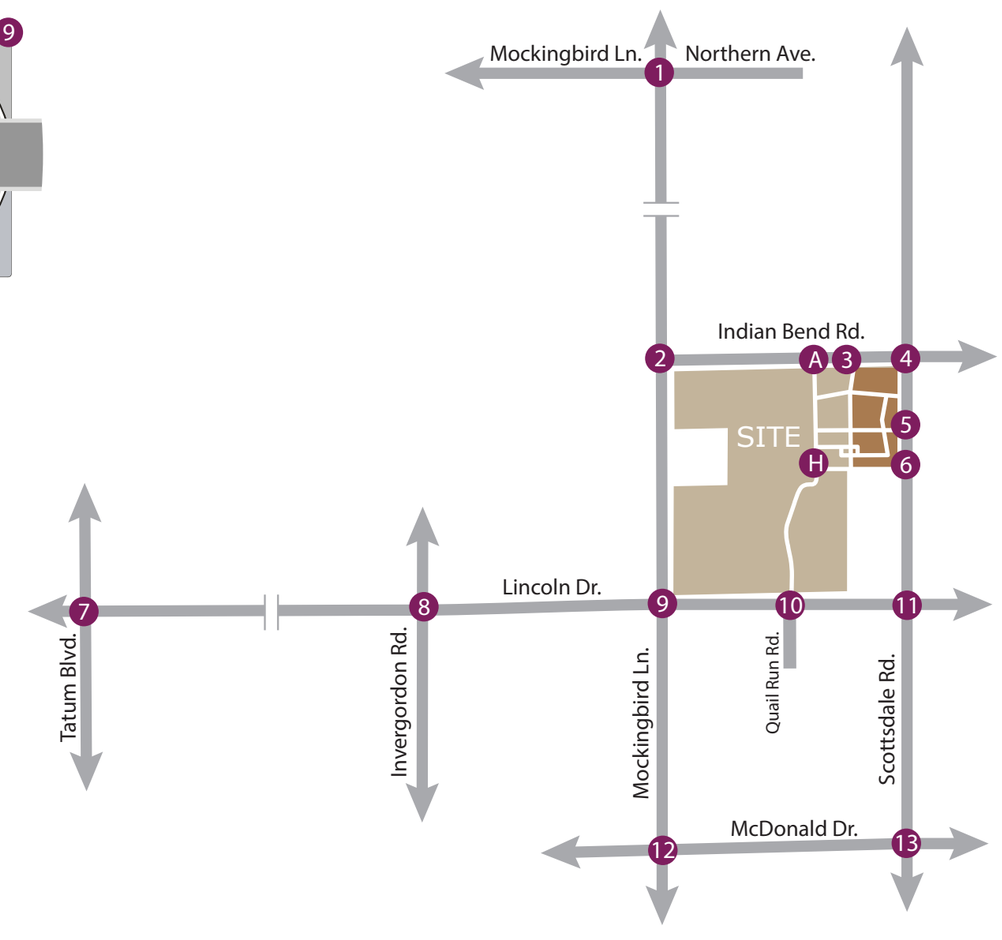
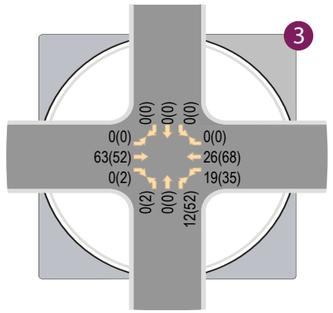
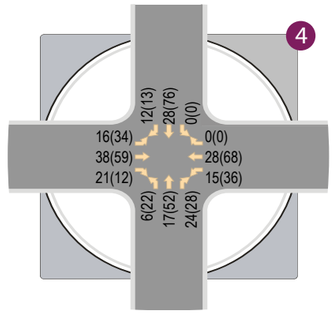


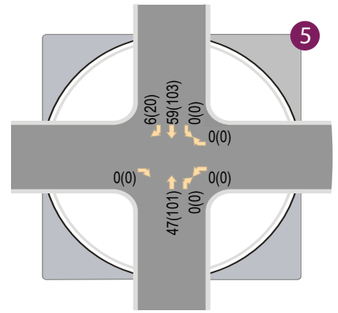
Figure 11: Site Buildout Traffic Volumes A



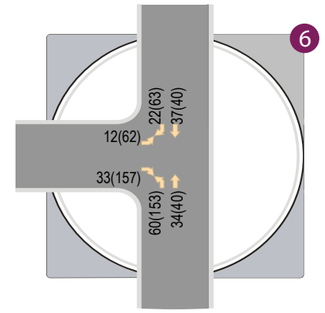
Scottsdale Plaza Resort & Indian Bend Rd.



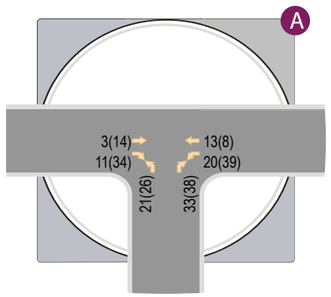
Scottsdale Rd. & Indian Bend Rd.



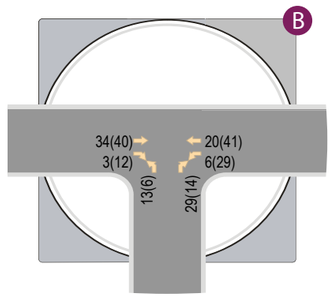
Scottsdale Rd. & Joshua Tree Ln.



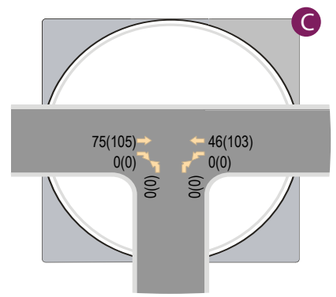
Scottsdale Rd. & 6750 North



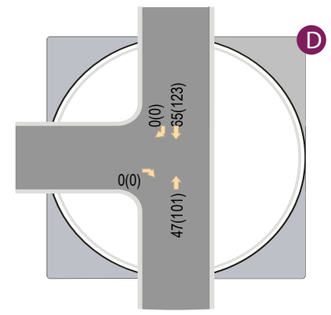
Collector A & Indian Bend Rd.



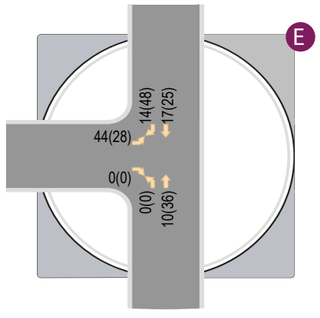
Garage Access & Indian Bend Rd.



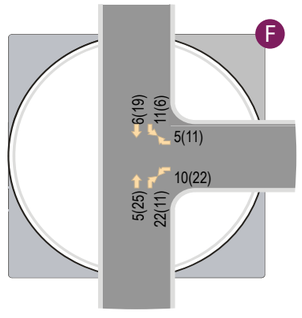
Palmeraie Access & Indian Bend Rd.



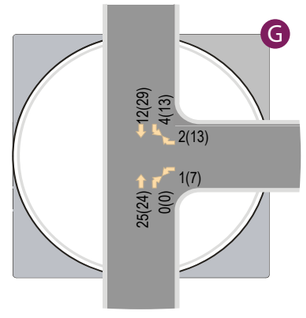
Scottsdale Rd. & Palmeraie Access



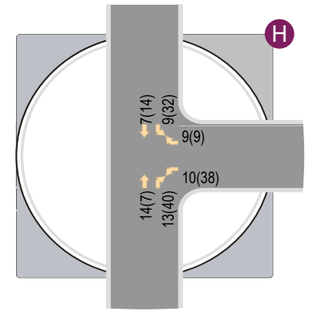
Quail Run Rd. & North Residential Access



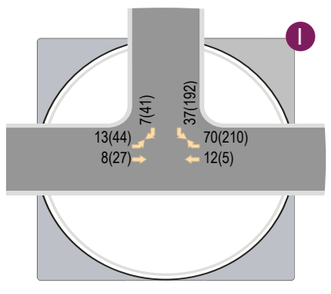
Collector A & Garage Access



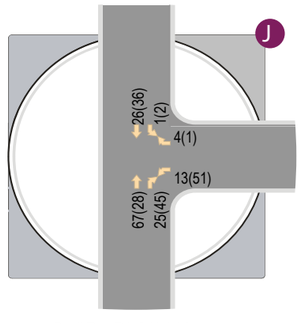
Collector A & Joshua Tree Ln.



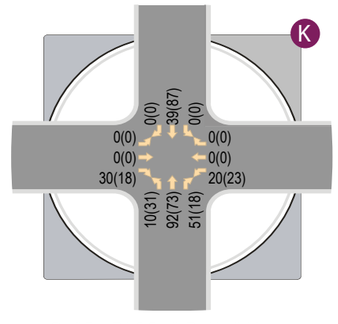
Collector A & Collector B



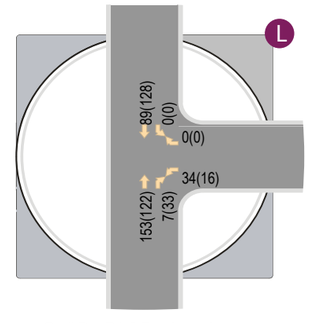
Collector C & Collector B



Quail Run Rd. & Hotel Access



Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access

Figure 12: Site Buildout Traffic Volumes B

FUTURE BACKGROUND TRAFFIC

Background traffic is often projected by applying a growth factor to existing traffic. To determine an appropriate growth factor, daily traffic volumes within the vicinity of the site, published by the Town of Paradise Valley and the City of Scottsdale, were reviewed. For purposes of this study, a 0.5 percent annual growth rate was applied to traffic volumes on major roadways. This growth rate equates to growth factors of 1.015, 1.041, 1.067 and 1.094 for the study years 2018, 2023, 2028 and 2033, respectively. Background growth calculations are included within **Appendix G**.

The adjacent Palmeraie development will also add traffic to the study roadways. Palmeraie is located on the southwest corner of Scottsdale Road and Indian Bend Road. Palmeraie is a planned retail development consisting of approximately 300,000 SF of retail and restaurant land uses, a 175 room hotel and 235 resort hotel condominium units. Access to Palmeraie will be provided at the driveways on Indian Bend Road and Scottsdale Road previously discussed. The developer of Ritz-Carlton is also the owner of the proposed Palmeraie development and is anticipated to develop Palmeraie concurrently with Parcel E of the site. The site generated traffic by Palmeraie, as projected within the TIMA, is considered as background traffic within this study. As the access points have changed, the trips were redistributed according to the trip distributions presented that were applied to the site.

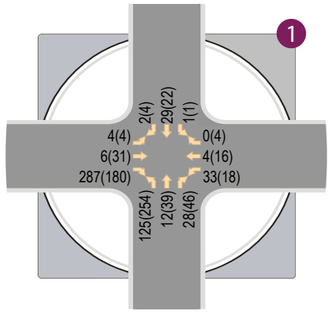
The nearby Mountain Shadows Resort redevelopment will also add traffic to the study roadways. Mountain Shadows Resort is located on the southern corners of 56th Street and Lincoln Drive. The redevelopment will construct new hotel facilities. The site generated traffic by Mountain Shadows Resort, as projected within the TIA, is considered as background traffic within this study.

Selected excerpts of the *Palmeraie Traffic Impact and Mitigation Analysis*, *Mountain Shadows Traffic impact Analysis* and traffic volume depictions are included within **Appendix G**. Any traffic volumes generated by any other developments are assumed to be accounted for within the growth factors applied to the existing traffic counts.

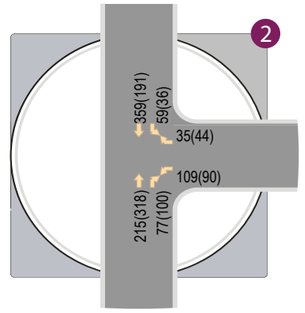
The background traffic for the study years are projected by applying the applicable growth factor to the existing traffic volumes and then adding the traffic generated by Palmeraie and Mountain Shadows Resort. Projected background traffic for 2018 is depicted in **Figure 13** and **Figure 14**. Projected background traffic for 2023 is depicted in **Figure 15** and **Figure 16**. Projected background traffic for 2028 is depicted in **Figure 17** and **Figure 18**. Projected background traffic for 2033 is depicted in **Figure 19** and **Figure 20**.

TOTAL TRAFFIC

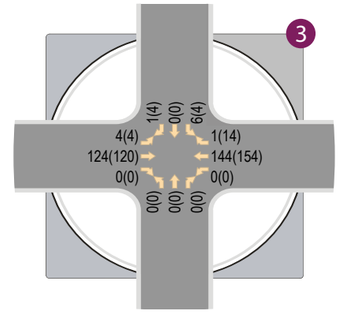
Total traffic was determined by adding the site generated traffic to the background traffic for each study year. Projected total traffic for 2018 is depicted in **Figure 21** and **Figure 22**. Projected total traffic for 2023 is depicted in **Figure 23** and **Figure 24**. Projected background total for 2028 is depicted in **Figure 25** and **Figure 26**. Projected background total for 2033 is depicted in **Figure 27** and **Figure 28**.



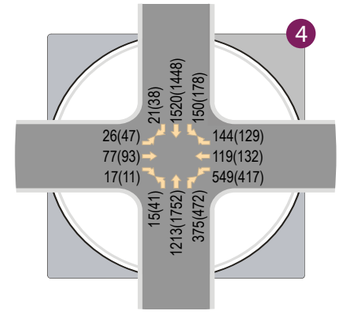
Mockingbird Ln. & Northern Ave.



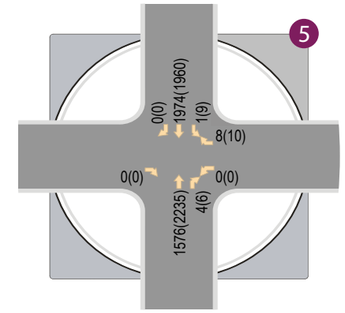
Mockingbird Ln. & Indian Bend Rd.



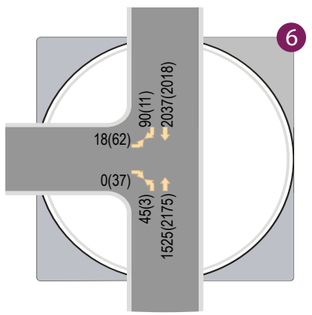
Scottsdale Plaza Resort & Indian Bend Rd.



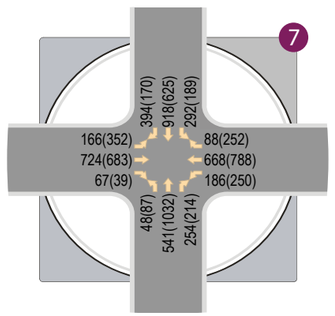
Scottsdale Rd. & Indian Bend Rd.



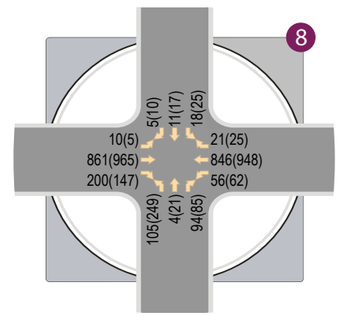
Scottsdale Rd. & Joshua Tree Ln.



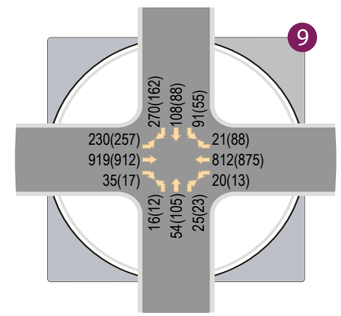
Scottsdale Rd. & 6750 North



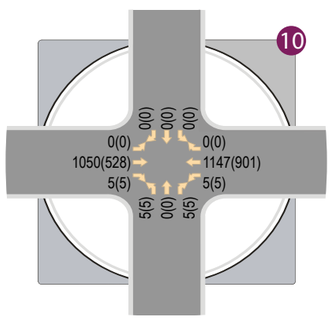
Tatum Blvd. & Lincoln Dr.



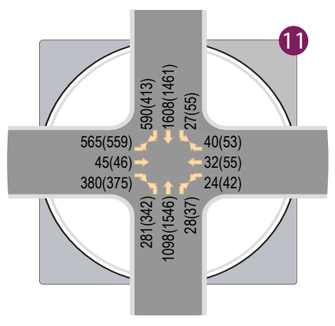
Invergordon Rd. & Lincoln Dr.



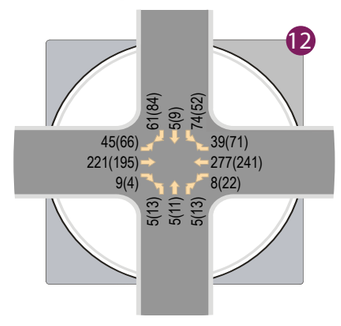
Mockingbird Ln. & Lincoln Dr.



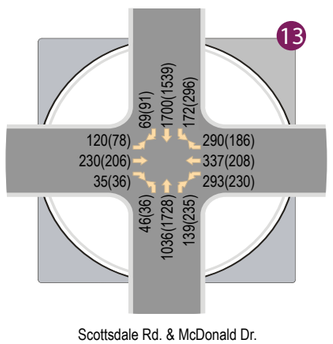
Quail Run Rd & Lincoln Dr.



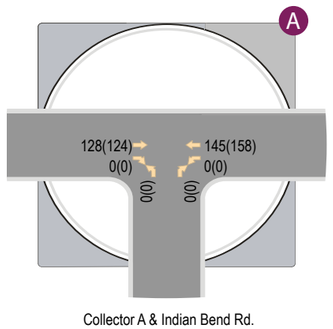
Scottsdale Rd. & Lincoln Dr.



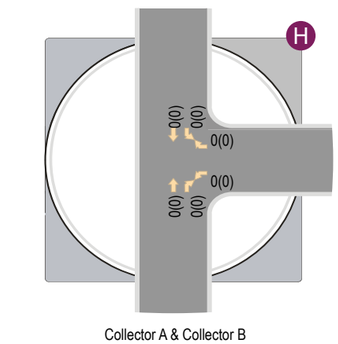
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



Collector A & Collector B

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

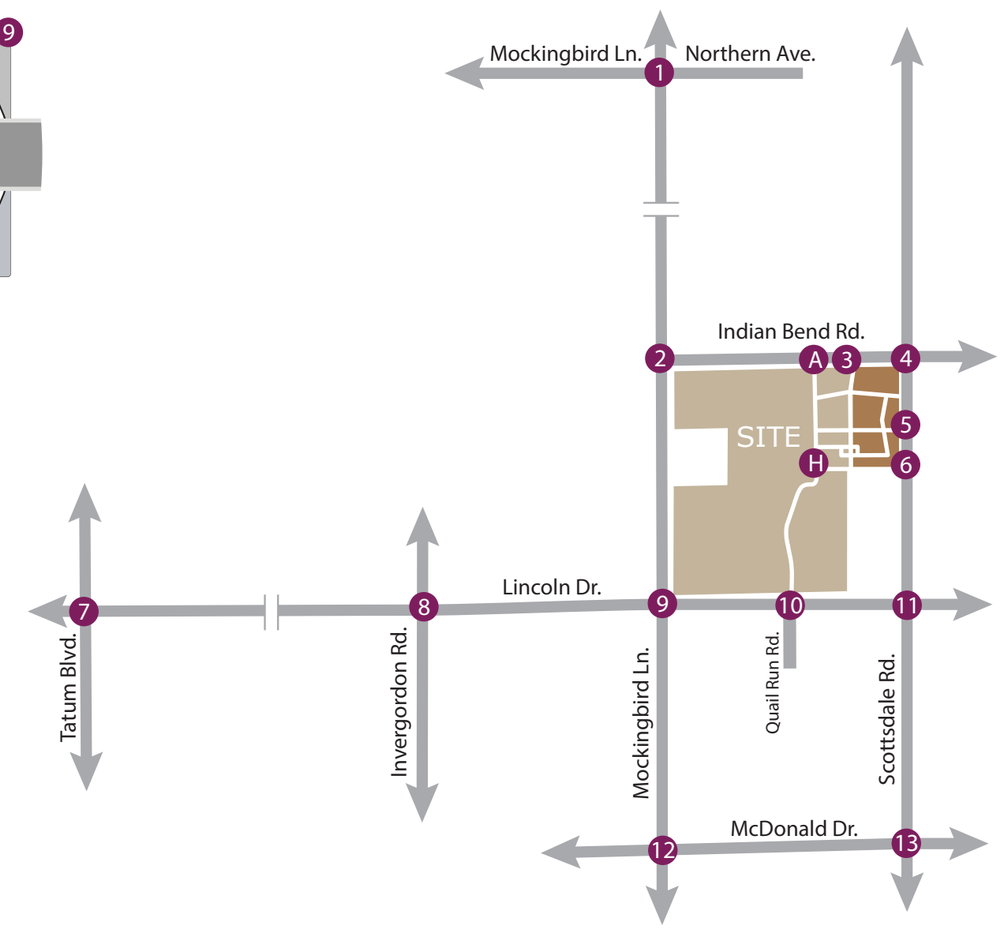
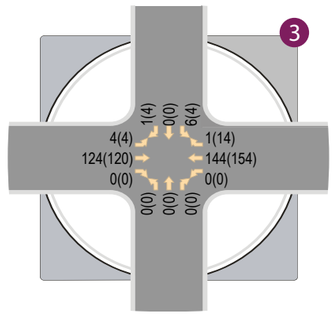
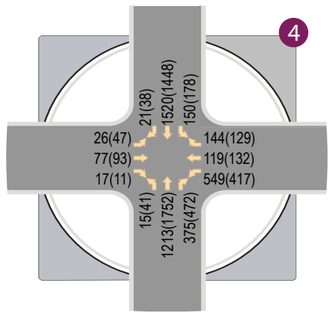


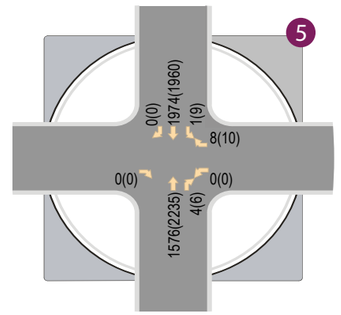
Figure 13: 2018 Background Traffic Volumes A



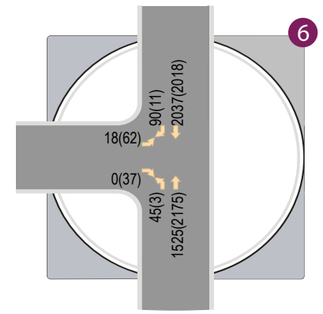
Scottsdale Plaza Resort & Indian Bend Rd.



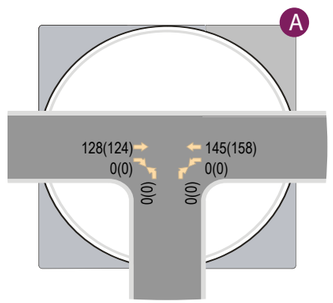
Scottsdale Rd. & Indian Bend Rd.



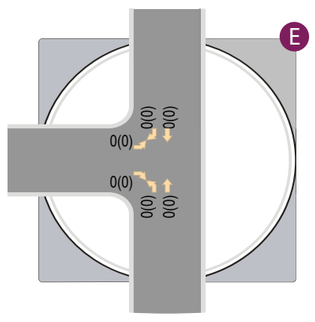
Scottsdale Rd. & Joshua Tree Ln.



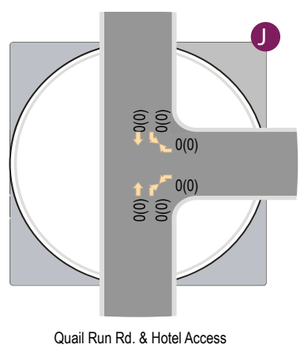
Scottsdale Rd. & 6750 North



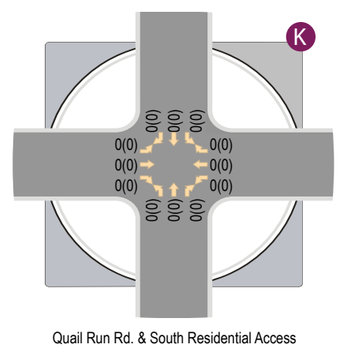
Collector A & Indian Bend Rd.



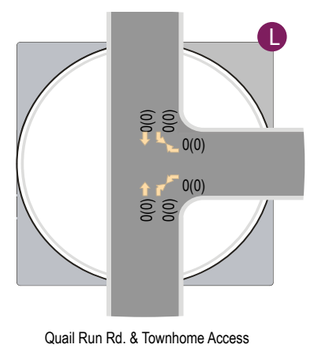
Quail Run Rd. & North Residential Access



Quail Run Rd. & Hotel Access



Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access

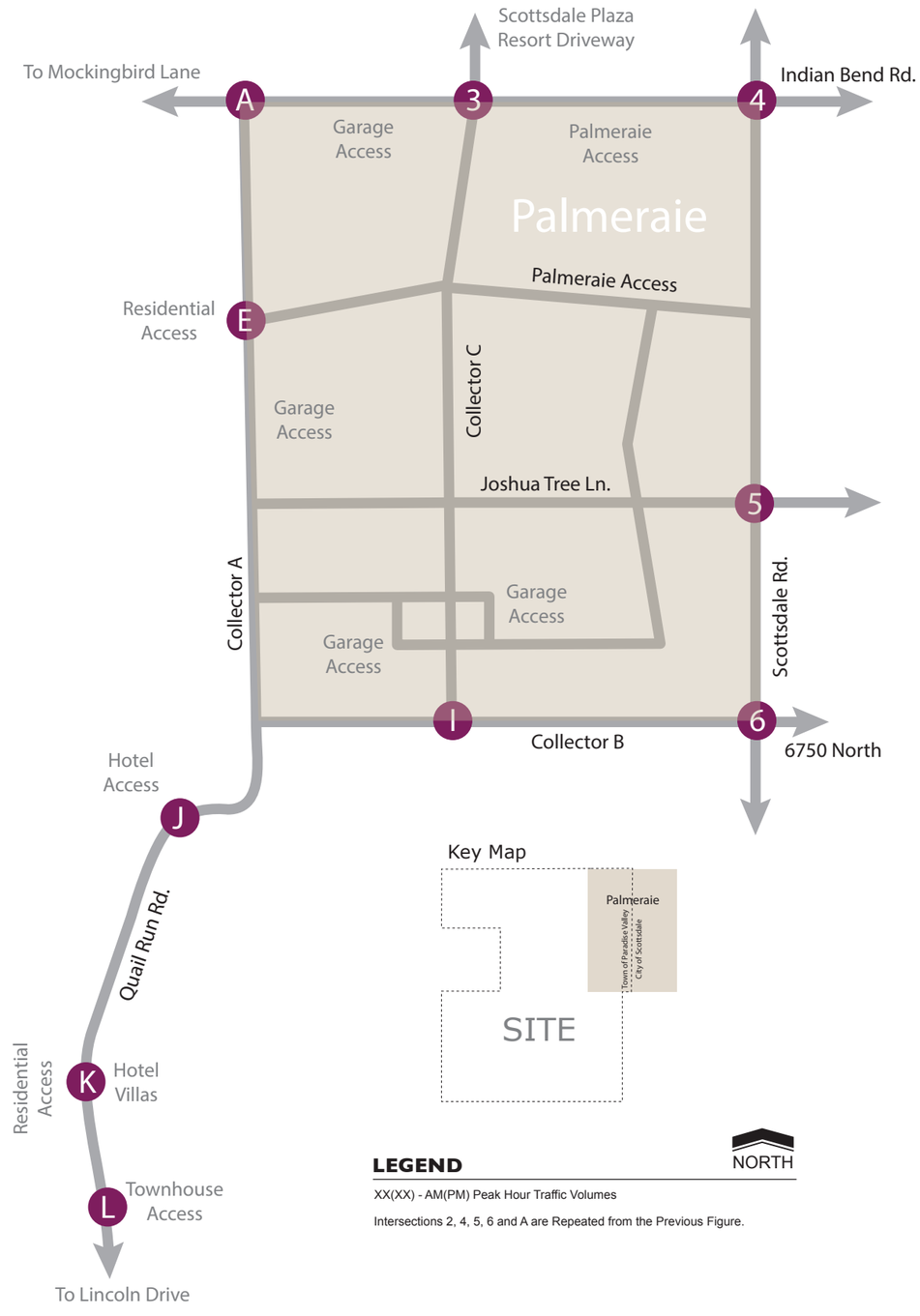
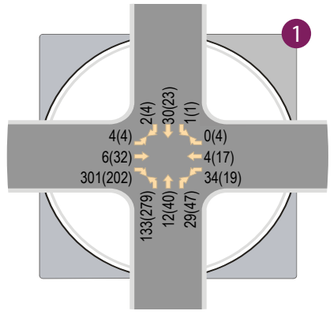
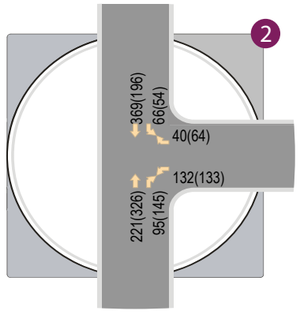


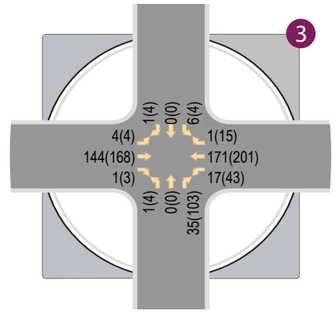
Figure 14: 2018 Background Traffic Volumes B



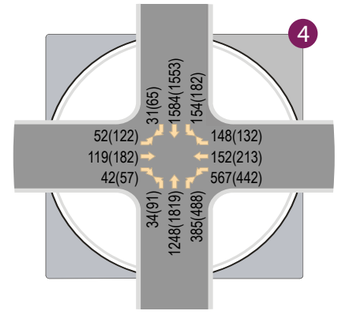
Mockingbird Ln. & Northern Ave.



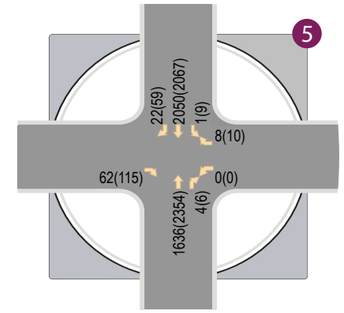
Mockingbird Ln. & Indian Bend Rd.



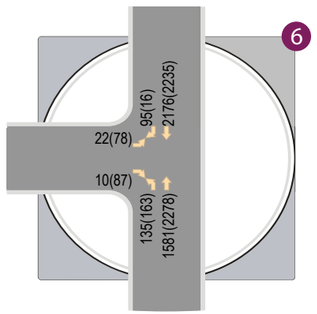
Scottsdale Plaza Resort & Indian Bend Rd.



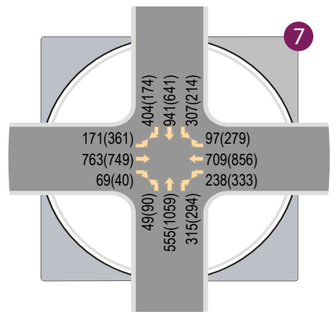
Scottsdale Rd. & Indian Bend Rd.



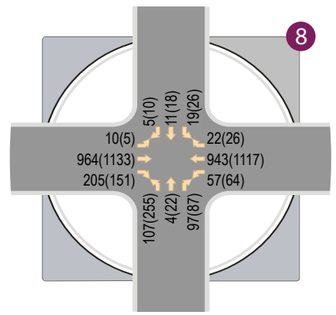
Scottsdale Rd. & Joshua Tree Ln.



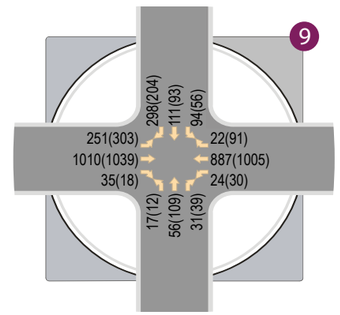
Scottsdale Rd. & 6750 North



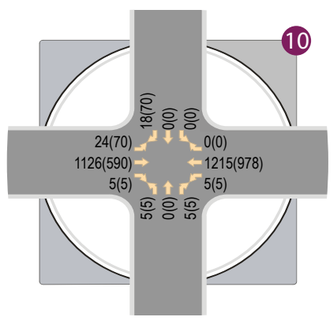
Tatum Blvd. & Lincoln Dr.



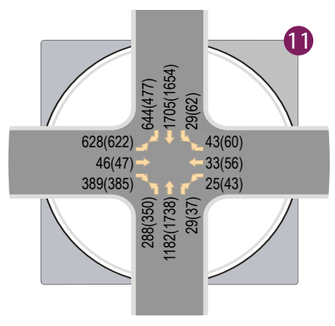
Invergordon Rd. & Lincoln Dr.



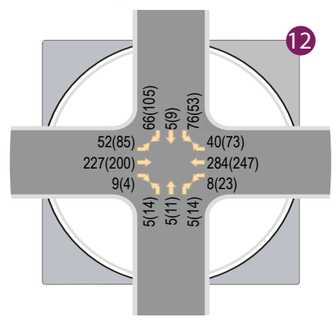
Mockingbird Ln. & Lincoln Dr.



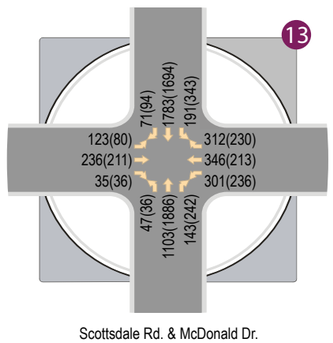
Quail Run Rd & Lincoln Dr.



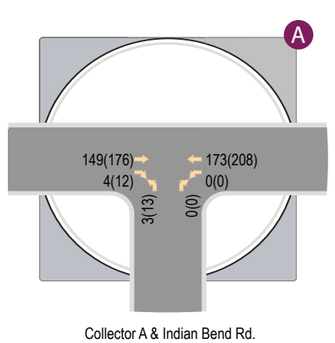
Scottsdale Rd. & Lincoln Dr.



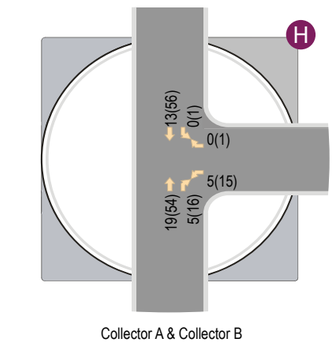
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



Collector A & Collector B

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

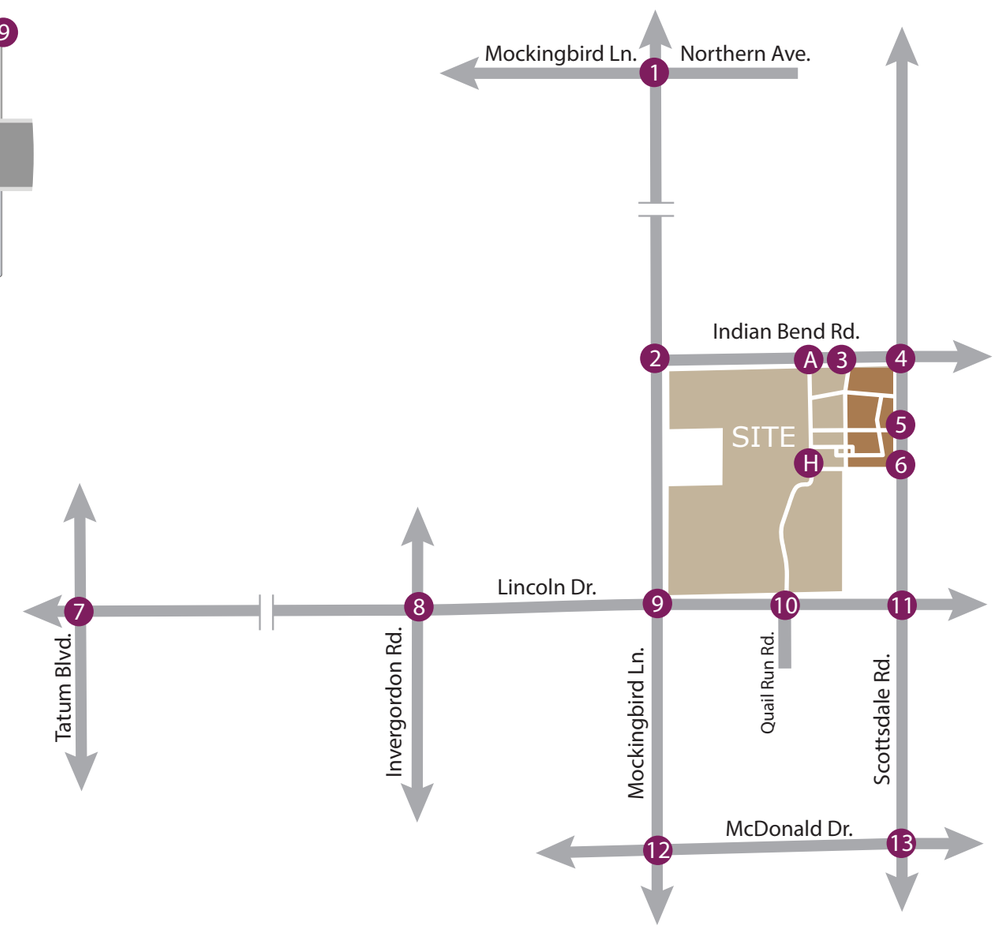
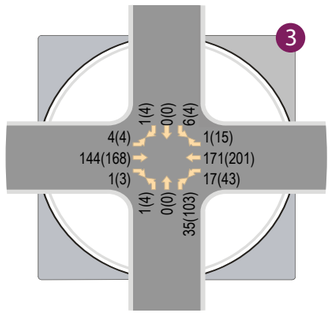
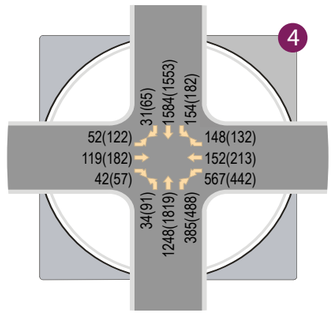


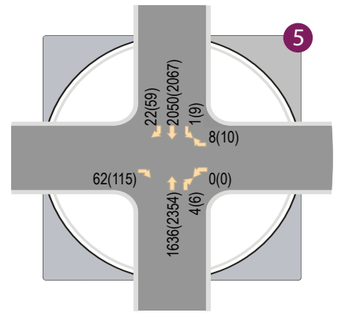
Figure 15: 2023 Background Traffic Volumes A



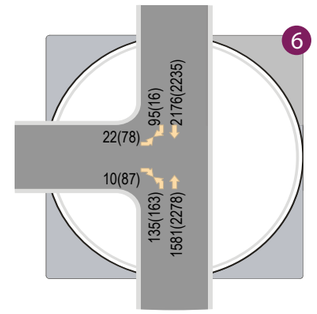
Scottsdale Plaza Resort & Indian Bend Rd.



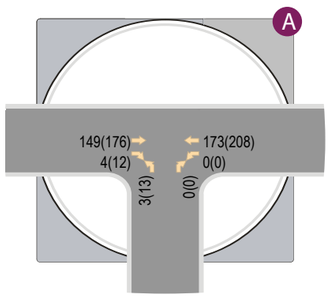
Scottsdale Rd. & Indian Bend Rd.



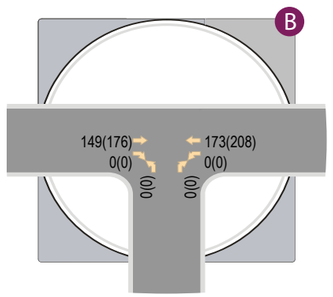
Scottsdale Rd. & Joshua Tree Ln.



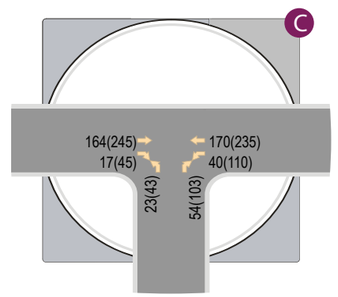
Scottsdale Rd. & 6750 North



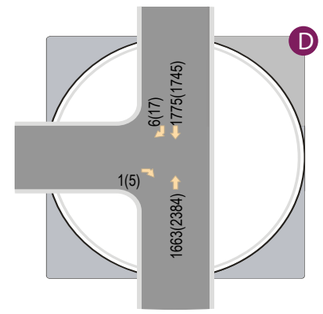
Collector A & Indian Bend Rd.



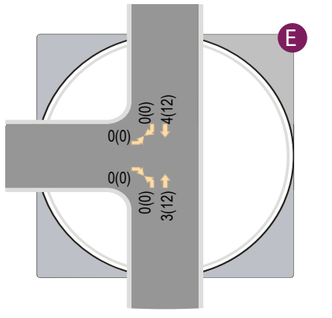
Garage Access & Indian Bend Rd.



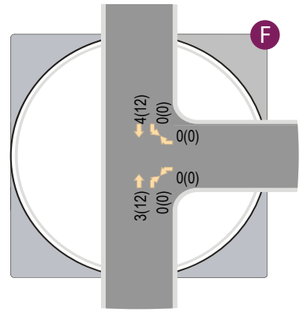
Palmeraie Access & Indian Bend Rd.



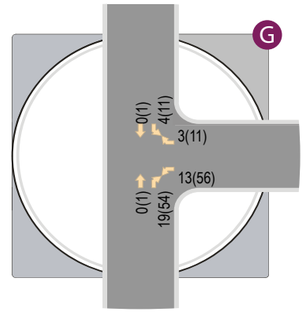
Scottsdale Rd. & Palmeraie Access



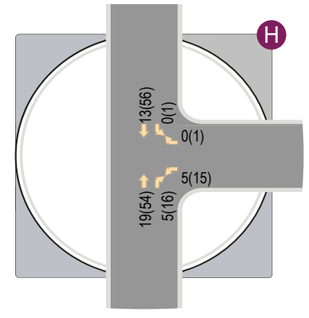
Quail Run Rd. & North Residential Access



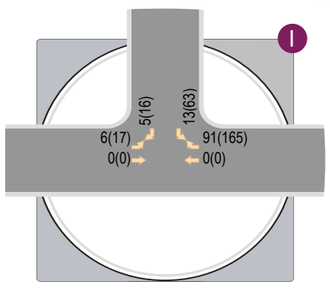
Collector A & Garage Access



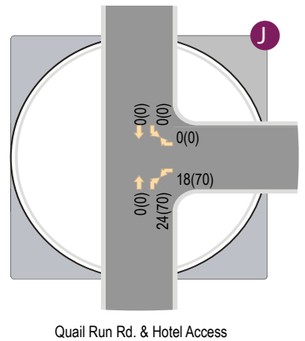
Collector A & Joshua Tree Ln.



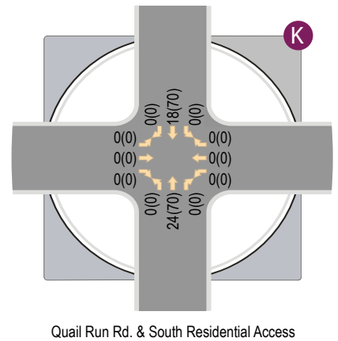
Collector A & Collector B



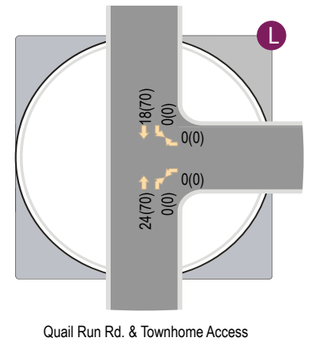
Collector C & Collector B



Quail Run Rd. & Hotel Access



Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access

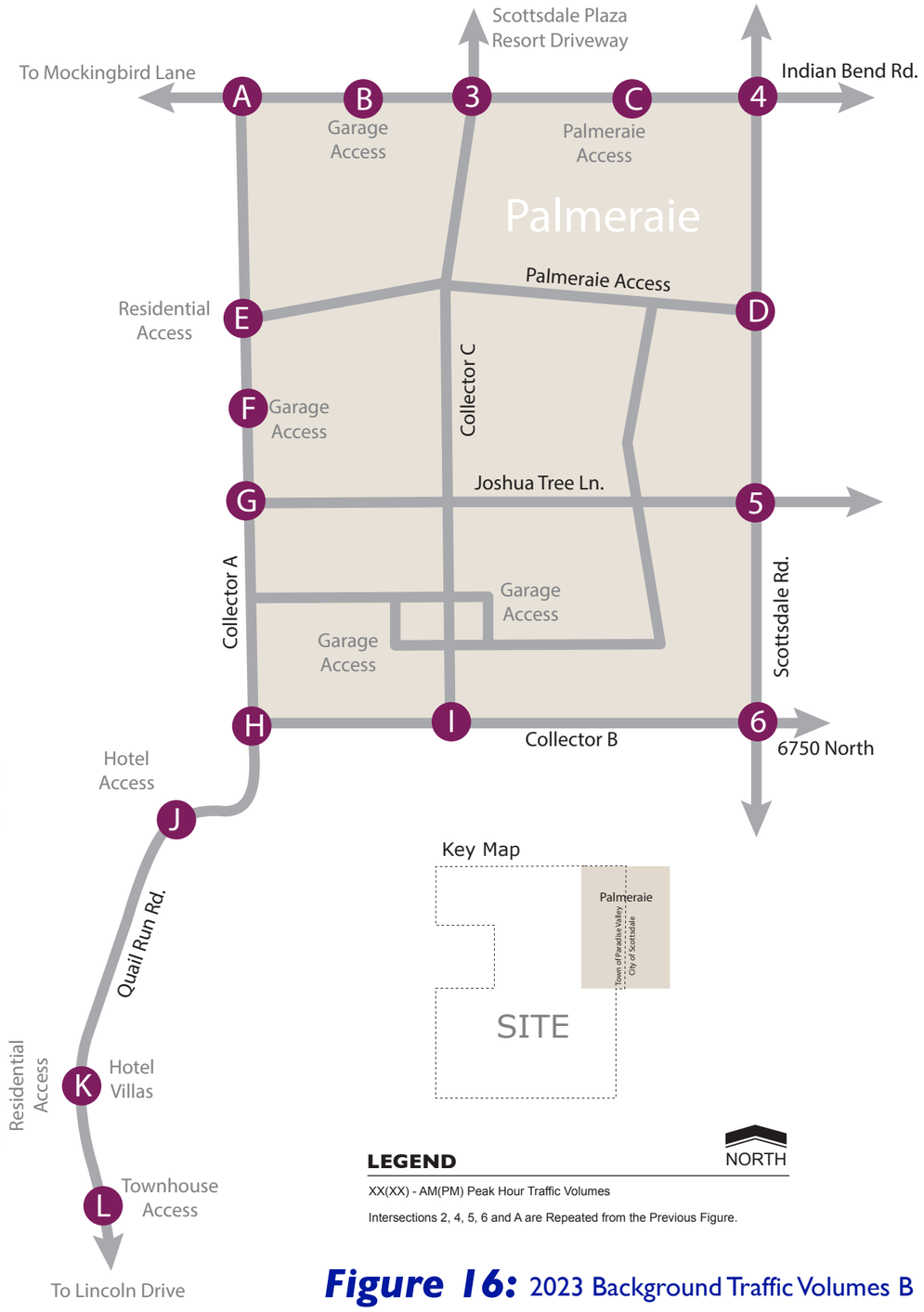
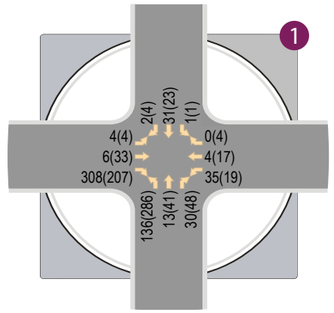
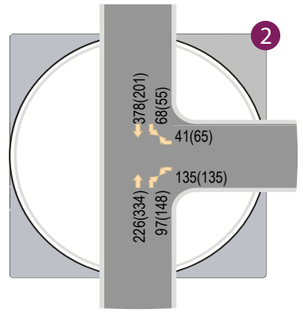


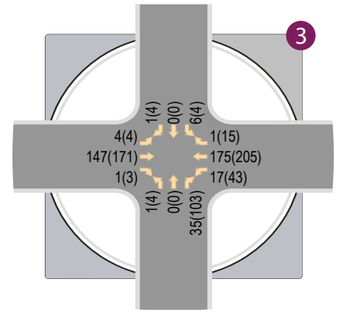
Figure 16: 2023 Background Traffic Volumes B



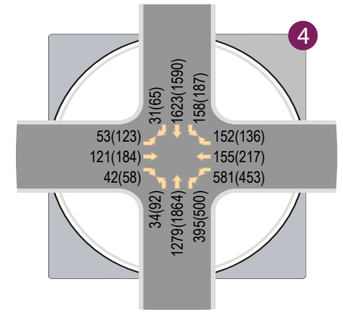
Mockingbird Ln. & Northern Ave.



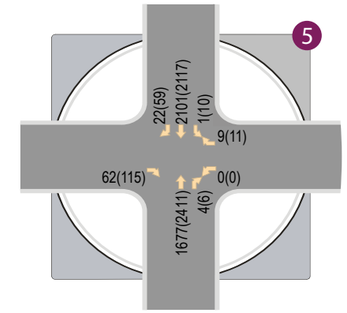
Mockingbird Ln. & Indian Bend Rd.



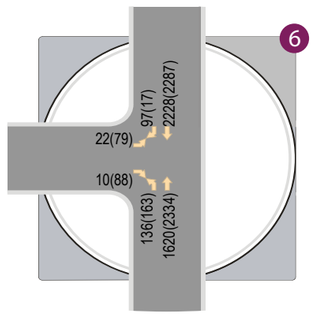
Scottsdale Plaza Resort & Indian Bend Rd.



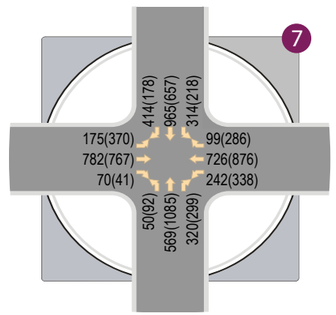
Scottsdale Rd. & Indian Bend Rd.



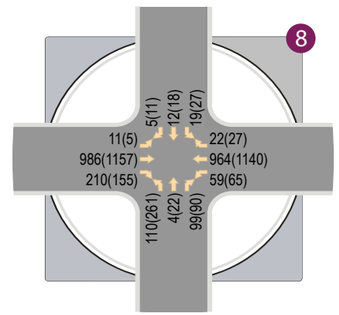
Scottsdale Rd. & Joshua Tree Ln.



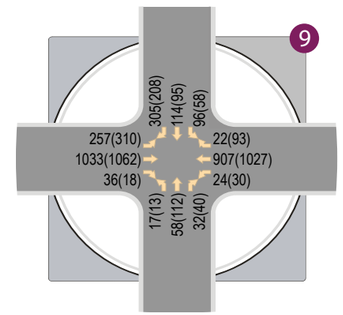
Scottsdale Rd. & 6750 North



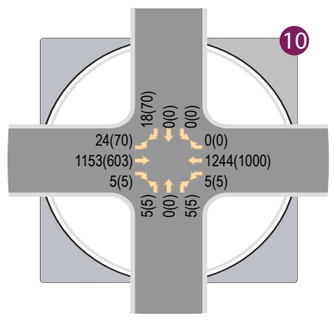
Tatum Blvd. & Lincoln Dr.



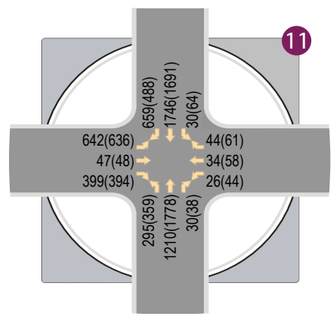
Invergordon Rd. & Lincoln Dr.



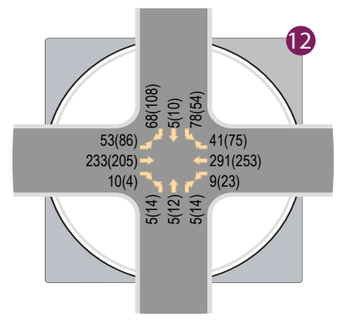
Mockingbird Ln. & Lincoln Dr.



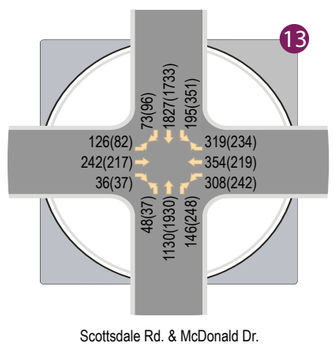
Quail Run Rd & Lincoln Dr.



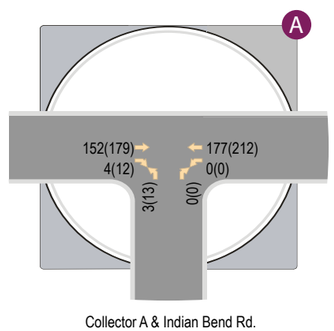
Scottsdale Rd. & Lincoln Dr.



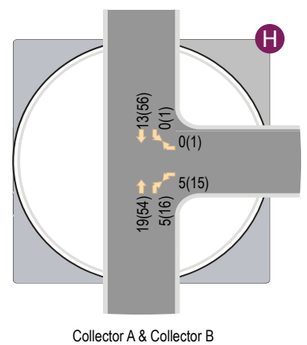
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



Collector A & Collector B

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

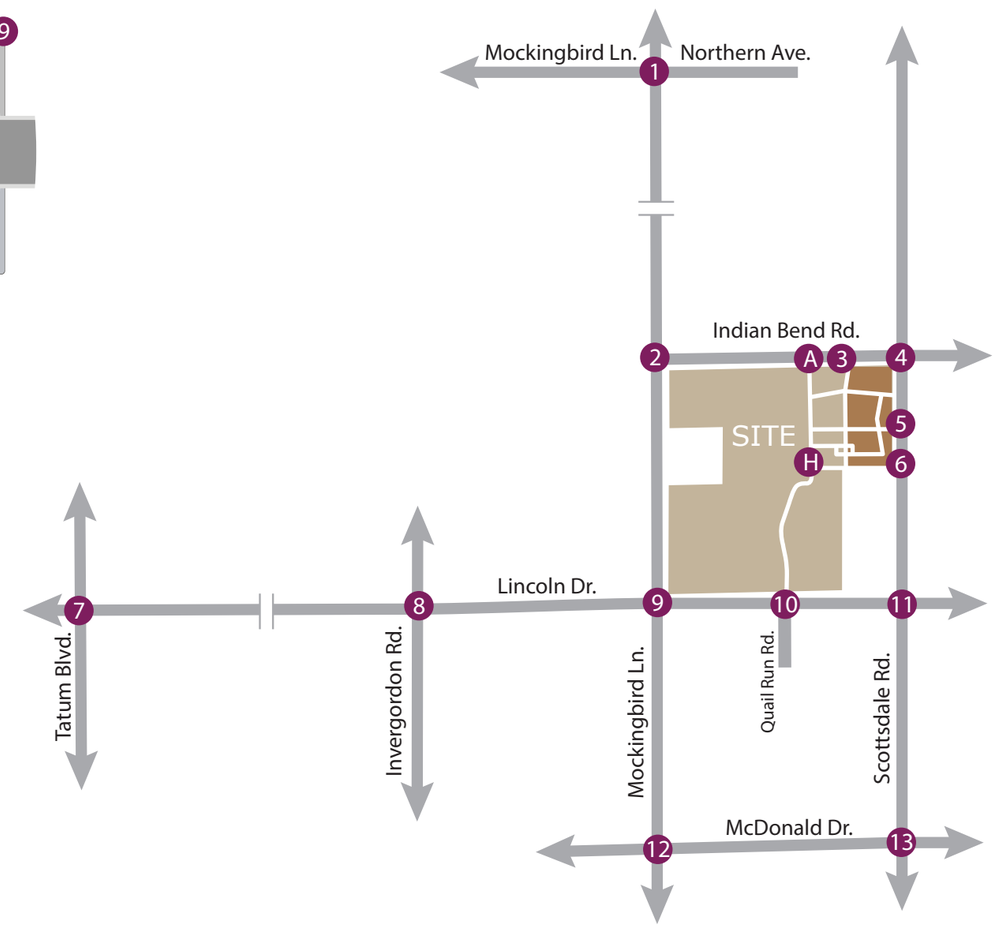
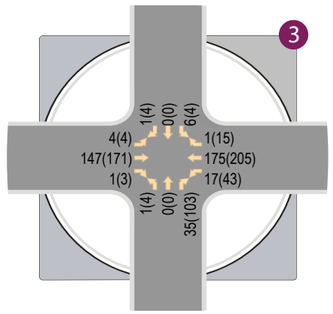
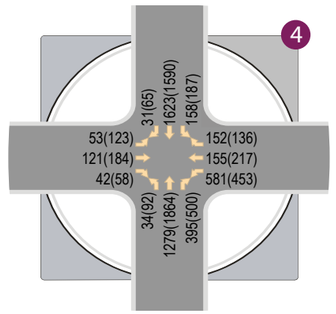


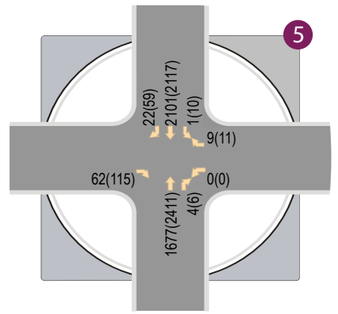
Figure 17: 2028 Background Traffic Volumes A



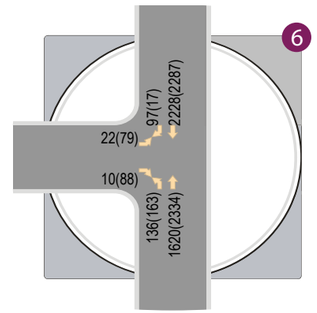
Scottsdale Plaza Resort & Indian Bend Rd.



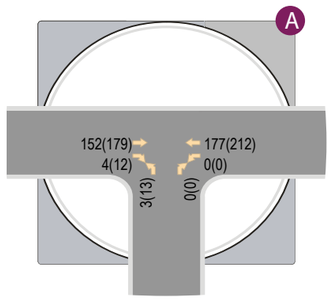
Scottsdale Rd. & Indian Bend Rd.



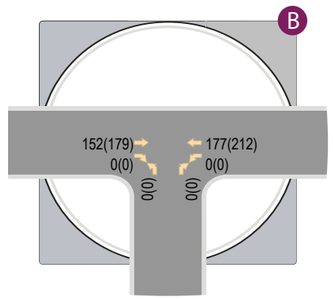
Scottsdale Rd. & Joshua Tree Ln.



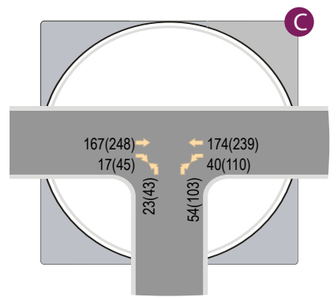
Scottsdale Rd. & 6750 North



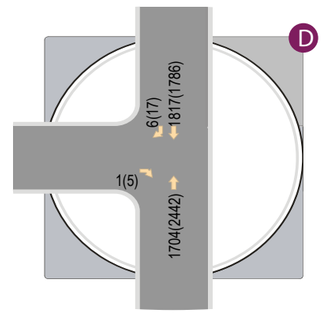
Collector A & Indian Bend Rd.



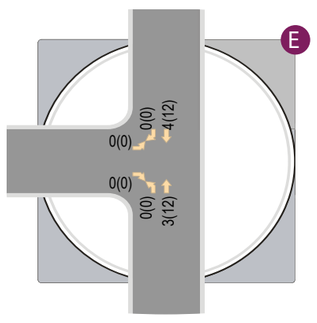
Garage Access & Indian Bend Rd.



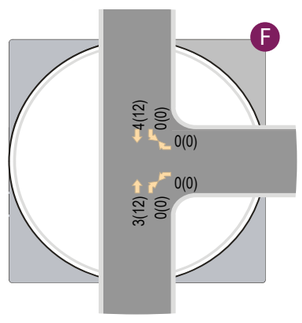
Palmeraie Access & Indian Bend Rd.



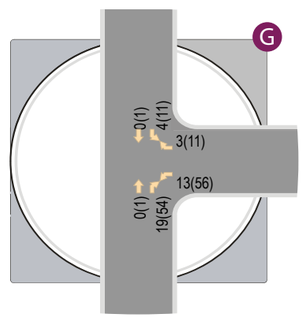
Scottsdale Rd. & Palmeraie Access



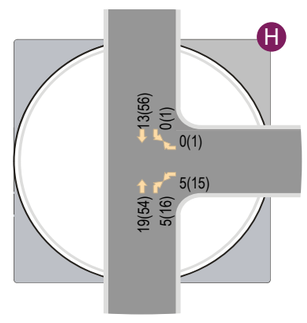
Quail Run Rd. & North Residential Access



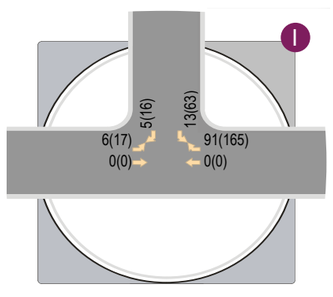
Collector A & Garage Access



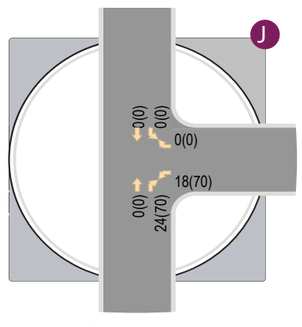
Collector A & Joshua Tree Ln.



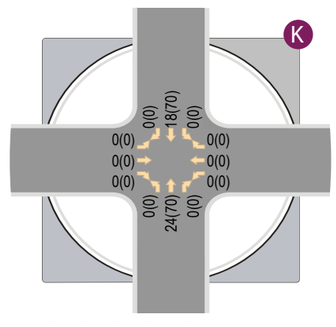
Collector A & Collector B



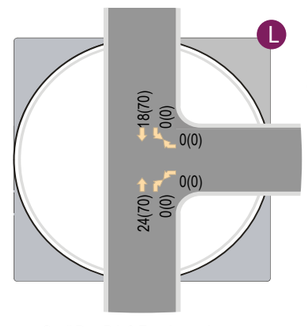
Collector C & Collector B



Quail Run Rd. & Hotel Access



Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access

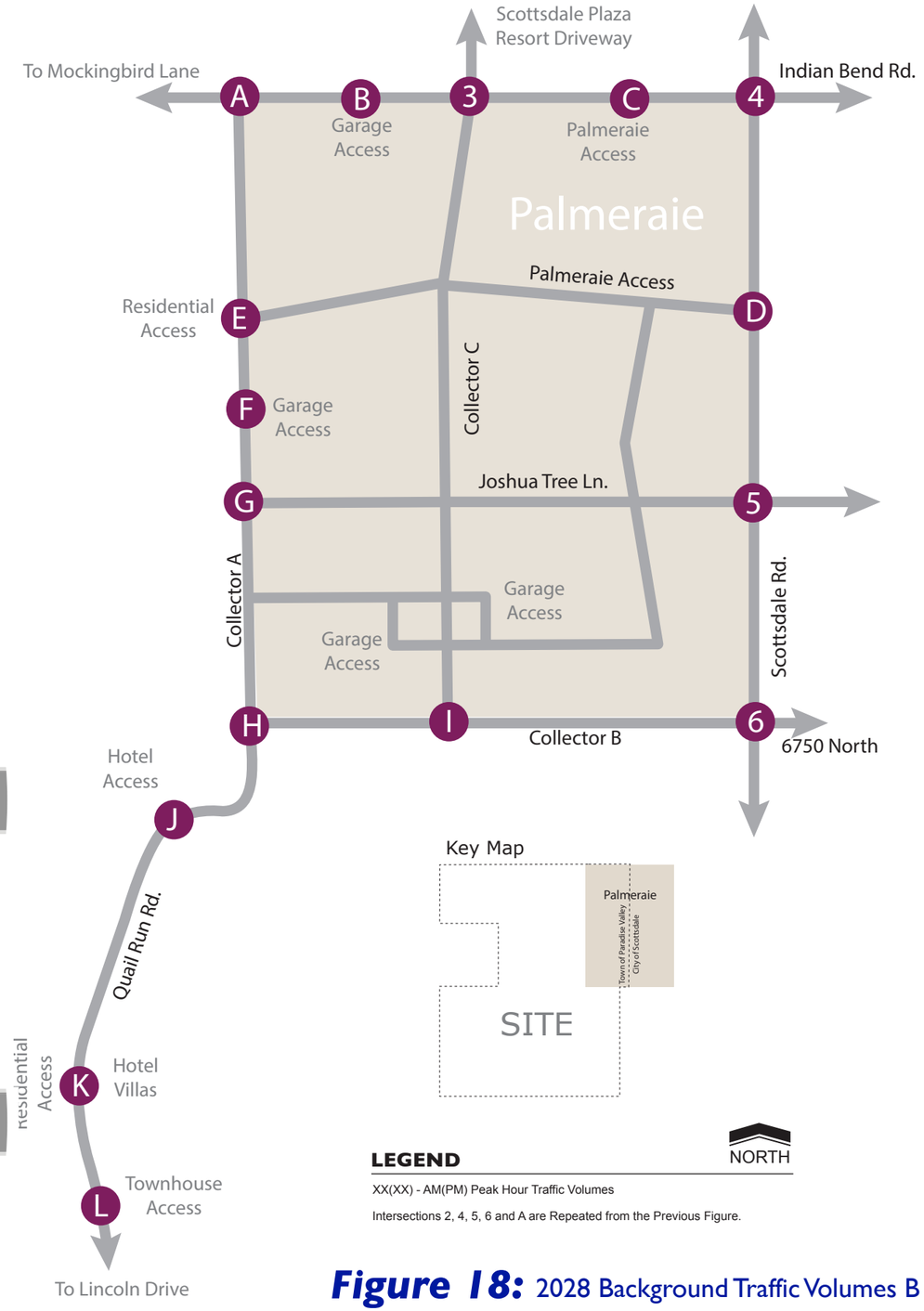
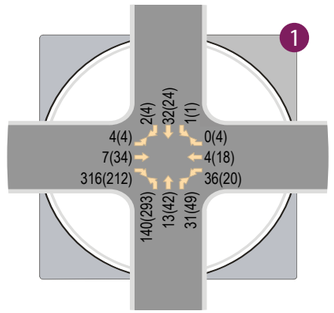
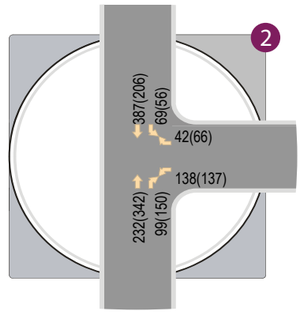


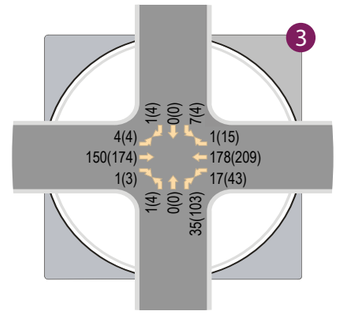
Figure 18: 2028 Background Traffic Volumes B



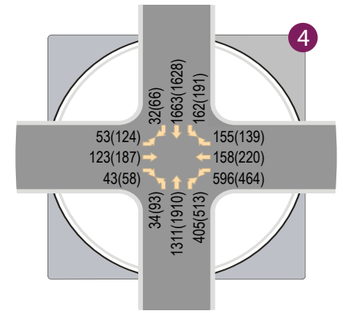
Mockingbird Ln. & Northern Ave.



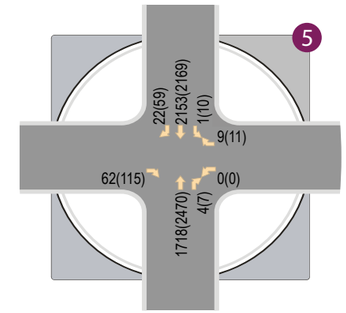
Mockingbird Ln. & Indian Bend Rd.



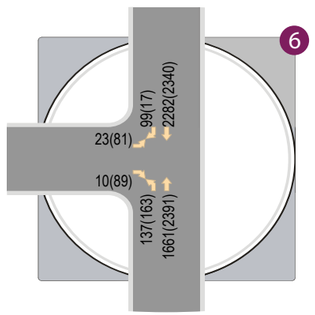
Scottsdale Plaza Resort & Indian Bend Rd.



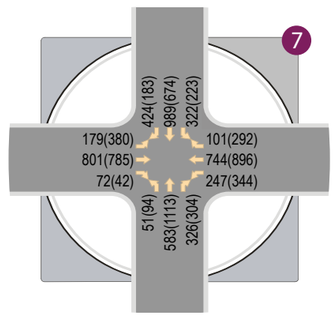
Scottsdale Rd. & Indian Bend Rd.



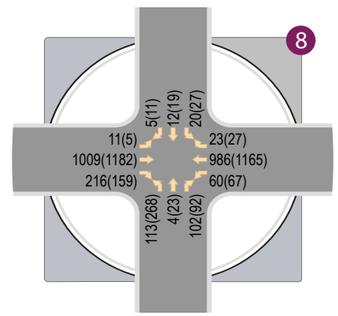
Scottsdale Rd. & Joshua Tree Ln.



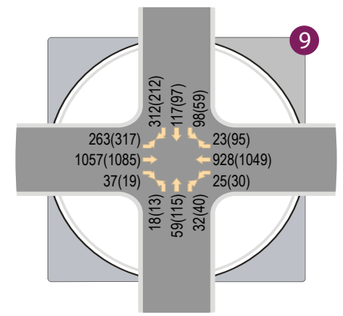
Scottsdale Rd. & 6750 North



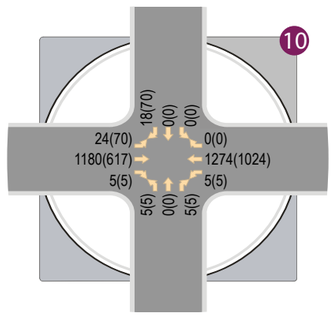
Tatum Blvd. & Lincoln Dr.



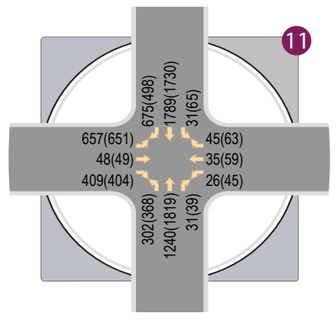
Invergordon Rd. & Lincoln Dr.



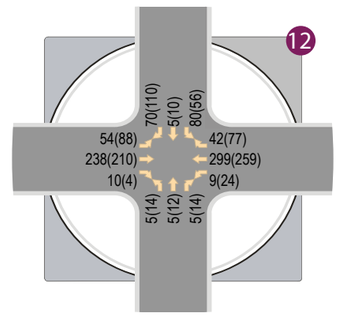
Mockingbird Ln. & Lincoln Dr.



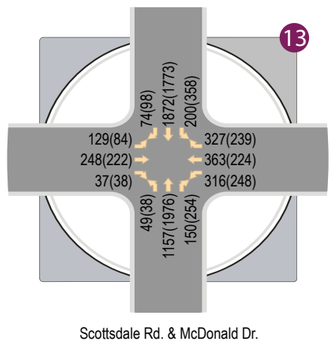
Quail Run Rd & Lincoln Dr.



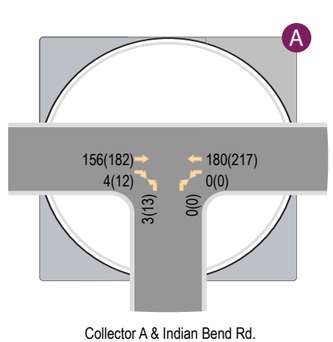
Scottsdale Rd. & Lincoln Dr.



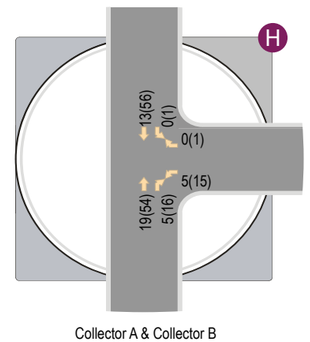
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



Collector A & Collector B

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

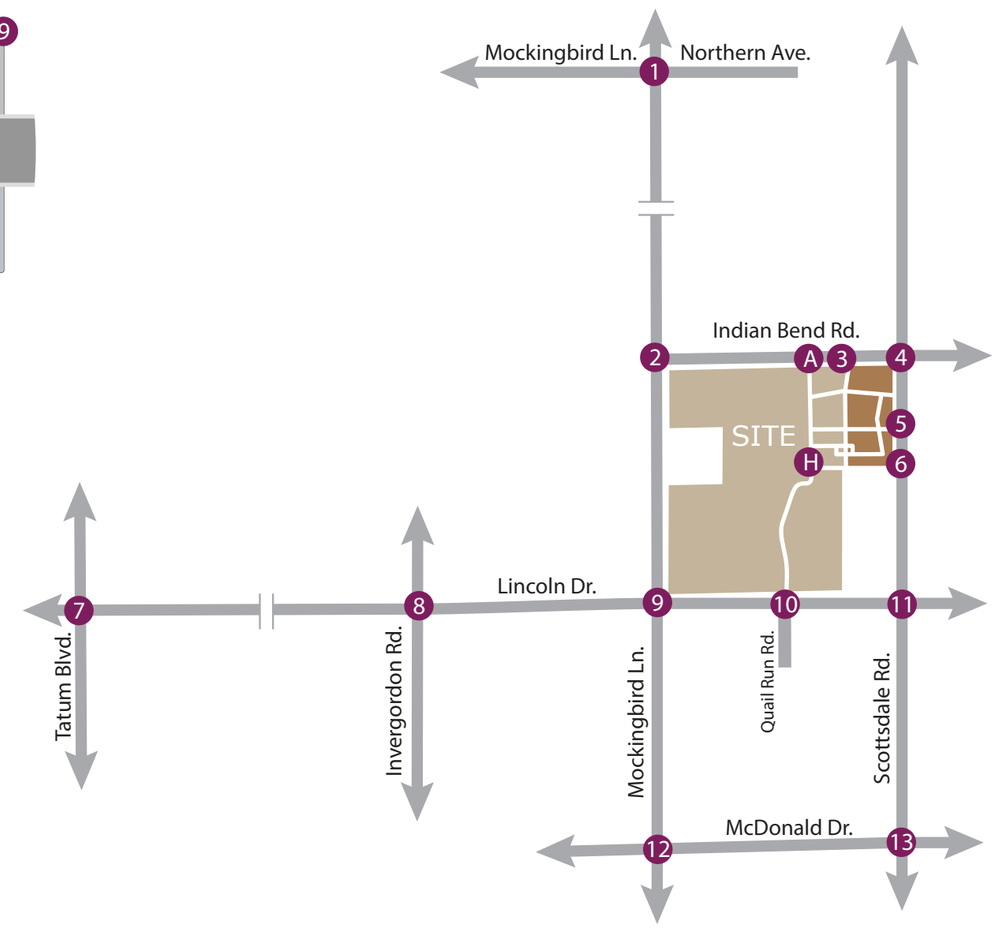
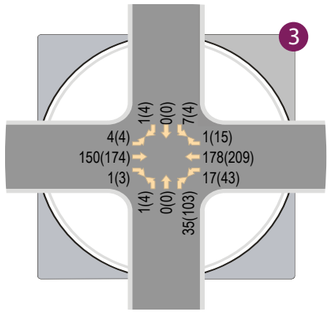
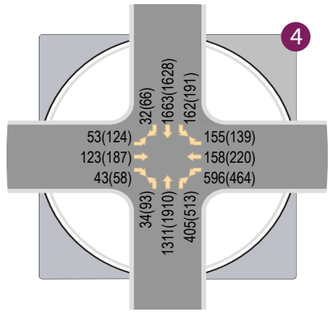


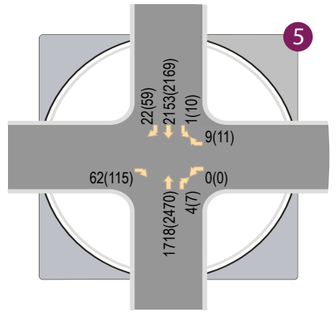
Figure 19: 2033 Background Traffic Volumes A



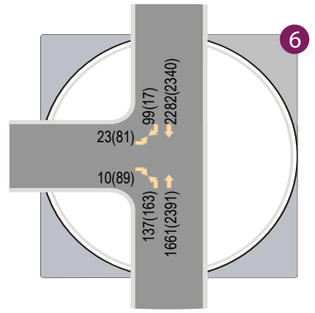
Scottsdale Plaza Resort & Indian Bend Rd.



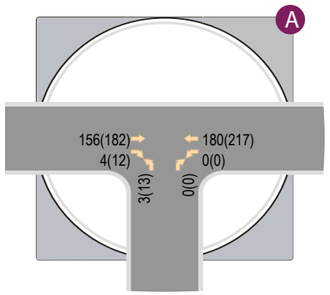
Scottsdale Rd. & Indian Bend Rd.



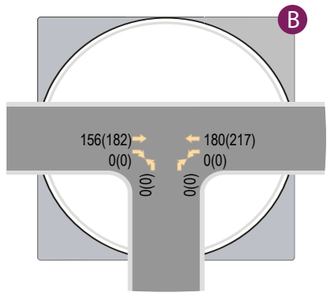
Scottsdale Rd. & Joshua Tree Ln.



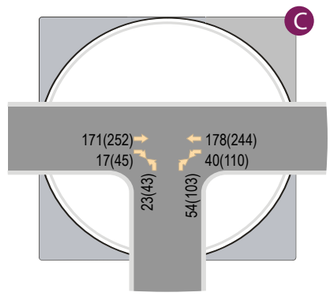
Scottsdale Rd. & 6750 North



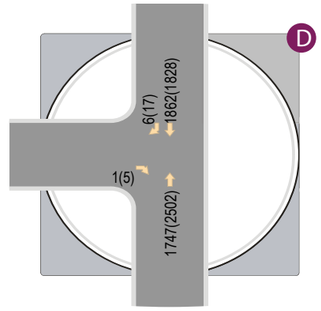
Collector A & Indian Bend Rd.



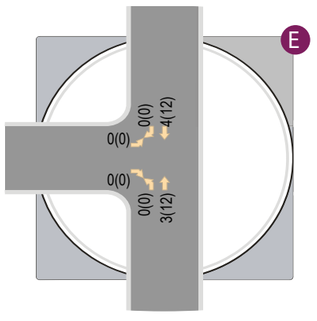
Garage Access & Indian Bend Rd.



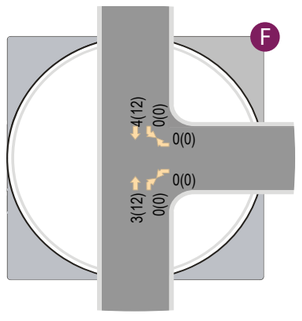
Palmeraie Access & Indian Bend Rd.



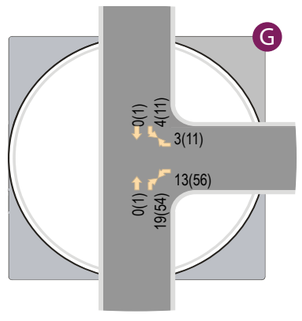
Scottsdale Rd. & Palmeraie Access



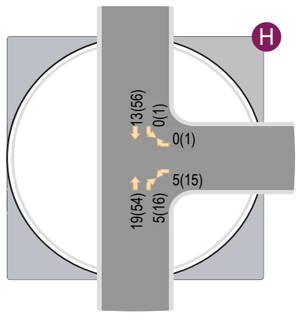
Quail Run Rd. & North Residential Access



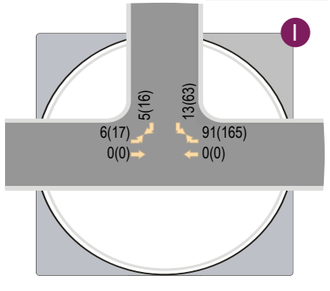
Collector A & Garage Access



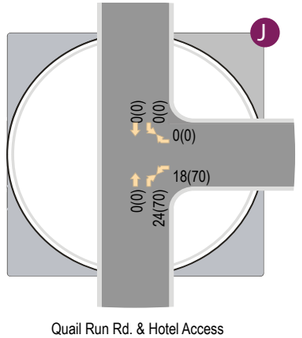
Collector A & Joshua Tree Ln.



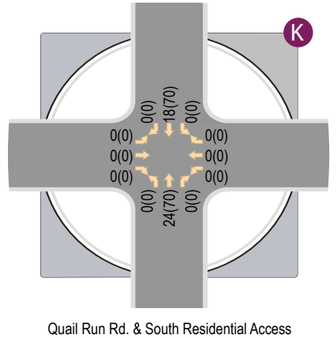
Collector A & Collector B



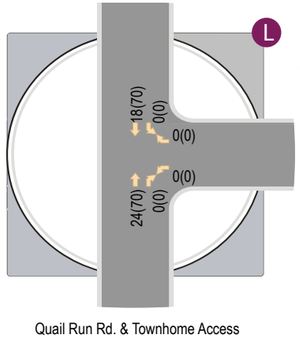
Collector C & Collector B



Quail Run Rd. & Hotel Access



Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access

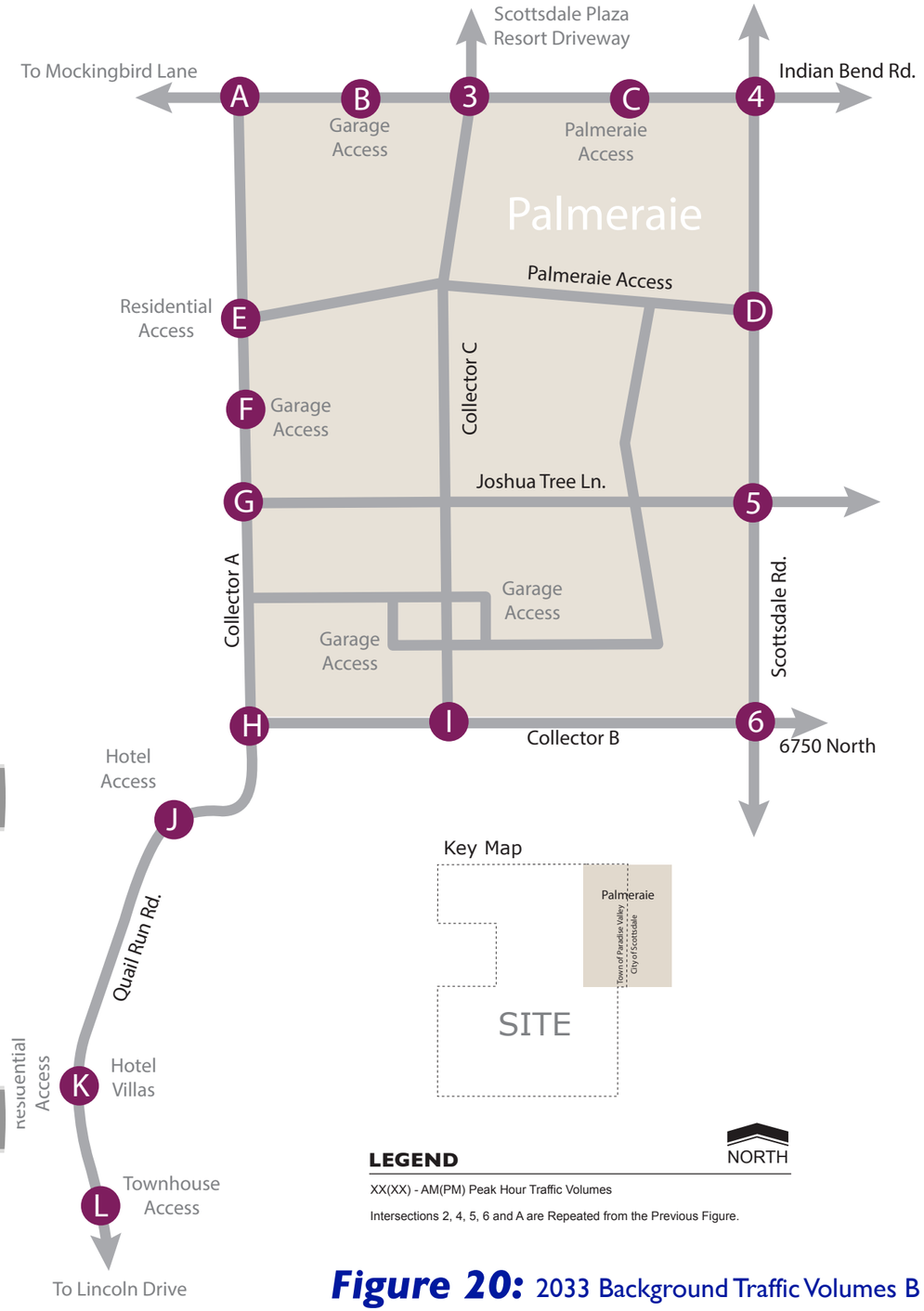
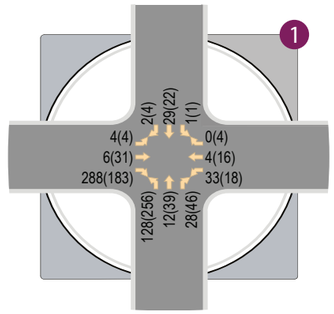
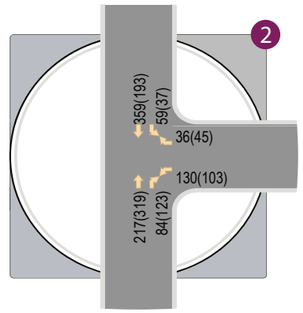


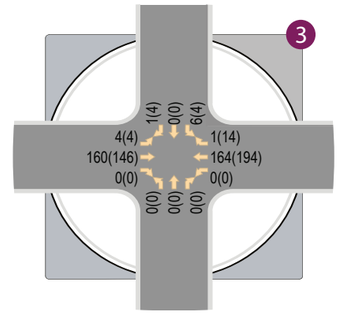
Figure 20: 2033 Background Traffic Volumes B



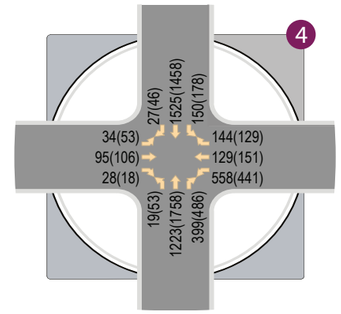
Mockingbird Ln. & Northern Ave.



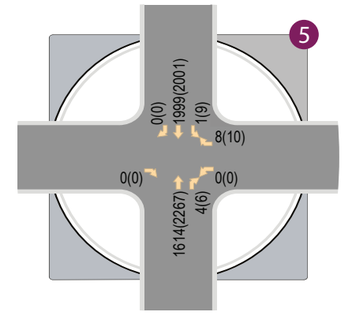
Mockingbird Ln. & Indian Bend Rd.



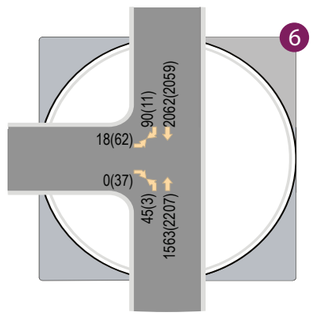
Scottsdale Plaza Resort & Indian Bend Rd.



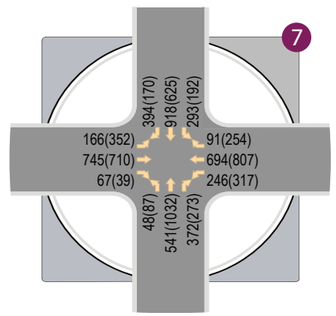
Scottsdale Rd. & Indian Bend Rd.



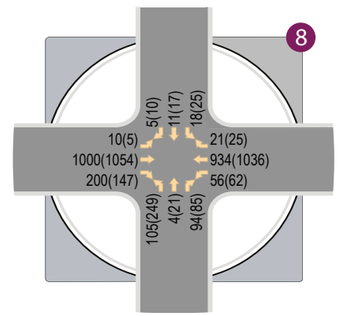
Scottsdale Rd. & Joshua Tree Ln.



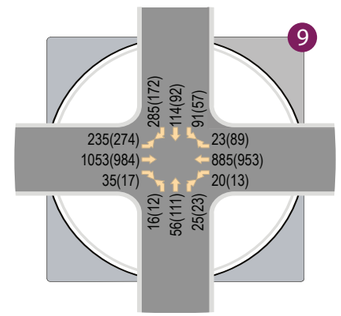
Scottsdale Rd. & 6750 North



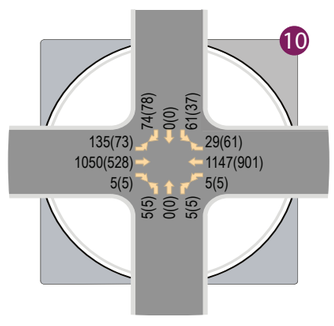
Tatum Blvd. & Lincoln Dr.



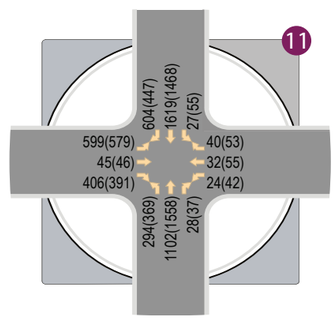
Invergordon Rd. & Lincoln Dr.



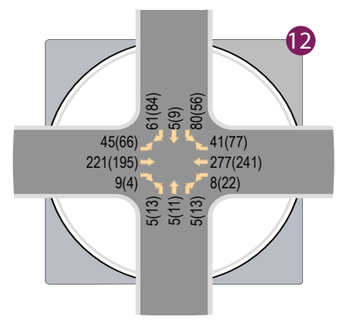
Mockingbird Ln. & Lincoln Dr.



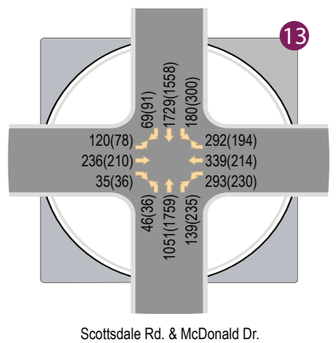
Quail Run Rd & Lincoln Dr.



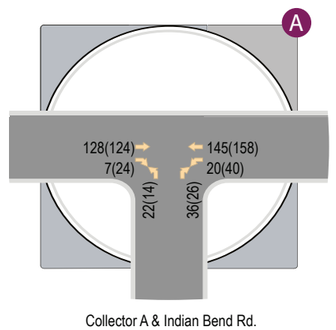
Scottsdale Rd. & Lincoln Dr.



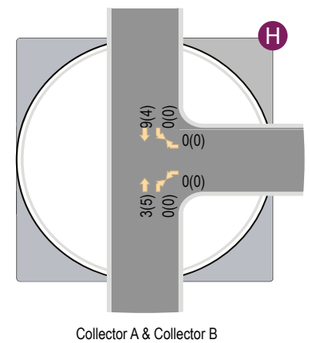
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



Collector A & Collector B

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

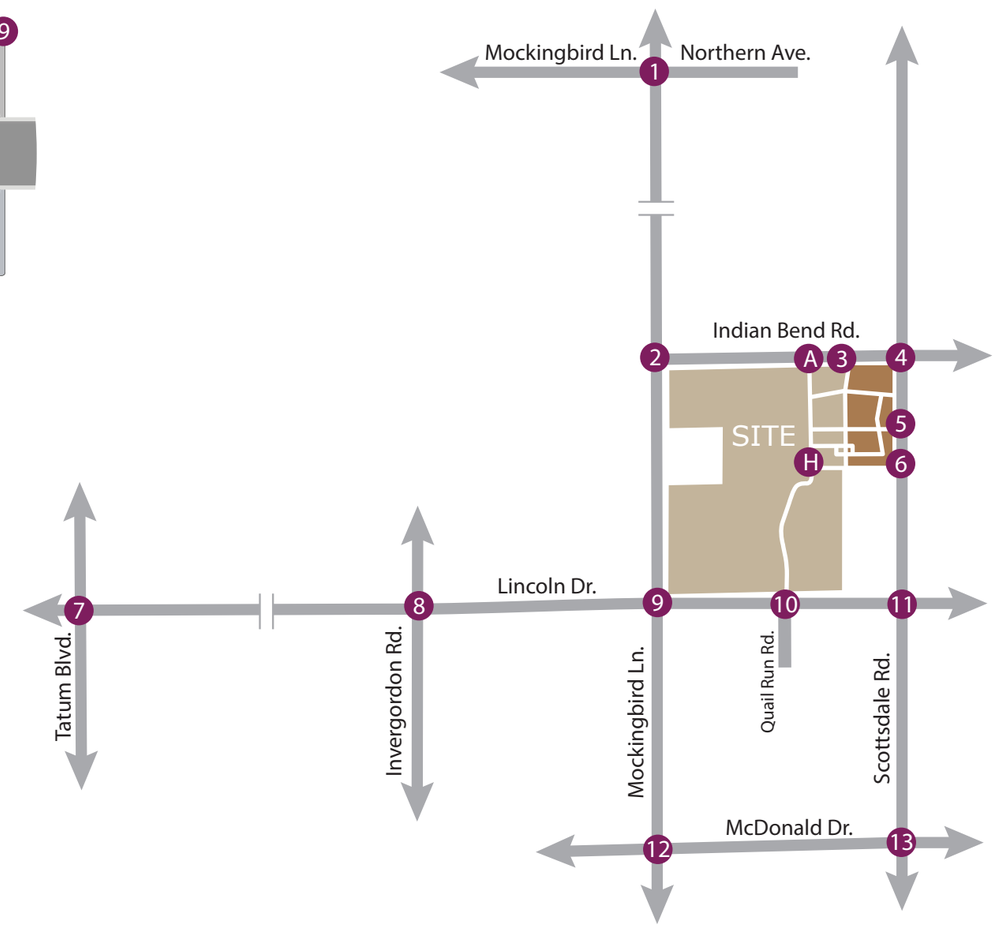
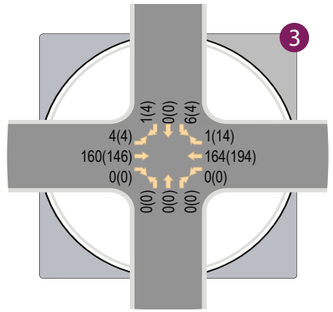
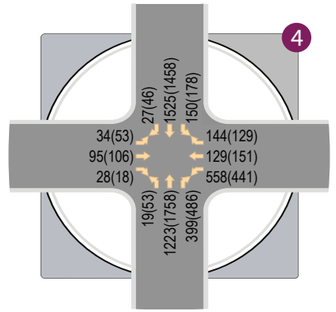


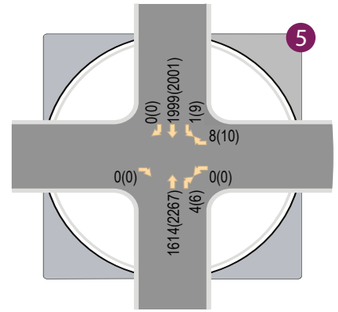
Figure 21: 2018 Total Traffic Volumes A



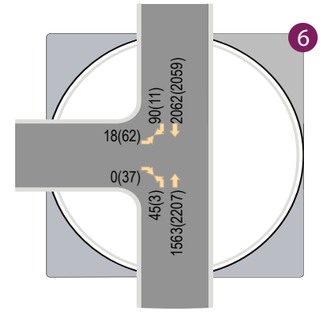
Scottsdale Plaza Resort & Indian Bend Rd.



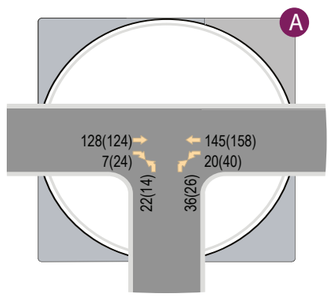
Scottsdale Rd. & Indian Bend Rd.



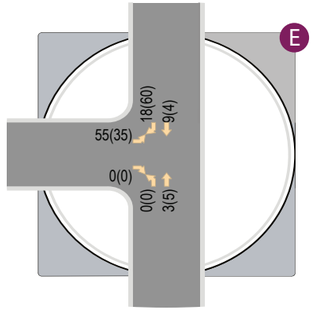
Scottsdale Rd. & Joshua Tree Ln.



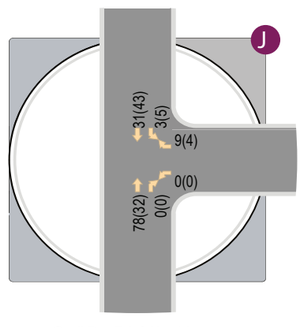
Scottsdale Rd. & 6750 North



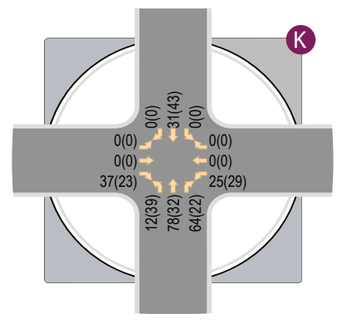
Collector A & Indian Bend Rd.



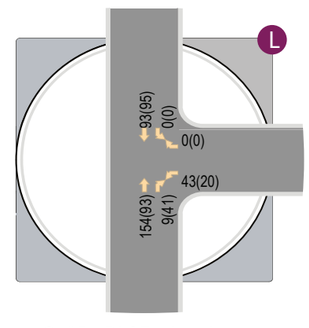
Quail Run Rd. & North Residential Access



Quail Run Rd. & Hotel Access



Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access

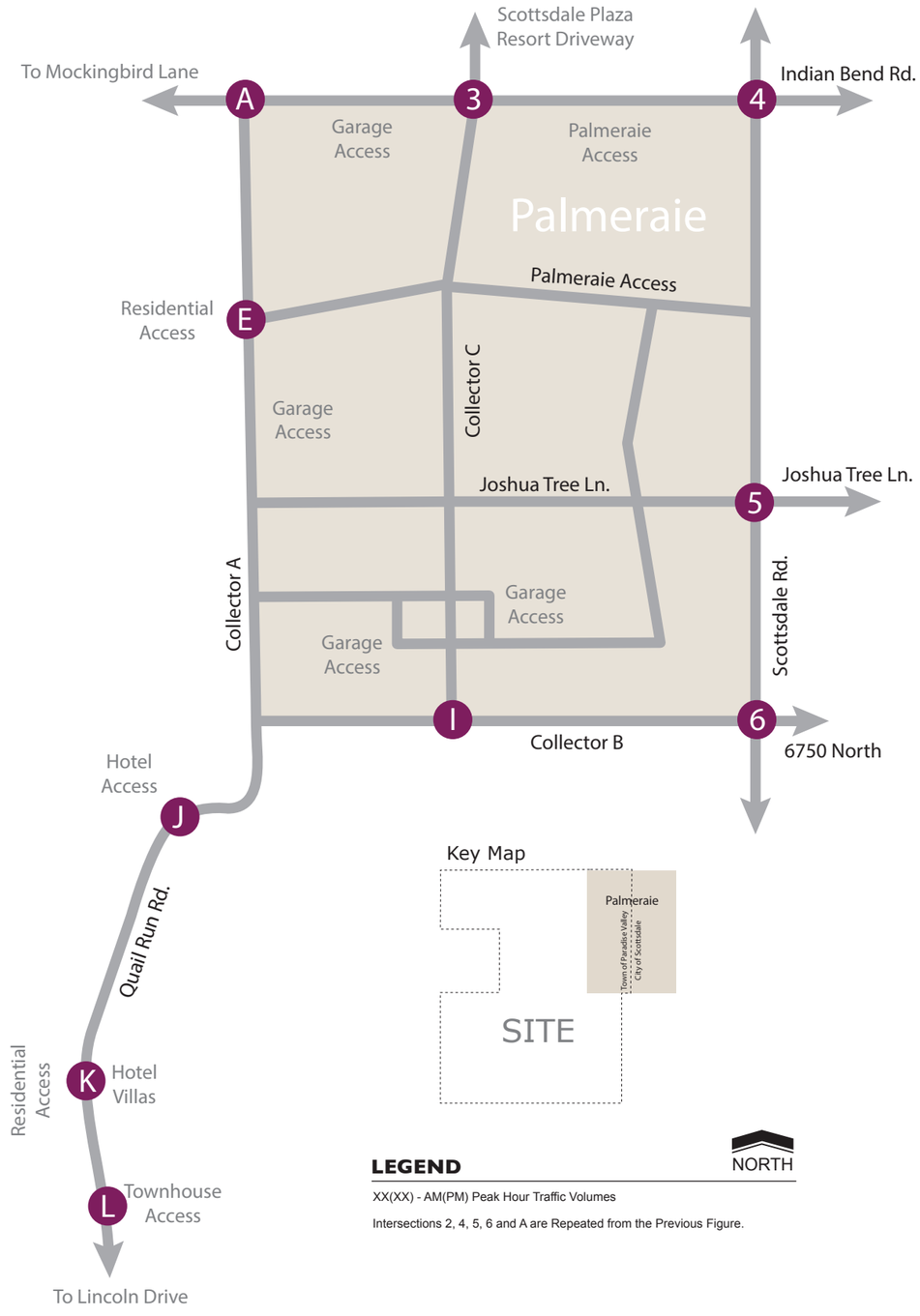
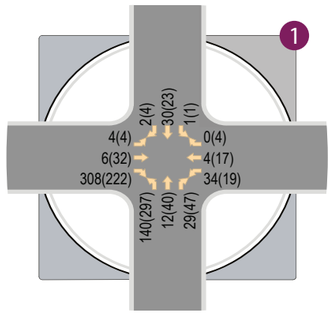
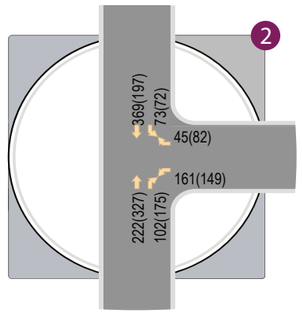


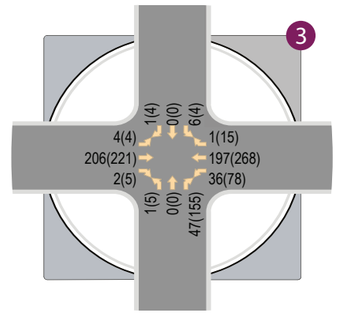
Figure 22: 2018 Total Traffic Volumes B



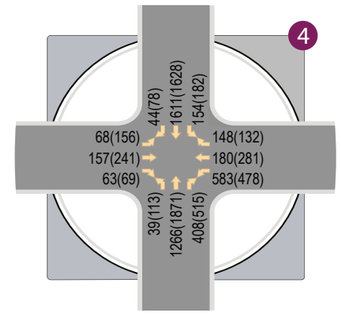
Mockingbird Ln. & Northern Ave.



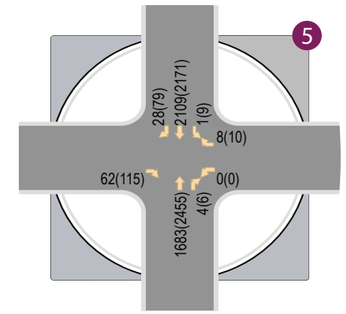
Mockingbird Ln. & Indian Bend Rd.



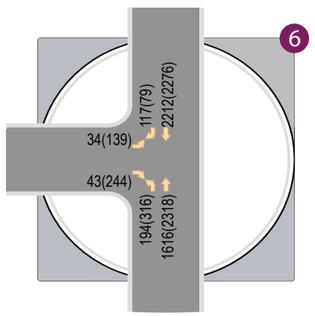
Scottsdale Plaza Resort & Indian Bend Rd.



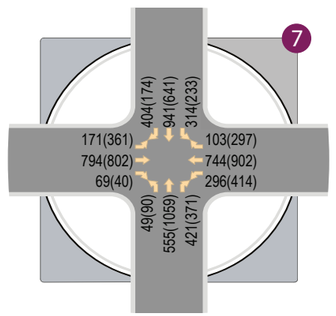
Scottsdale Rd. & Indian Bend Rd.



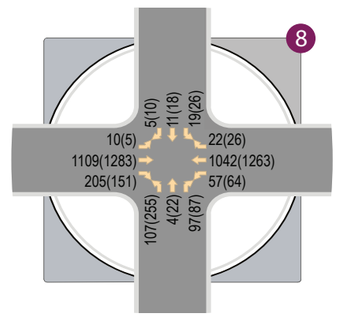
Scottsdale Rd. & Joshua Tree Ln.



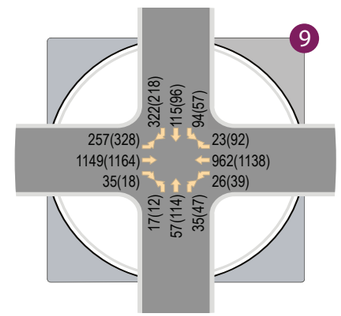
Scottsdale Rd. & 6750 North



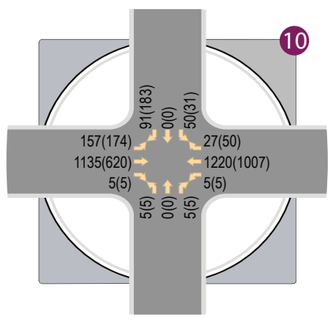
Tatum Blvd. & Lincoln Dr.



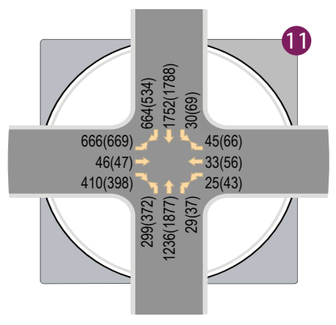
Invergordon Rd. & Lincoln Dr.



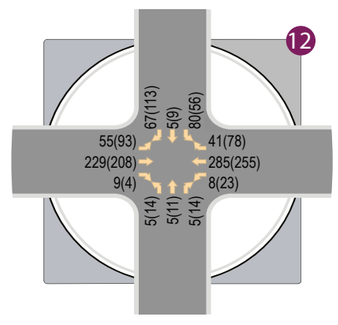
Mockingbird Ln. & Lincoln Dr.



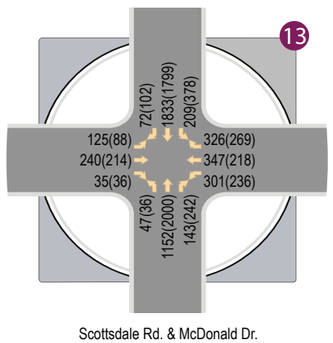
Quail Run Rd & Lincoln Dr.



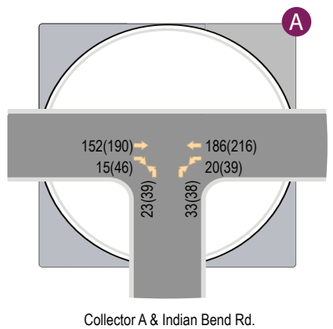
Scottsdale Rd. & Lincoln Dr.



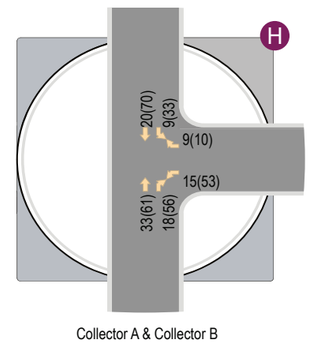
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



Collector A & Collector B

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

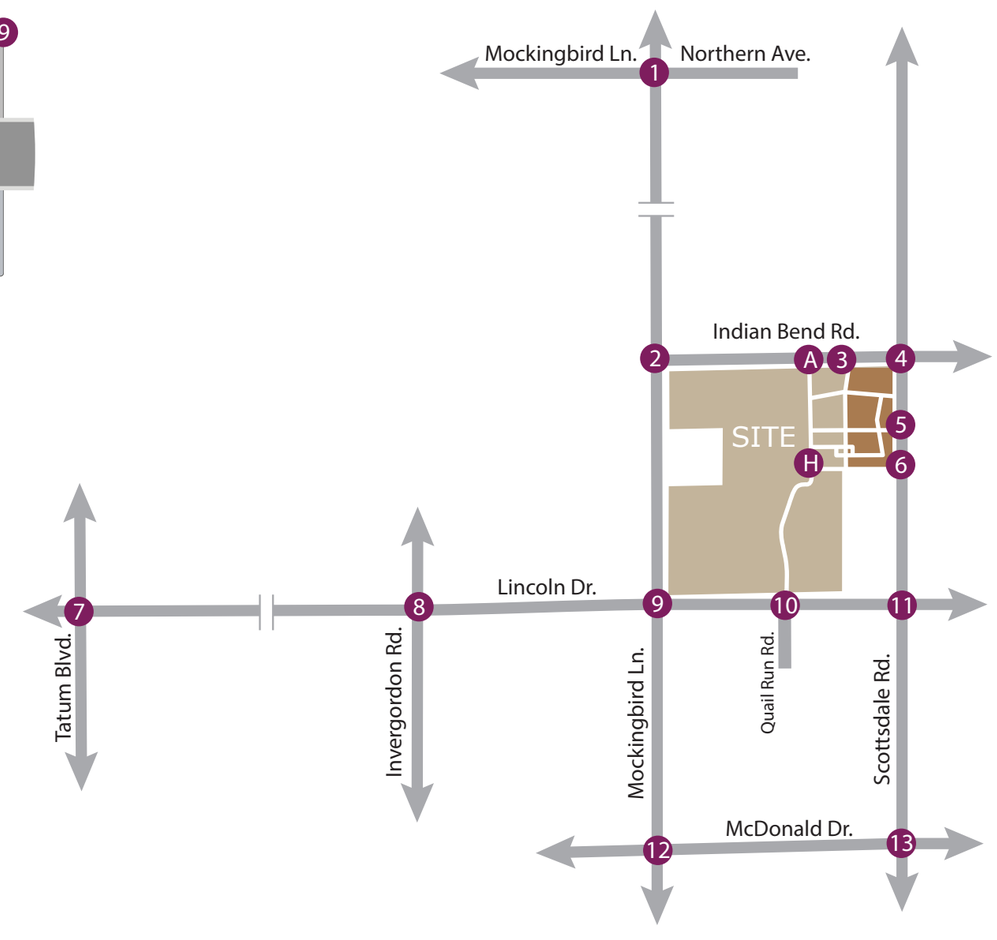
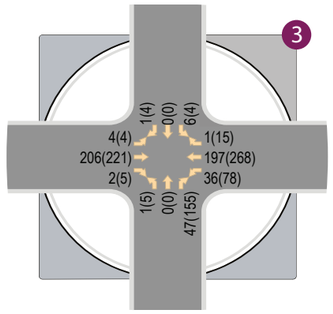
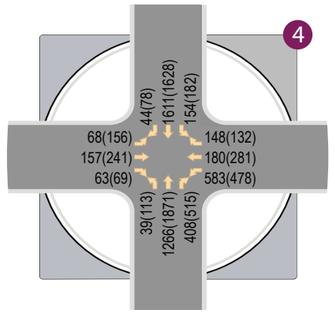


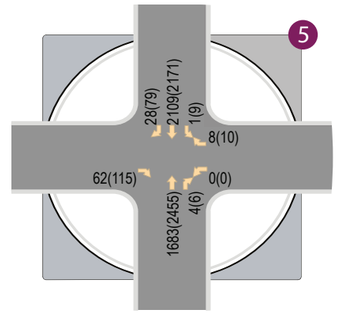
Figure 23: 2023 Total Traffic Volumes A



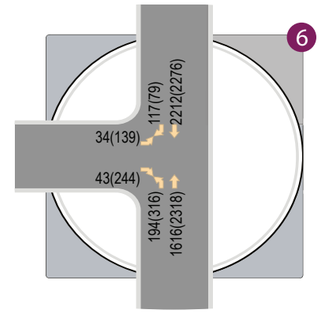
Scottsdale Plaza Resort & Indian Bend Rd.



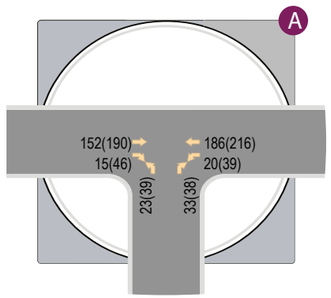
Scottsdale Rd. & Indian Bend Rd.



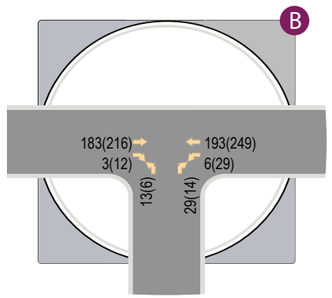
Scottsdale Rd. & Joshua Tree Ln.



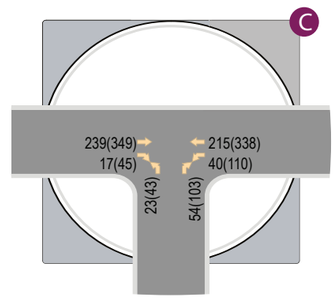
Scottsdale Rd. & 6750 North



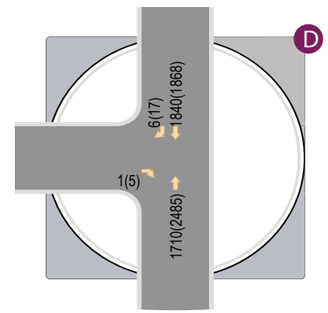
Collector A & Indian Bend Rd.



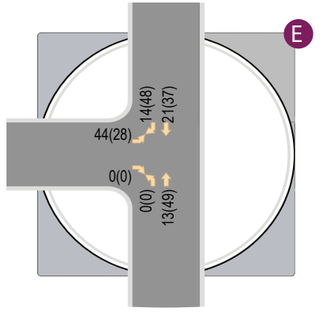
Garage Access & Indian Bend Rd.



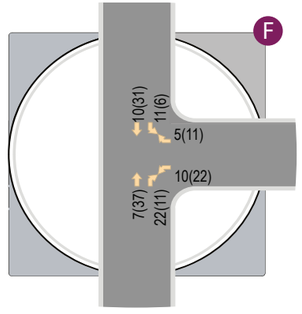
Palmeraie Access & Indian Bend Rd.



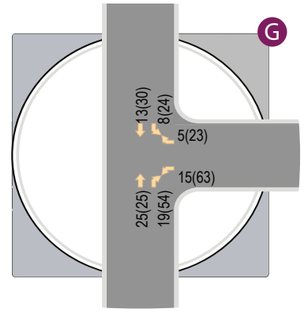
Scottsdale Rd. & Palmeraie Access



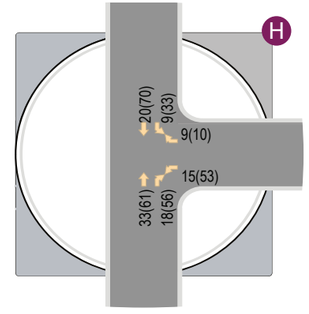
Quail Run Rd. & North Residential Access



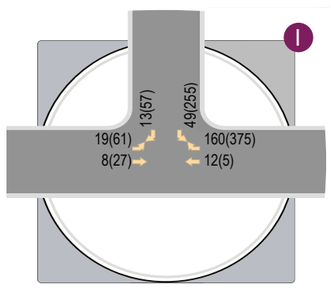
Collector A & Garage Access



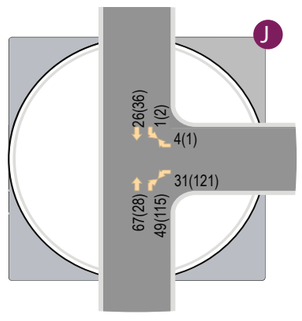
Collector A & Joshua Tree Ln.



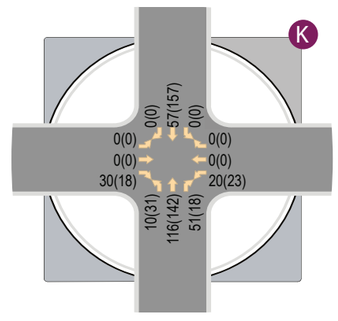
Collector A & Collector B



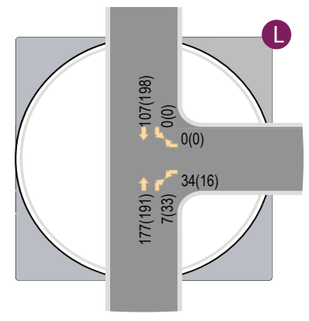
Collector C & Collector B



Quail Run Rd. & Hotel Access



Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access

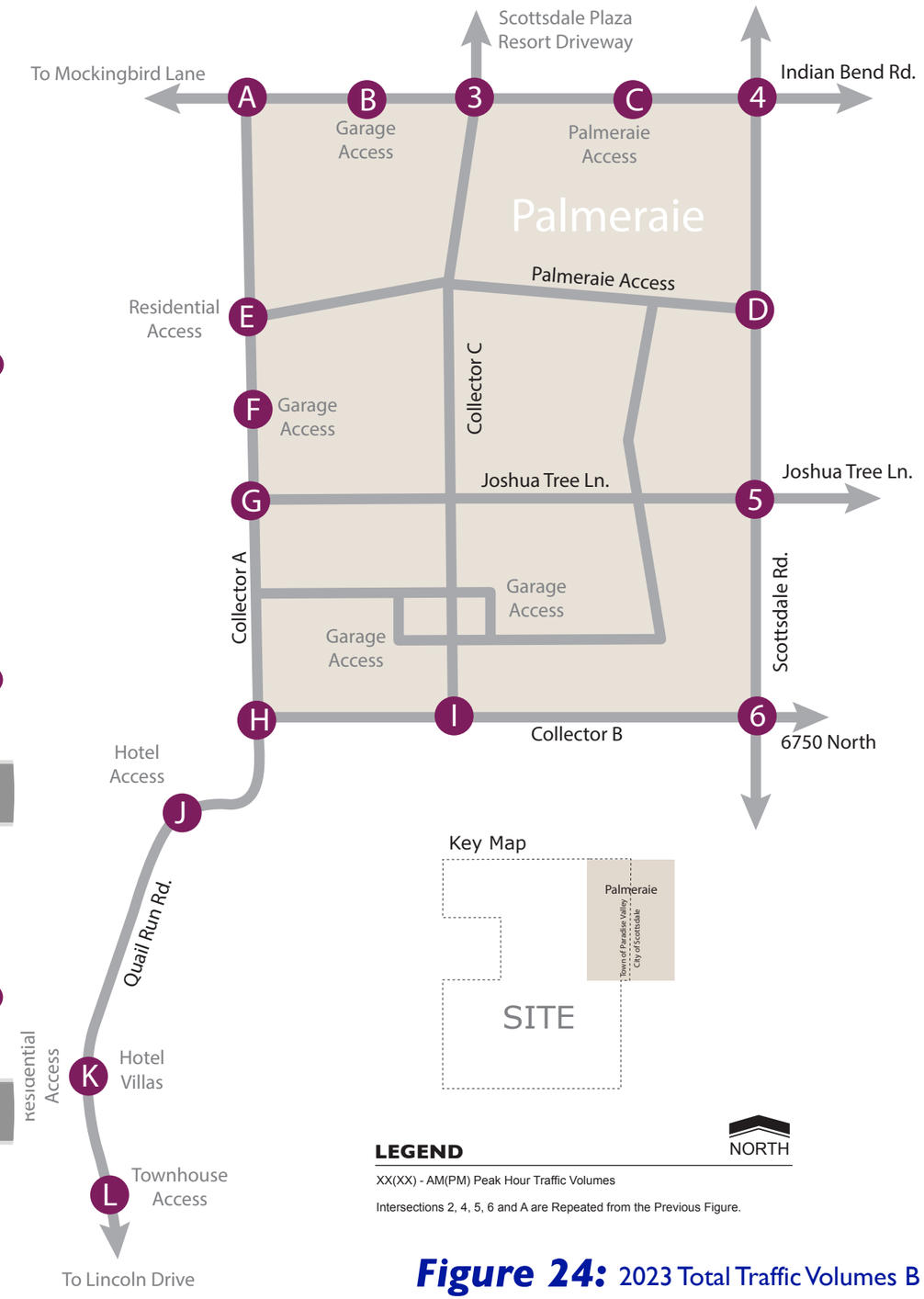
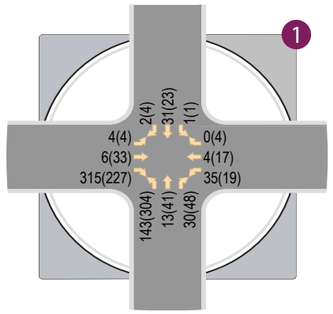
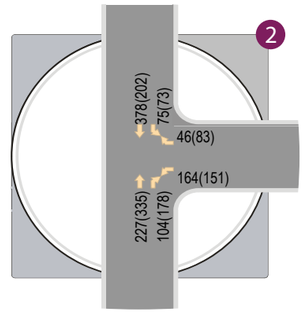


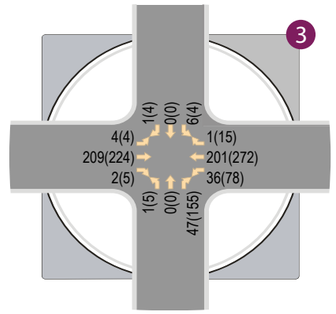
Figure 24: 2023 Total Traffic Volumes B



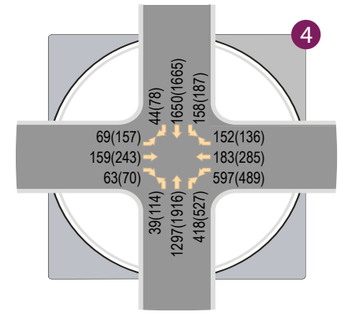
Mockingbird Ln. & Northern Ave.



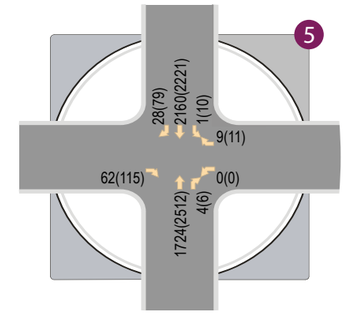
Mockingbird Ln. & Indian Bend Rd.



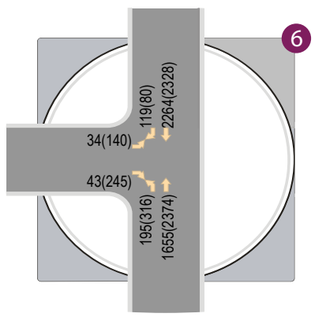
Scottsdale Plaza Resort & Indian Bend Rd.



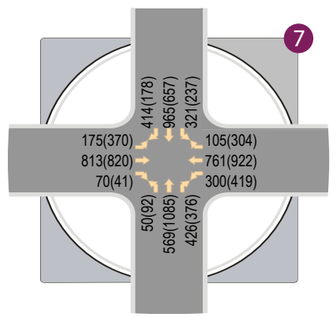
Scottsdale Rd. & Indian Bend Rd.



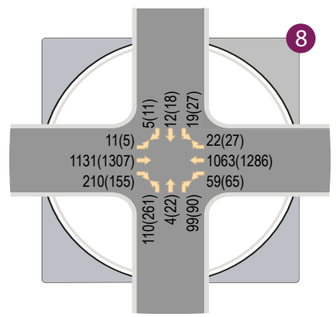
Scottsdale Rd. & Joshua Tree Ln.



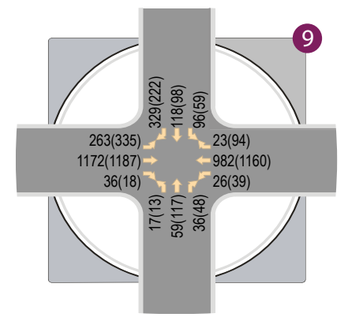
Scottsdale Rd. & 6750 North



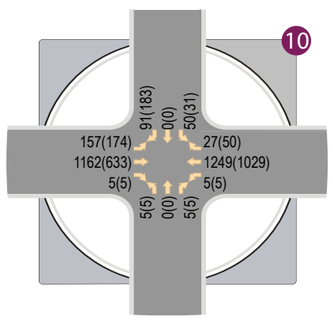
Tatum Blvd. & Lincoln Dr.



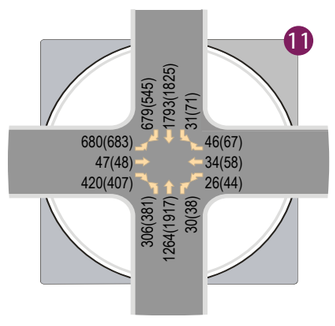
Invergordon Rd. & Lincoln Dr.



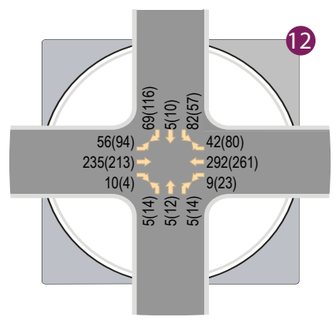
Mockingbird Ln. & Lincoln Dr.



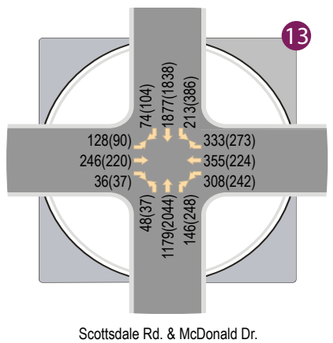
Quail Run Rd & Lincoln Dr.



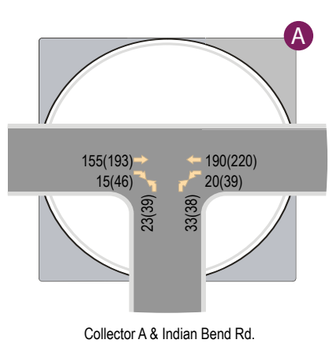
Scottsdale Rd. & Lincoln Dr.



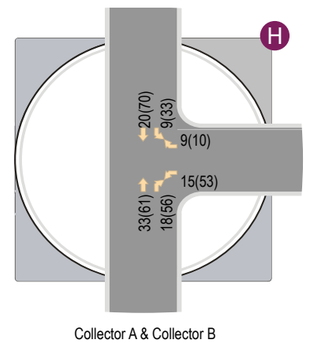
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



Collector A & Collector B

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

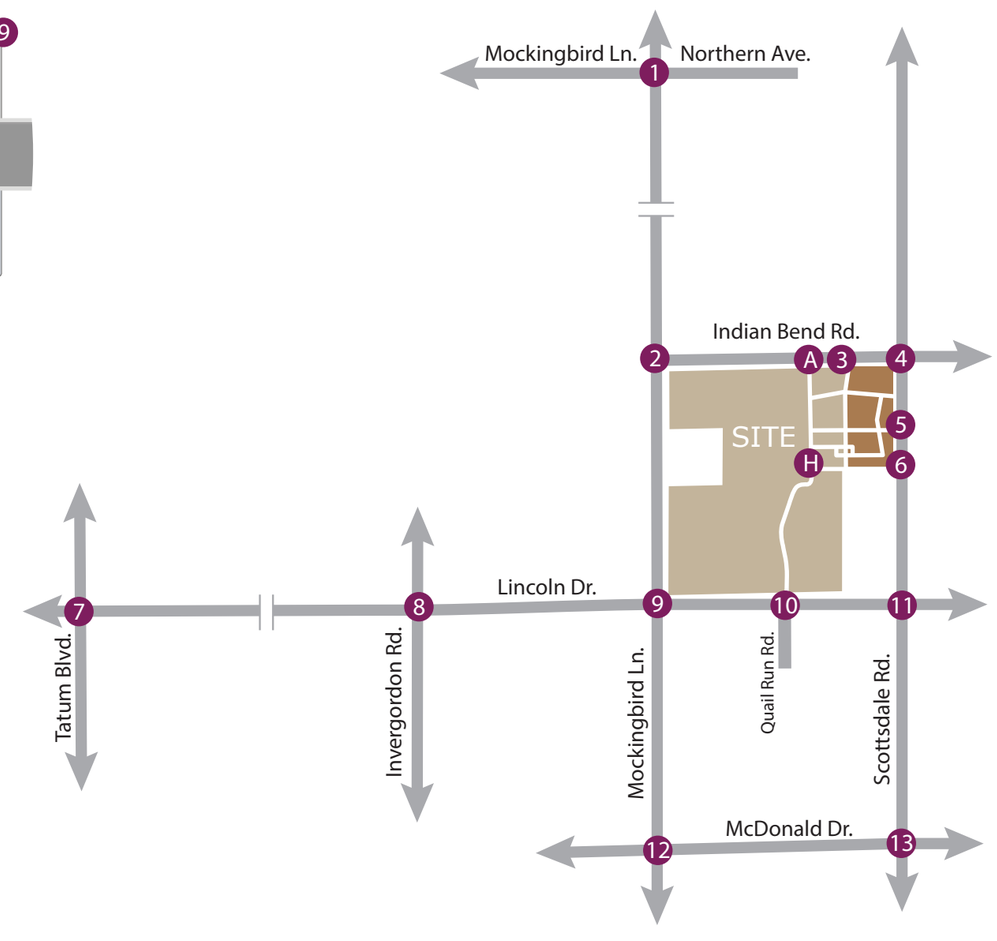
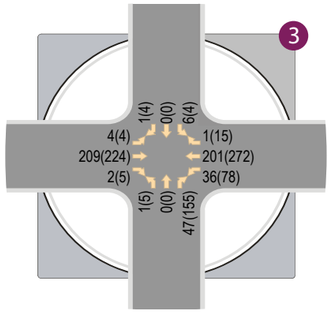
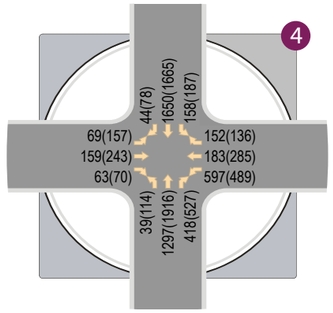


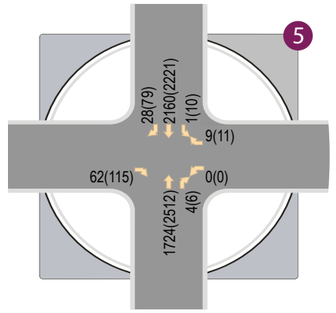
Figure 25: 2028 Total Traffic Volumes A



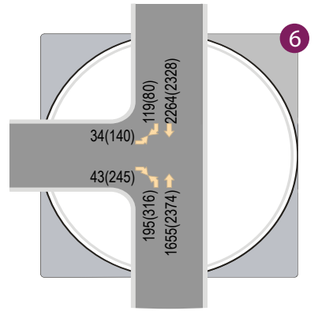
Scottsdale Plaza Resort & Indian Bend Rd.



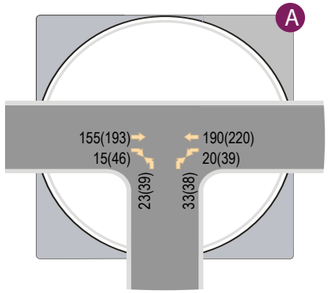
Scottsdale Rd. & Indian Bend Rd.



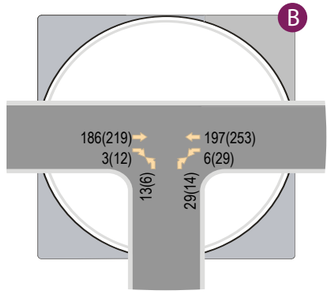
Scottsdale Rd. & Joshua Tree Ln.



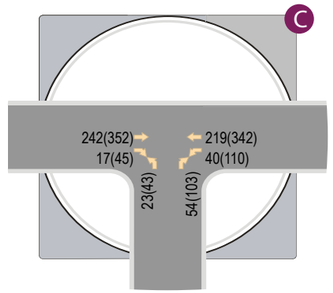
Scottsdale Rd. & 6750 North



Collector A & Indian Bend Rd.



Garage Access & Indian Bend Rd.



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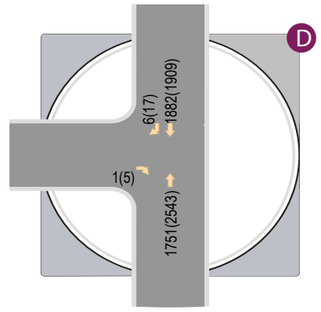
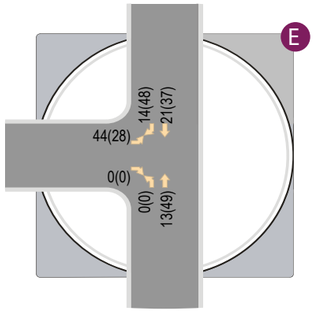
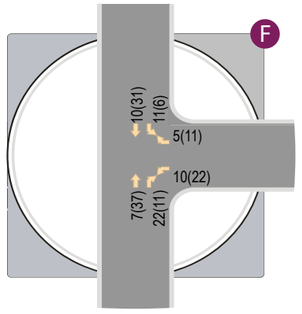


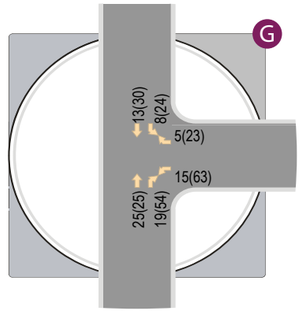
Scottsdale Rd. & Palmeraie Access



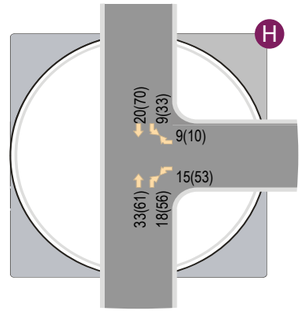
Quail Run Rd. & North Residential Access



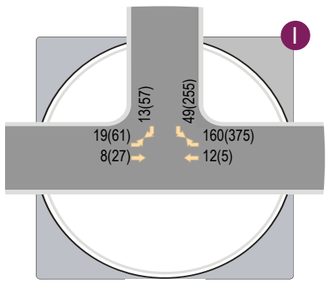
Collector A & Garage Access



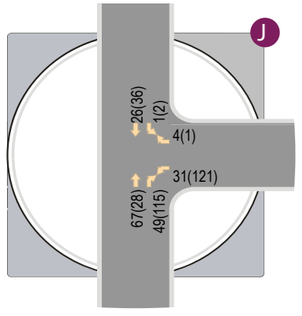
Collector A & Joshua Tree Ln.



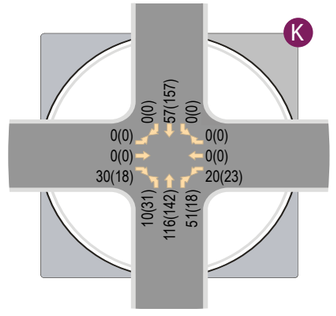
Collector A & Collector B



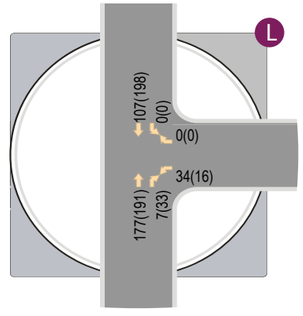
Collector C & Collector B



Quail Run Rd. & Hotel Access



Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access

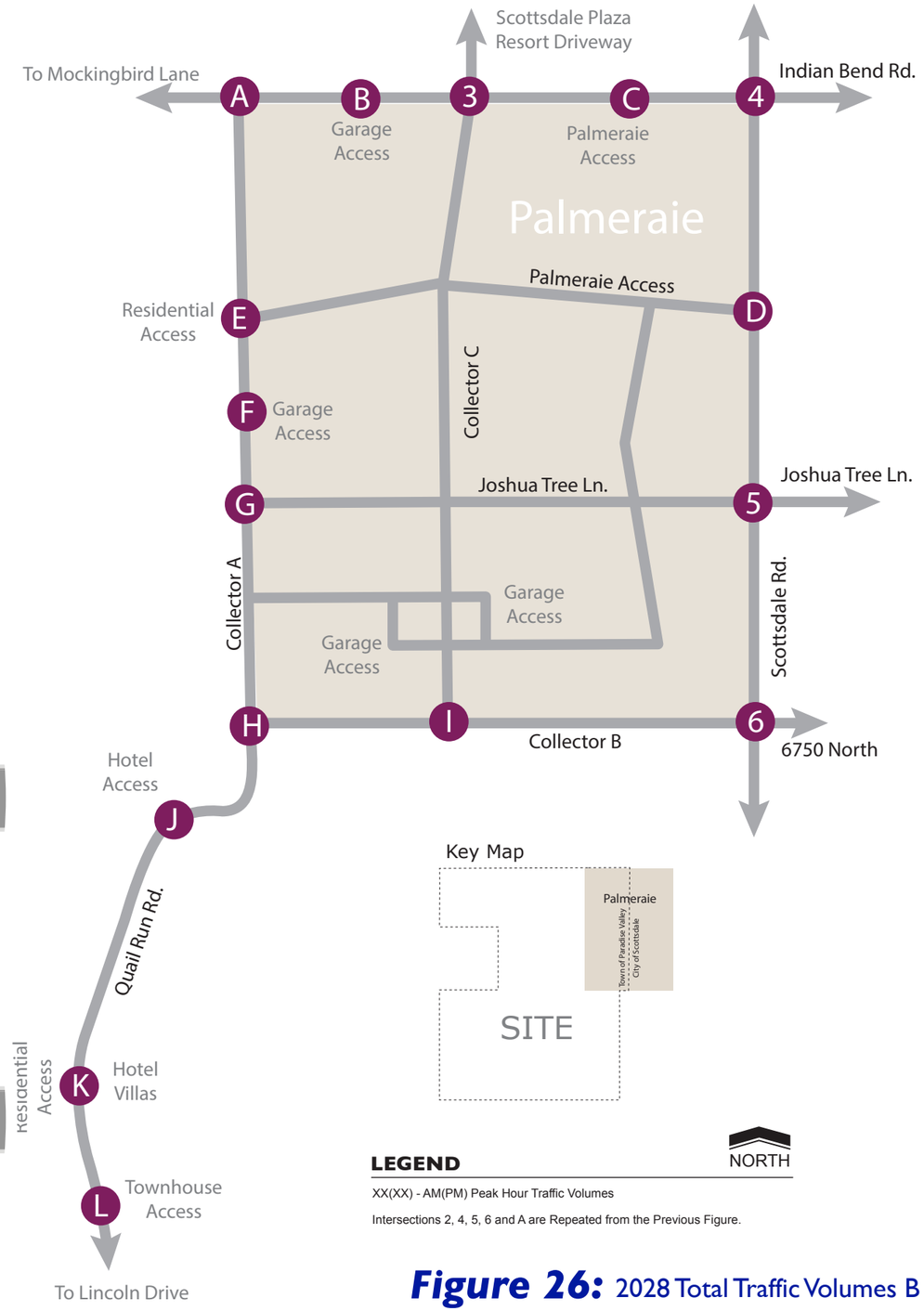
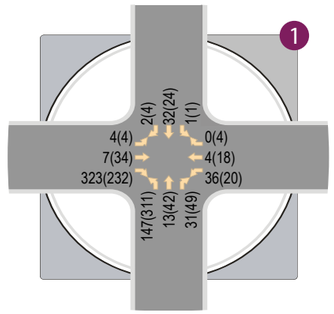
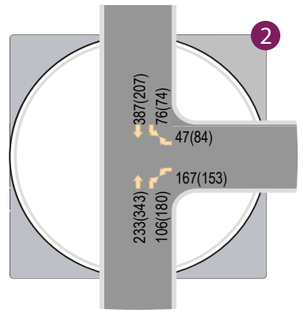


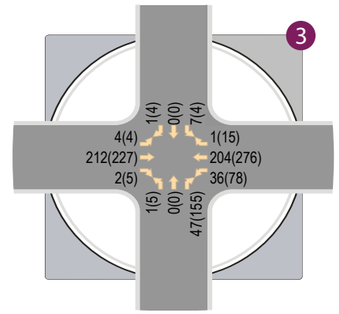
Figure 26: 2028 Total Traffic Volumes B



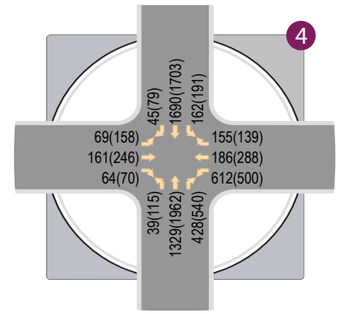
Mockingbird Ln. & Northern Ave.



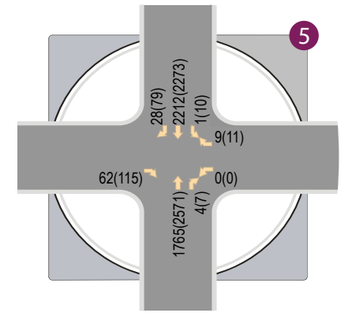
Mockingbird Ln. & Indian Bend Rd.



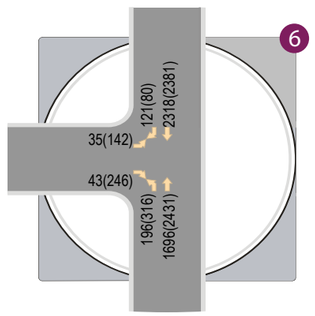
Scottsdale Plaza Resort & Indian Bend Rd.



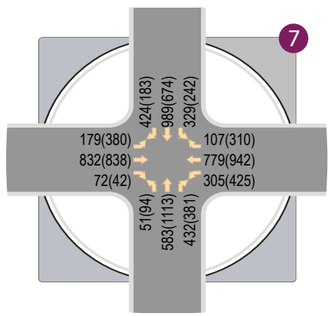
Scottsdale Rd. & Indian Bend Rd.



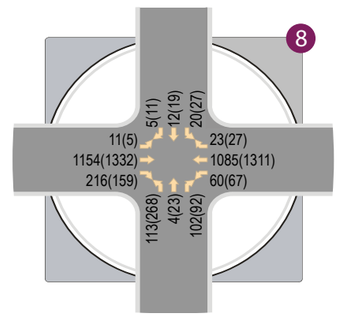
Scottsdale Rd. & Joshua Tree Ln.



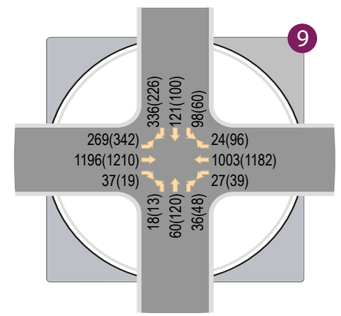
Scottsdale Rd. & 6750 North



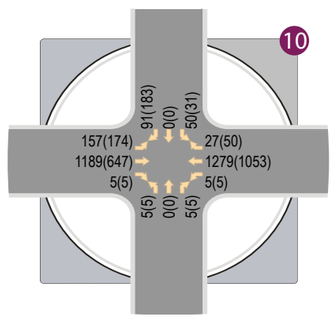
Tatum Blvd. & Lincoln Dr.



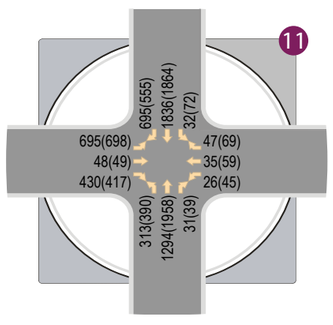
Invergordon Rd. & Lincoln Dr.



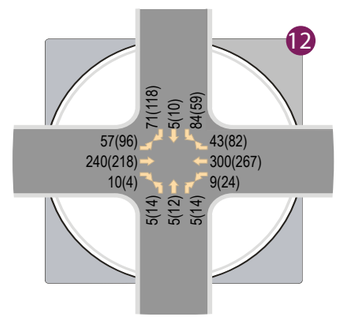
Mockingbird Ln. & Lincoln Dr.



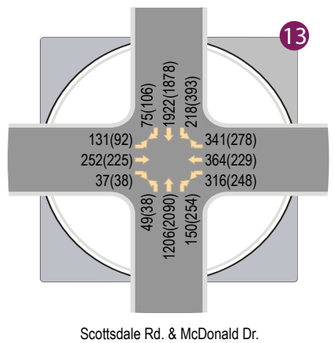
Quail Run Rd & Lincoln Dr.



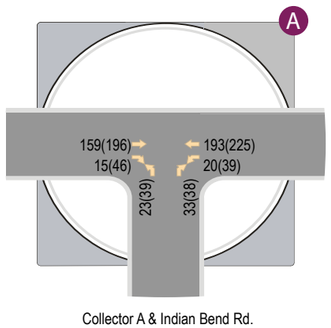
Scottsdale Rd. & Lincoln Dr.



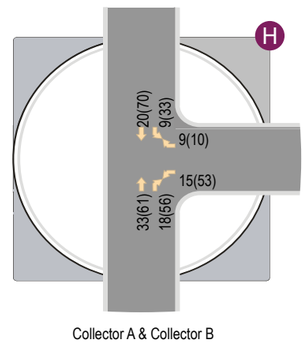
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



Collector A & Collector B

LEGEND

XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

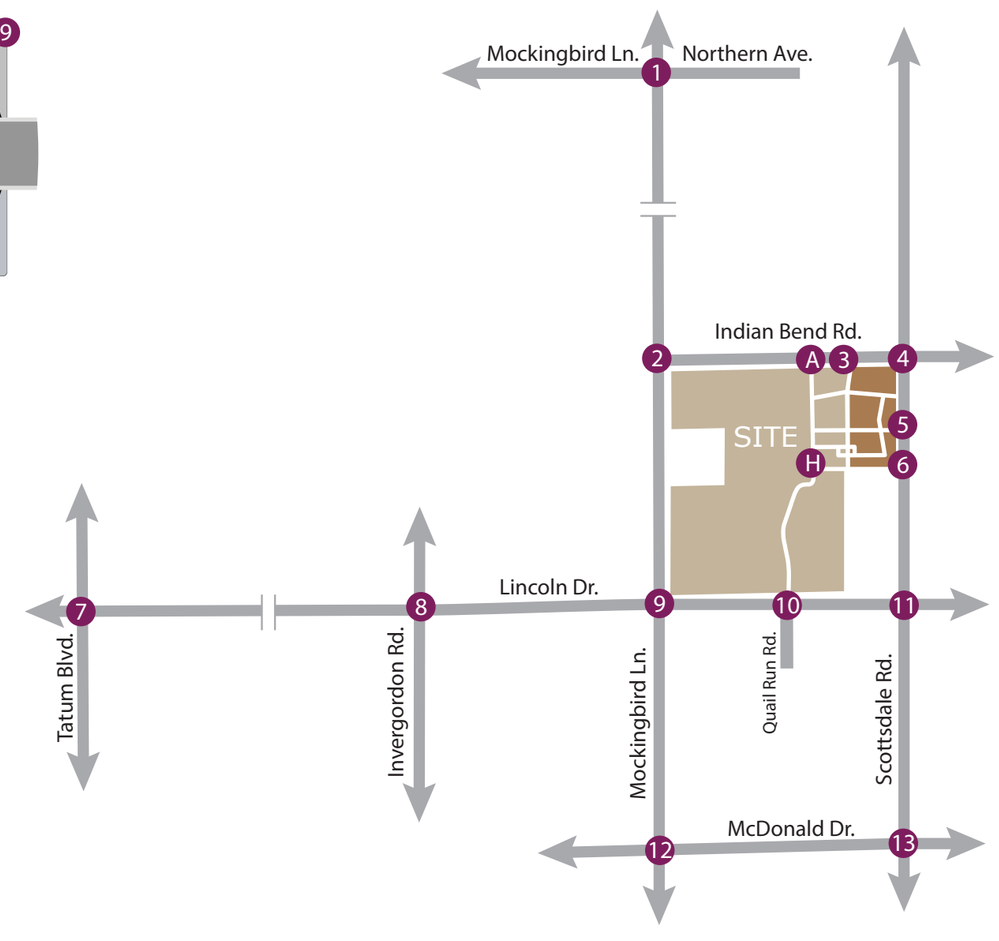
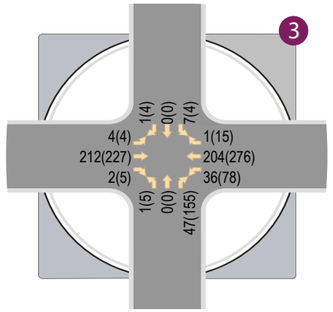
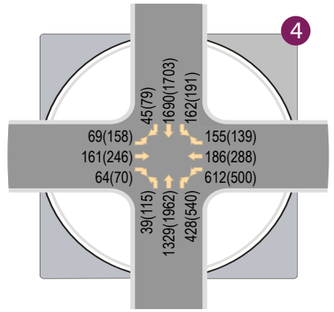


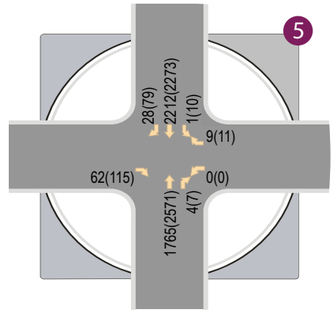
Figure 27: 2033 Total Traffic Volumes A



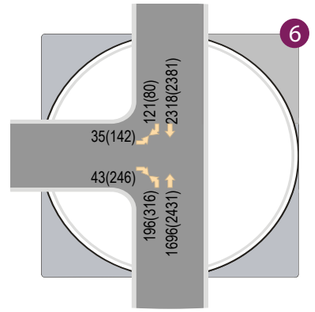
Scottsdale Plaza Resort & Indian Bend Rd.



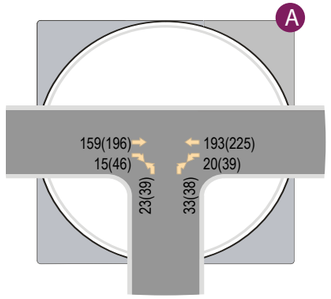
Scottsdale Rd. & Indian Bend Rd.



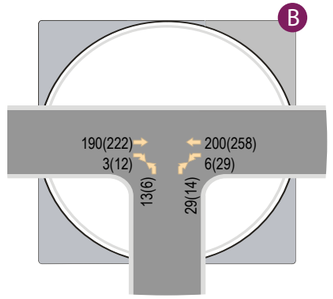
Scottsdale Rd. & Joshua Tree Ln.



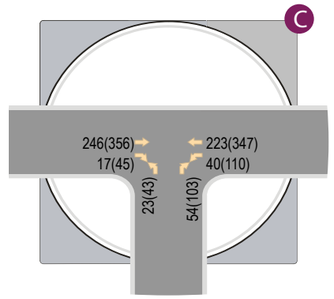
Scottsdale Rd. & 6750 North



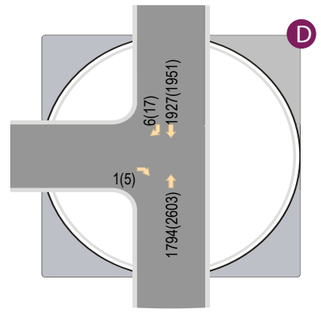
Collector A & Indian Bend Rd.



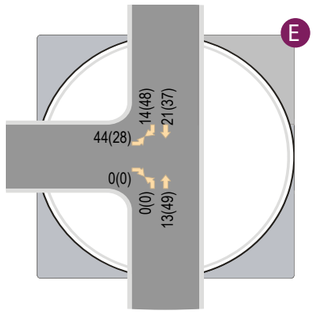
Garage Access & Indian Bend Rd.



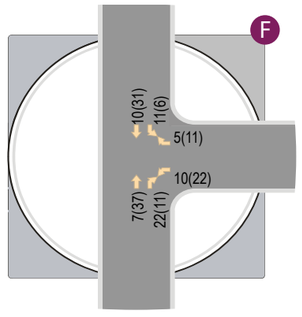
Palmeraie Access & Indian Bend Rd.



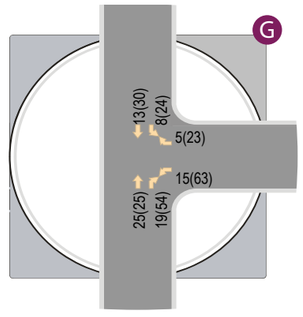
Scottsdale Rd. & Palmeraie Access



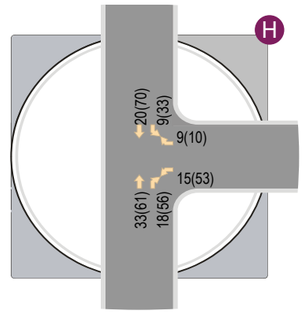
Quail Run Rd. & North Residential Access



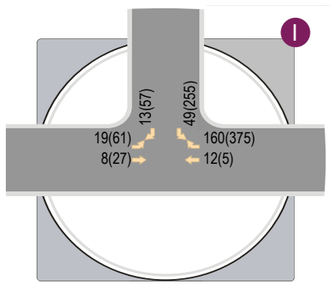
Collector A & Garage Access



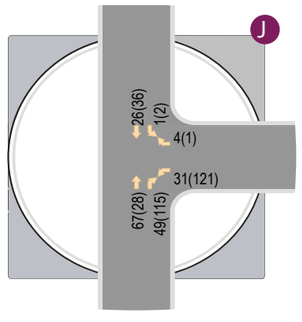
Collector A & Joshua Tree Ln.



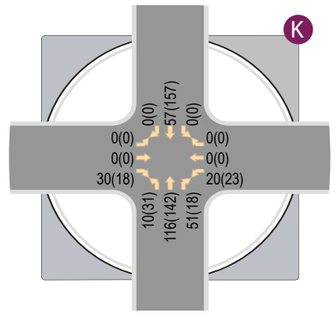
Collector A & Collector B



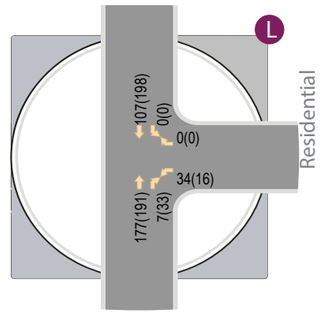
Collector C & Collector B



Quail Run Rd. & Hotel Access



Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access

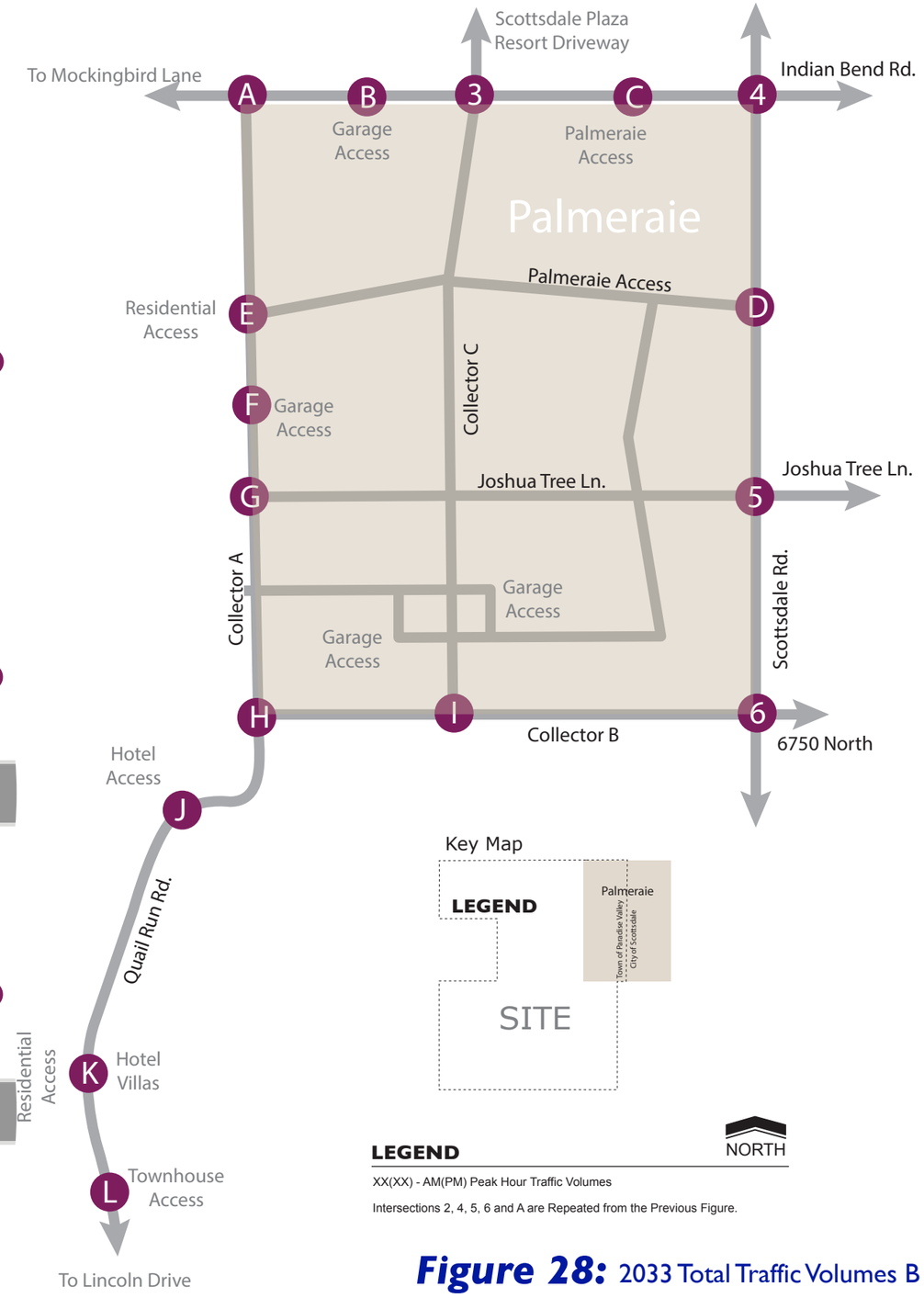


Figure 28: 2033 Total Traffic Volumes B

INTERSECTION CAPACITY ANALYSIS

Peak hour capacity analyses have been conducted for the study intersections and all site access points for the 2018, 2023, 2028 and 2033 horizon years. All unsignalized intersections have been analyzed as such using the methodologies previously discussed. Results of the analyses performed are shown in **Table 15**. Analysis reports for the 2018, 2023, 2028 and 2033 study years are included in **Appendix H**, **Appendix I**, **Appendix J** and **Appendix K**, respectively.

Table 15 – Future Peak Hour Levels of Service

ID	Intersection	Traffic Control	Approach/ Movement	AM(PM) Peak Hour LOS			
				2018	2023	2028	2033
1	Mockingbird Ln. & Northern Ave.	4-way stop	NB left	B(B)	B(C)	B(C)	B(C)
			NB thru/right	A(A)	A(A)	A(A)	A(A)
			SB shared	A(A)	A(A)	A(A)	A(A)
			EB left	A(A)	A(A)	A(A)	A(A)
			EB thru/right	B(B)	B(B)	B(B)	B(B)
			WB shared	A(A)	A(A)	A(A)	A(A)
			Overall	**A(B)**	**B(B)**	**B(B)**	**B(B)**
2	Mockingbird Ln. & Indian Bend Rd.	1-way stop (WB)	SB left	A(A)	A(A)	A(A)	A(A)
			WB left	C(B)	C(C)	C(C)	C(C)
			WB right	B(B)	B(B)	B(B)	B(B)
3	Scottsdale Plaza Resort Driveway & Indian Bend Rd.	2-way stop (NB/SB)	NB shard	-(-)	A(B)	A(B)	A(B)
			SB shared	B(B)	B(C)	B(C)	B(C)
			EB left	A(A)	A(A)	A(A)	A(A)
			WB left	-(-)	A(A)	A(A)	A(A)
4	Scottsdale Rd. & Indian Bend Rd.	(1)Signalized	NB left	D(D)	D(D)	D(D)	D(D)
			NB thru	C(D)	C(D)	C(D)	C(D)
			NB right	B(B)	B(B)	B(B)	B(B)
			SB left	D(D)	D(E)	D(E)	D(E)
			SB thru	D(C)	D(C)	D(C)	D(D)
			SB right	D(D)	B(A)	D(A)	B(A)
			EB left	E(E)	E(E)	E(F)	E(F)
			EB thru	E(E)	F(F)	F(F)	F(F)
			EB right	D(D)	D(D)	D(D)	D(D)
			WB left	E(E)	E(E)	E(E)	E(E)
			WB thru	D(D)	D(F)	D(F)	D(F)
			WB right	B(B)	B(B)	B(B)	B(B)
			Overall	**D(D)**	**D(D)**	**D(E)**	**D(E)**
5	Scottsdale Rd. & Joshua Tree Rd.	(1)2-way stop (EB/WB)	SB left	D(F)	D(F)	D(F)	D(F)
			EB right	-(-)	E(F)	E(F)	E(F)
			WB shared	C(D)	C(E)	F(F)	F(E)

(1) Final mitigation and operation conditions will be determined by the City of Scottsdale.

Table 15 – Future Peak Hour Levels of Service (Continued…..)

ID	Intersection	Traffic Control	Approach/ Movement	AM(PM) Peak Hour LOS 2018	2023	2028	2033
6	Scottsdale Rd. & 6750 North	(1)(2) Signalized	NB left	C(C)	C(D)	C(D)	C(D)
			NB thru	A(A)	A(A)	A(A)	A(A)
			SB thru	C(C)	C(D)	D(D)	D(D)
			SB right	B(B)	B(B)	B(B)	B(B)
			EB left	E(E)	E(E)	E(E)	E(E)
			EB right	-(C)	C(C)	C(C)	C(C)
			Overall	**B(B)**	**C(C)**	**C(C)**	**C(C)**
7	Tatum Blvd. & Lincoln Dr.	Signalized	NB left	C(C)	C(C)	C(C)	C(C)
			NB thru	D(D)	D(D)	D(D)	D(E)
			NB right	E(C)	E(D)	F(D)	F(D)
			SB left	C(D)	D(E)	D(E)	D(E)
			SB thru	C(C)	C(C)	C(C)	D(C)
			SB right	D(C)	D(C)	D(C)	D(C)
			EB left	E(D)	E(D)	E(D)	E(D)
			EB thru	E(E)	F(F)	F(F)	F(F)
			EB right	E(E)	F(F)	F(F)	F(F)
			WB left	F(F)	F(F)	F(F)	F(F)
			WB thru	D(F)	D(F)	D(F)	D(F)
			WB right	C(D)	C(E)	C(E)	C(E)
			Overall	**D(E)**	**E(F)**	**E(F)**	**E(F)**
8	Invergordan Rd. & Lincoln Dr.	Signalized	NB left	C(C)	C(C)	C(C)	C(C)
			NB thru/left	C(C)	C(C)	C(C)	C(C)
			SB shared	C(C)	C(C)	C(C)	C(C)
			EB left	A(B)	A(B)	A(B)	A(B)
			EB thru	A(B)	A(B)	A(B)	A(B)
			EB right	A(B)	A(B)	A(B)	A(B)
			WB left	B(B)	B(C)	B(C)	B(C)
			WB thru	A(B)	A(B)	A(B)	A(B)
			WB right	A(B)	A(B)	A(B)	A(B)
			Overall	**A(B)**	**A(B)**	**A(B)**	**A(B)**
9	Mockingbird Ln. & Lincoln Dr.	Signalized	NB left	D(D)	D(D)	D(D)	D(D)
			NB thru/right	D(E)	D(E)	D(E)	D(E)
			SB left	D(D)	D(D)	D(D)	D(D)
			SB thru	D(D)	D(D)	D(D)	D(E)
			SB right	E(D)	E(E)	D(E)	E(E)
			EB left	C(C)	D(D)	D(D)	D(D)
			EB thru	B(A)	B(A)	B(A)	B(A)
			EB right	B(A)	B(A)	B(A)	B(A)
			WB left	C(D)	C(D)	C(D)	C(D)
			WB thru	C(D)	C(D)	C(D)	C(D)
			WB right	C(B)	C(B)	C(B)	C(B)
			Overall	**C(C)**	**C(C)**	**C(C)**	**C(C)**

(1) Final mitigation and operation conditions will be determined by the City of Scottsdale.
(2) An Alternative analysis for this intersection is presented in **Table 17** for a single northbound left turn lane option.

Table 15 – Future Peak Hour Levels of Service (Continued…..)

ID	Intersection	Traffic Control	Approach/ Movement	AM(PM) Peak Hour LOS 2018	2023	2028	2033
10	Quail Run & Lincoln Dr.	Signalized	NB shared	E(E)	E(D)	E(D)	E(D)
			SB left/thru	E(E)	E(D)	E(D)	E(D)
			SB right	E(E)	E(E)	E(E)	E(E)
			EB left	A(A)	A(A)	A(A)	A(A)
			EB thru	A(A)	A(A)	A(A)	A(A)
			EB right	A(A)	A(A)	A(A)	A(A)
			WB left	A(A)	A(A)	A(A)	A(A)
			WB thru	A(A)	A(B)	A(B)	A(B)
			WB right	A(A)	A(A)	A(A)	A(A)
			Overall	**A(A)**	**A(B)**	**A(B)**	**A(B)**
11	Scottsdale Rd. & Lincoln Dr.	(1)Signalized	NB left	C(C)	E(C)	E(C)	E(C)
			NB thru	A(A)	A(B)	A(B)	A(B)
			NB right	A(B)	A(B)	A(B)	A(C)
			SB left	D(D)	E(D)	E(D)	E(D)
			SB thru	C(D)	C(F)	C(F)	C(F)
			SB right	D(D)	C(D)	C(D)	C(D)
			EB left/thru	F(F)	F(F)	F(F)	F(F)
			EB right	E(D)	F(E)	F(E)	F(E)
			WB left	E(E)	E(E)	E(E)	E(E)
			WB thru	E(E)	E(E)	E(E)	E(E)
			WB right	E(E)	E(E)	E(E)	E(E)
			Overall	**D(D)**	**F(E)**	**F(E)**	**F(E)**
12	Mockingbird Ln. & McDonald Dr.	4-way stop	NB shared	A(A)	A(B)	A(B)	A(B)
			SB left	B(B)	B(B)	B(B)	B(B)
			SB right	A(A)	A(B)	A(B)	A(B)
			EB left	A(A)	A(B)	A(B)	A(B)
			EB shared	B(B)	B(B)	B(B)	B(B)
			WB left	A(A)	A(A)	A(A)	A(A)
			WB shared	B(B)	B(B)	B(C)	B(C)
			Overall	**B(B)**	**B(B)**	**B(B)**	**B(B)**
13	Scottsdale Rd. & McDonald Dr.	(1)Signalized	NB left	D(D)	D(D)	D(D)	D(D)
			NB thru	C(D)	C(F)	C(F)	C(F)
			NB right	C(C)	C(C)	C(C)	C(C)
			SB left	C(D)	C(D)	C(D)	C(D)
			SB thru	D(D)	F(D)	F(D)	F(F)
			SB right	B(C)	B(C)	B(C)	B(C)
			EB left	D(D)	E(D)	E(D)	E(D)
			EB thru	E(E)	E(E)	E(E)	E(E)
			EB right	E(E)	E(E)	E(E)	E(E)
			WB left	F(F)	F(F)	F(F)	F(F)
			WB thru	D(D)	D(D)	D(D)	D(D)
			WB right	C(C)	C(C)	C(C)	C(D)
			Overall	**D(D)**	**D(E)**	**E(E)**	**E(E)**
A	Collector A & Indian Bend Rd.	Roundabout	NB shared	A(A)	A(A)	A(A)	A(A)
			EB shared	A(A)	A(A)	A(A)	A(A)
			WB shared	A(A)	A(A)	A(A)	A(A)
			Overall	**A(A)**	**A(A)**	**A(A)**	**A(A)**

(1) Final mitigation and operation conditions will be determined by the City of Scottsdale.

Table 15 – Future Peak Hour Levels of Service (Continued…..)

ID	Intersection	Traffic Control	Approach/ Movement	AM(PM) Peak Hour LOS 2018	2023	2028	2033
B	Garage Access & Indian Bend Rd.	1-way stop (SB)	NB shared WB left	-(-) -(-)	B(B) A(A)	B(B) A(A)	B(B) A(A)
C	Palmeraie Access & Indian Bend Rd.	1-way stop (SB)	NB shared WB left	-(-) -(-)	B(C) A(A)	B(C) A(A)	B(C) A(A)
D	Scottsdale Rd. & Palmeraie Access	(1)1-way stop (WB)	EB Right	-(-)	C(C)	C(C)	C(C)
E	Collector A & North Residential Access	1-way stop (EB)	NB shared EB shared	A(A) A(A)	A(A) A(A)	A(A) A(A)	A(A) A(A)
F	Collector A & Garage Access	1-way stop (WB)	SB shared WB shared	-(-) -(-)	A(A) A(A)	A(A) A(A)	A(A) A(A)
G	Collector A & Joshua Tree Ln.	1-way stop (WB)	SB shared WB shared	-(-) -(-)	A(A) A(A)	A(A) A(A)	A(A) A(A)
H	Collector A & Collector B	1-way stop (WB)	SB shared WB shared	-(-) -(-)	A(A) A(B)	A(A) A(B)	A(A) A(B)
I	Collector C & Collector B	1-way stop (SB)	SB shared WB shared	-(-) -(-)	A(C) A(A)	A(C) A(A)	A(C) A(A)
J	Hotel Access & Quail Run Rd.	1-way stop (WB)	SB shared WB shared	A(A) A(A)	A(A) A(B)	A(A) A(B)	A(A) A(B)
K	North Residential Access & Quail Run Rd.	Roundabout	NB EB WB	A(A) A(A) A(A)	A(A) A(A) A(A)	A(A) A(A) A(A)	A(A) A(A) A(A)
			Overall	**A(A)**	**A(A)**	**A(A)**	**A(A)**
L	Townhome Access & Quail Run Rd.	1-way stop (WB)	SB shared WB shared	A(A) B(A)	A(A) B(B)	A(A) B(B)	A(A) B(B)

(1) Final mitigation and operation conditions will be determined by the City of Scottsdale.

The results of the future analyses summarized in **Table 15** indicates that all study intersections within the Town of Paradise Valley operate acceptably except for the intersection of Tatum Boulevard/Lincoln Drive. Within the City of Scottsdale, most study intersections along Scottsdale Road are anticipated to experience elevated delays in one or more movements during the AM and/or PM peak hour. These intersections are discussed along with recommended mitigation strategies below. Final mitigation and operating conditions of intersections within the jurisdiction of the City of Scottsdale will be subject to approval by the City of Scottsdale.

The signalized intersection of site ***Tatum Boulevard and Lincoln Drive*** continues to experience elevated delays in some of its individual movements. Due to the general high traffic volumes using the intersection, right-of-way (ROW) acquisition would be required to mitigate the delay by installing additional through lanes. Lengthening the westbound right-turn lane is recommended if right-of-way can be acquired.

All other study intersections within the Town of Paradise Valley are anticipated to operate acceptably. It may be noted that a couple movements at the intersections of Mockingbird Lane/Lincoln Drive and Quail Run Road/Lincoln Drive are anticipated to experience elevated delays during the peak hours; however, elevated delays for a few individual movements at are not uncommon at signalized intersections of major roadways. A southbound right-turn lane at the intersection of ***Mockingbird Lane and Lincoln Drive*** is recommended to reduce southbound delays if right of way can be acquired.

Without mitigation, the signalized intersection of ***Scottsdale Road and Indian Bend Road*** continues to experience elevated delays in some of its individual movements. Mitigation could include signal timing adjustments and reconfiguring the eastbound approach to provide two left turn lanes, one through lane and a shared through-right turn lane. The reconfiguration will not require additional pavement width at the intersection and may be completed with the half-street improvements on Indian Bend Road. After the recommended mitigation, the intersection is anticipated to operate at acceptable LOS.

The improved condition of the intersection of ***Scottsdale Road and 6750 North*** is anticipated to operate acceptably overall. The improvements include constructing the north half of 6750 North, restriping the approach, modifying the Scottsdale Road median and striping to provide a second northbound left turn lane, add a northbound left-turn protected phase with an eastbound right-turn overlap, and appropriate signal phase timing adjustments. While the intersection improvements allow the intersection to operate acceptably overall, the eastbound left turn movement is anticipated to continue to operate with elevated delays during the peak hours. Final mitigation at this intersection will be determined by the City of Scottsdale.

The two-way stop controlled intersection of site ***Scottsdale Road and Joshua Tree Road*** continues to experience elevated delays. Poor LOS is not uncommon for stop controlled movements to major roadways. It should be noted that Synchro software does not allow HCM analysis left turn movements with more than one stage at four-legged intersections so actual delay may be better than analyzed. No mitigation is recommended.

Without mitigation, the intersection of site ***Scottsdale Road and Lincoln Drive*** continues to experience elevated delays in some of its individual movements. It is recommended to adjust the signal timing and add right-turn overlap periods, where applicable. The mitigation will improve the delay such that the intersection may operate acceptably, although some individual movements are still anticipated to operate with elevated delays during the peak hours.

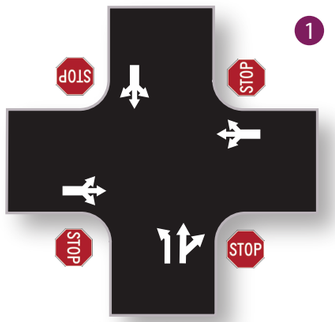
The intersection of site ***Scottsdale Road and McDonald Drive*** continues to experience elevated delays in some of its individual movements. Due to the general high traffic volumes using the intersection, ROW acquisition would be required to mitigate the delays; however, this is not recommended as part of this study.

The mitigated intersection LOS for study intersections that have been adjusted with the recommended mitigation is summarized in **Table 16**. These mitigated conditions represent recommendations based on LOS. Factors such as signal progression and pedestrians should also be a consideration before final improvement strategies are determined by the applicable jurisdiction. The future lane configurations and traffic controls are depicted in **Figure 29** and **Figure 30**. The analysis reports for the 2033 mitigated conditions are included within **Appendix L**.

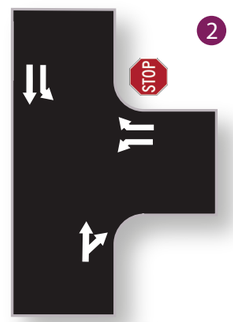
Table 16 – Future Peak Hour Levels of Service Mitigated

ID	Intersection	Traffic Control	Approach/ Movement	AM(PM) Peak Hour LOS	
				2033 w/o Mitigation	2033 w/Mitigation
4	Scottsdale Rd. & Indian Bend Rd.	Signalized	NB left	D(D)	D(D)
			NB thru	C(D)	A(C)
			NB right	B(B)	A(A)
			SB left	D(E)	D(E)
			SB thru	D(D)	D(D)
			SB right	D(D)	B(C)
			EB left	E(F)	E(D)
			EB thru	F(F)	E(E)
			EB right	D(D)	E(E)
			WB left	E(E)	E(E)
			WB thru	D(F)	C(E)
			WB right	B(B)	B(C)
			Overall	**D(E)**	**C(D)**
11	Scottsdale Rd. & Lincoln Dr.	Signalized	NB left	E(C)	D(E)
			NB thru	A(B)	B(B)
			NB right	A(C)	B(C)
			SB left	E(D)	D(E)
			SB thru	C(F)	E(E)
			SB right	C(D)	F(D)
			EB left/thru	F(F)	E(E)
			EB right	F(E)	D(D)
			WB left	E(E)	E(E)
			WB thru	E(E)	E(F)
			WB right	E(E)	E(F)
			Overall	**F(E)**	**D(D)**

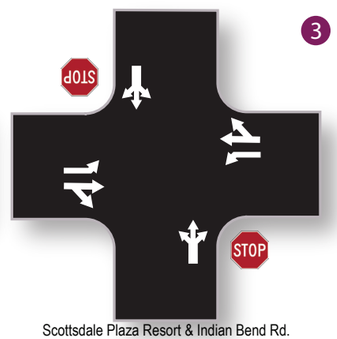
An analysis was also performed for an alternative condition in which only a single northbound left-turn lane is provided at the intersection of Scottsdale Road and 6750 North. Should the City of Scottsdale not allow the second left-turn lane, the movement capacity would be decreased (comparatively), causing increased delay and queuing. For purposes of this study, one-third of the projected left-turn volume is no longer anticipated to turn here, but instead continue northbound on Scottsdale Road until turning left onto Indian Bend Road (65 vehicles during the AM peak hour and 106 vehicles during the PM peak hour). The intersections of Scottsdale Road and 6750 and Scottsdale Road and Indian Bend Road were analyzed using the methodologies previously explained, under the alternative conditions. **Table 17** presents the resulting LOS at the intersections. LOS worksheets are included in **Appendix M**. Final mitigation and operating conditions of intersections within the jurisdiction of the City of Scottsdale will be subject to approval by the City of Scottsdale.



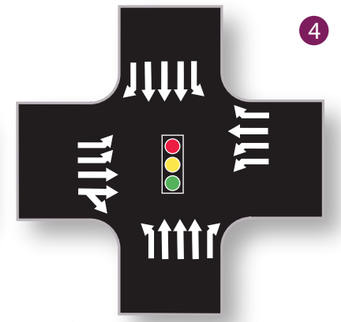
Mockingbird Ln. & Northern Ave.



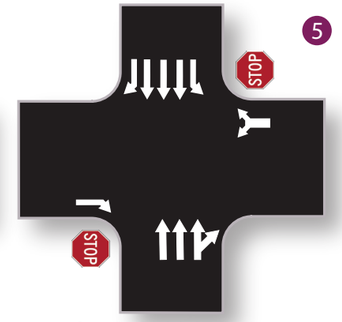
Mockingbird Ln. & Indian Bend Rd.



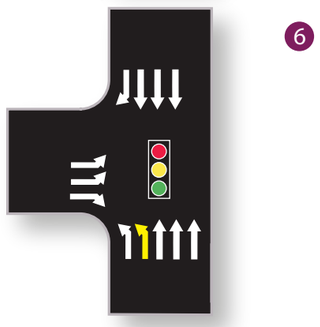
Scottsdale Plaza Resort & Indian Bend Rd.



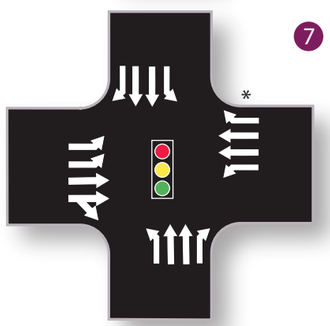
Scottsdale Rd. & Indian Bend Rd.



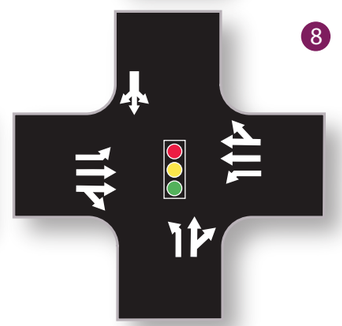
Scottsdale Rd. & Joshua Tree Ln.



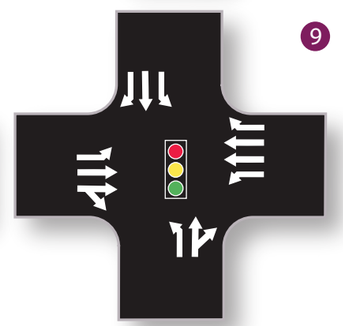
Scottsdale Rd. & 6750 North



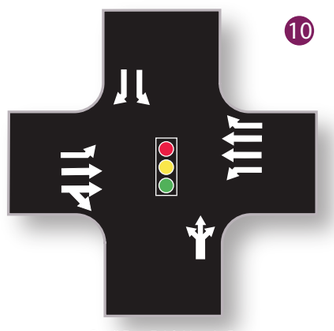
Tatum Blvd. & Lincoln Dr.



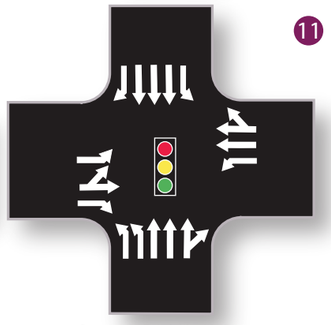
Invergordon Rd. & Lincoln Dr.



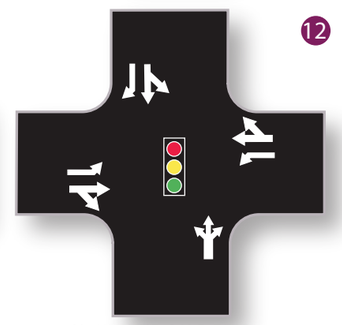
Mockingbird Ln. & Lincoln Dr.



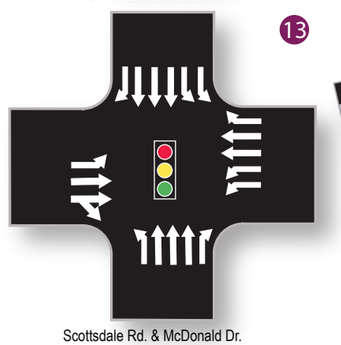
Quail Run Rd & Lincoln Dr.



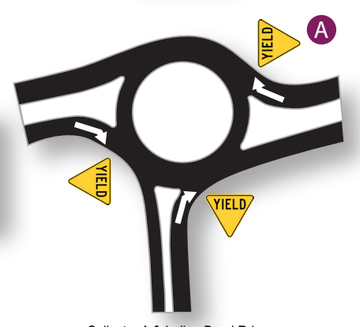
Scottsdale Rd. & Lincoln Dr.



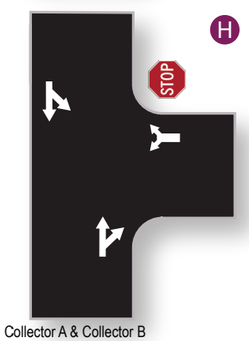
Mockingbird Ln. & McDonald Dr.



Scottsdale Rd. & McDonald Dr.



Collector A & Indian Bend Rd.



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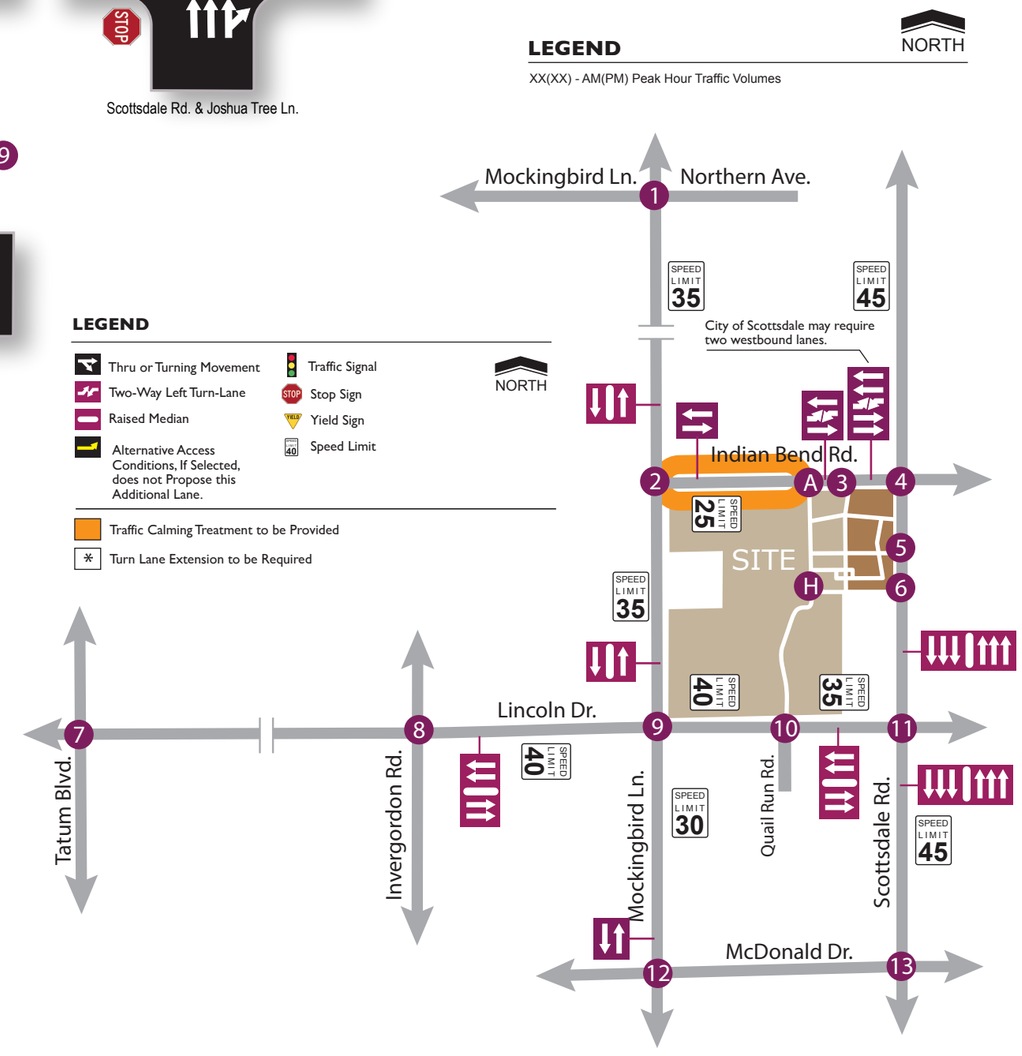
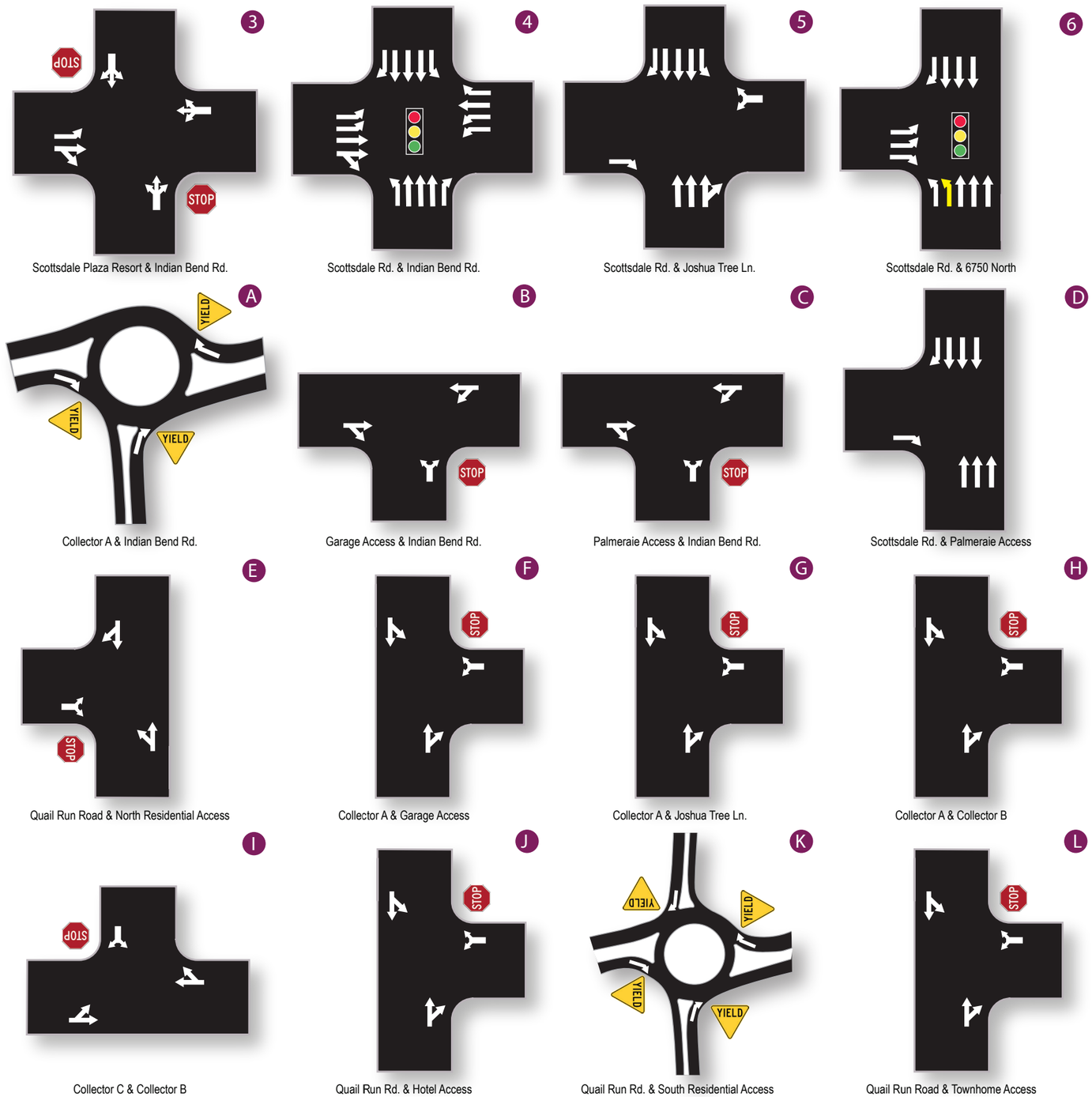


Figure 29: Future Lane Configurations and Traffic Controls A



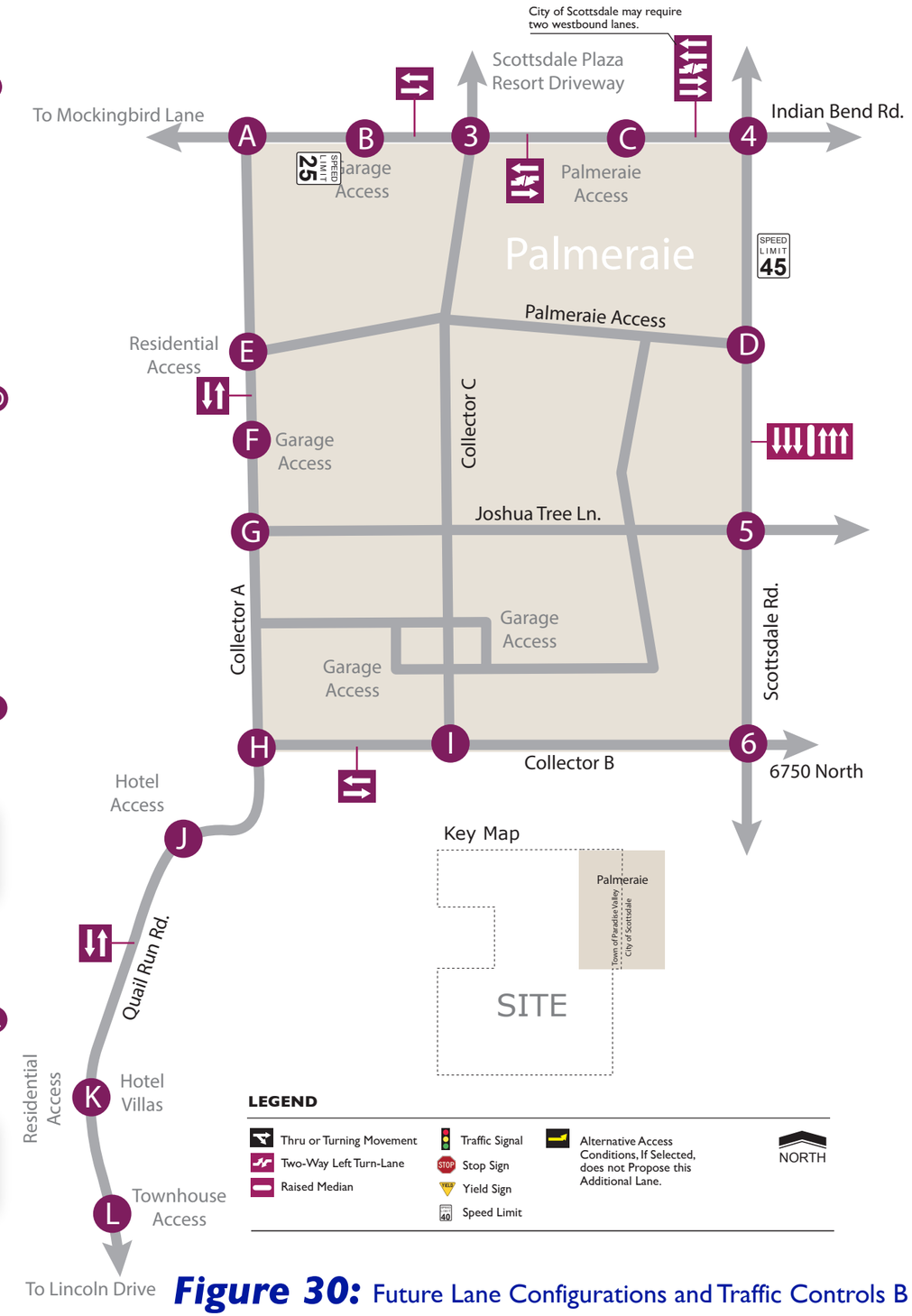


Figure 30: Future Lane Configurations and Traffic Controls B

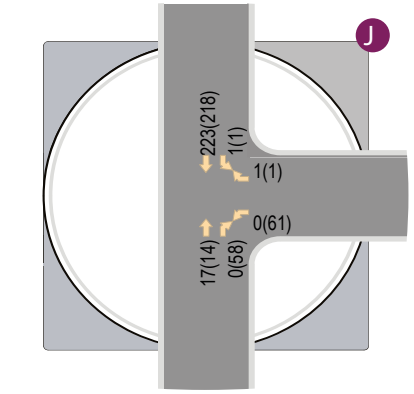
Table 17 – Alternative Peak Hour Levels of Service

ID	Intersection	Traffic Control	Approach/ Movement	AM(PM) Peak Hour LOS	
				2033 Proposed	2033 Alternative
4	Scottsdale Rd. & Indian Bend Rd.	Signalized	NB left	D(D)	D(D)
			NB thru	A(C)	A(C)
			NB right	A(A)	A(A)
			SB left	D(E)	D(E)
			SB thru	D(D)	D(D)
			SB right	B(C)	B(C)
			EB left	E(D)	E(D)
			EB thru	E(E)	E(E)
			EB right	E(E)	E(E)
			WB left	E(E)	E(E)
			WB thru	C(E)	C(E)
			WB right	B(C)	B(C)
			Overall	**C(D)**	**C(D)**
6	Scottsdale Rd. & 6750 North	Signalized	NB left	C(D)	C(D)
			NB thru	A(A)	A(A)
			SB thru	D(D)	B(C)
			SB right	B(B)	A(B)
			EB left	E(E)	E(E)
			EB right	C(C)	C(D)
			Overall	**C(C)**	**B(C)**

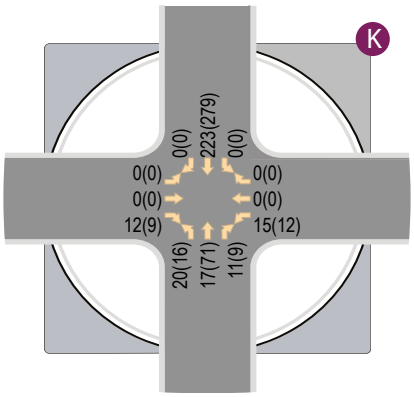
The peak hour analyses of the alternative access conditions (only a northbound left turn lane on Scottsdale Road approaching 6750 North) indicate that both the intersection of Scottsdale Road and Indian Bend Road and the intersection of Scottsdale Road and 6750 North are anticipated to operate with fairly similar LOS compared to the LOS anticipated with the proposed conditions. Final mitigation and operating conditions of intersections within the jurisdiction of the City of Scottsdale will be subject to approval by the City of Scottsdale.

An analysis was also performed for some of the intersections considering traffic during an event condition. From a separate parking study of the site, it was determined that 200 vehicles could participate in an event. These 200 vehicles (considering the exit condition) were distributed from the hotel according to the retail distribution discussed previously. The event exit condition will typically occur at night, not during the PM peak hour. For non-event traffic during the event exiting peak hour, PM peak hour traffic volumes were scaled down by 50 percent. This reduction was chosen because the 24-hour count on Lincoln Drive indicated that traffic volumes at 8:00 PM or later were less than 50 percent of the recorded peak hour traffic.

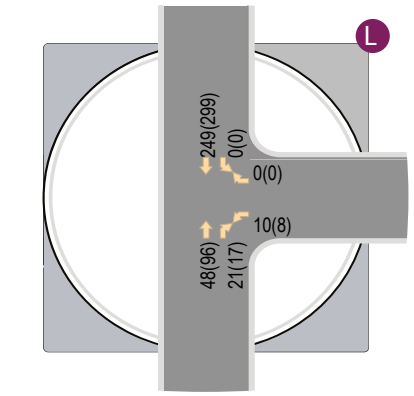
Projected total event peak hour volumes at selected intersections are depicted in **Figure 31**. These intersections were analyzed using the methodologies described previously. **Table 18** presents the resulting LOS at the intersections. LOS worksheets are included in **Appendix N**.



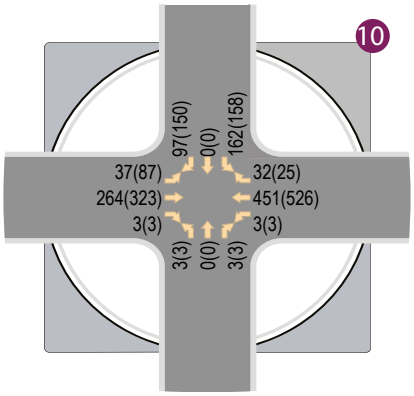
Quail Run Rd. & Hotel Access



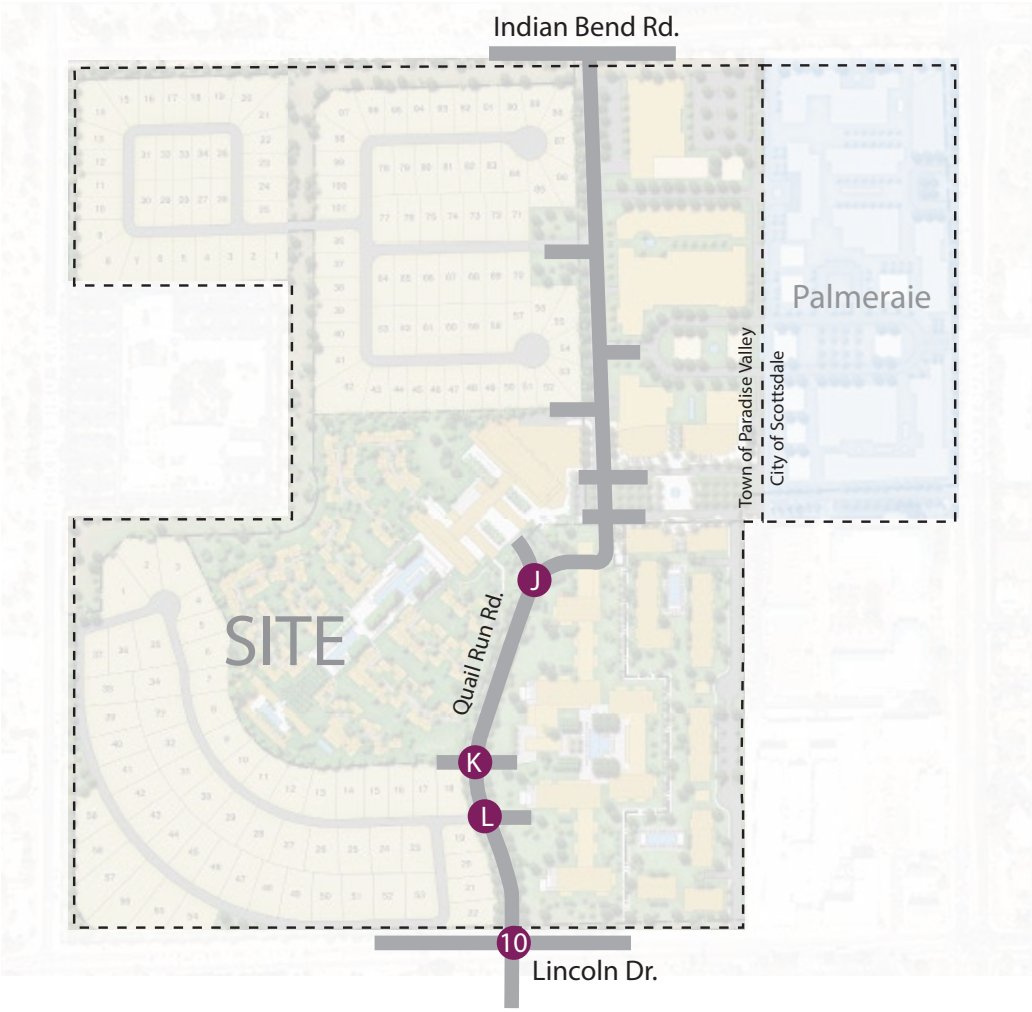
Quail Run Rd. & South Residential Access



Quail Run Rd. & Townhome Access



Quail Run Rd & Lincoln Dr.



LEGEND

NORTH

XX(XX) - 2018(2033) - Peak Hour Volumes at Event End

Figure 31: Total Traffic at Event End

Table 18 – Event Peak Hour Levels of Service

ID	Intersection	Traffic Control	Approach/ Movement	Event LOS 2018	Event LOS 2033
10	Quail Run & Lincoln Dr.	Signalized	NB shared	D	D
			SB left/thru	E	E
			SB right	D	D
			EB left	A	A
			EB thru	A	A
			EB right	A	A
			WB left	A	A
			WB thru	A	B
			WB right	A	A
			Overall	**B**	**B**
J	Hotel Access & Quail Run Rd.	1-way stop (WB)	SB shared	A	A
			WB shared	A	A
K	North Residential Access & Quail Run Rd.	Roundabout	NB	A	A
			EB	A	A
			WB	A	A
			Overall	**A**	**A**
L	Townhome Access & Quail Run Rd.	1-way stop (WB)	SB shared	A	A
			WB shared	B	B

All intersections considered during the event scenario are anticipated to operate acceptably.

SIGNAL WARRANT ANALYSIS

The development proposes signalizing the intersection of Quail Run Road and Lincoln Drive, which is proposed as the main Ritz Carlton Resort site access by Phase 1 opening horizon year 2018. The projected 2018 traffic volumes at this intersection were compared to the peak hour signal warrant criteria, warrant 3, presented within the *2010 Manual on Uniform Traffic Control Devices (MUTCD), Section 4C.04.* The volumetric criteria to satisfy the warrant is based on the volumes entering the intersection on the major road (Lincoln Drive) and the larger approach of the minor street (Site Driveway at Quail Run Road). The traffic volumes presented in **Figure 21** indicates that the Lincoln Drive volume is sufficient such that the minor street approach volume need only surpass the lower threshold volume of 100 vehicles. As the 2018 AM peak hour volume of the southbound approach is 135 vehicles the intersection exceeds the threshold and therefore meets the peak hour signal warrant. Furthermore, the main Ritz Carlton driveway is anticipated to generate 247 vehicles during an event peak hour scenario. While other signal warrants may be met as well, meeting the peak hour warrant sufficiently justifies the installation of the signal proposed by the developer for purposes of this study.

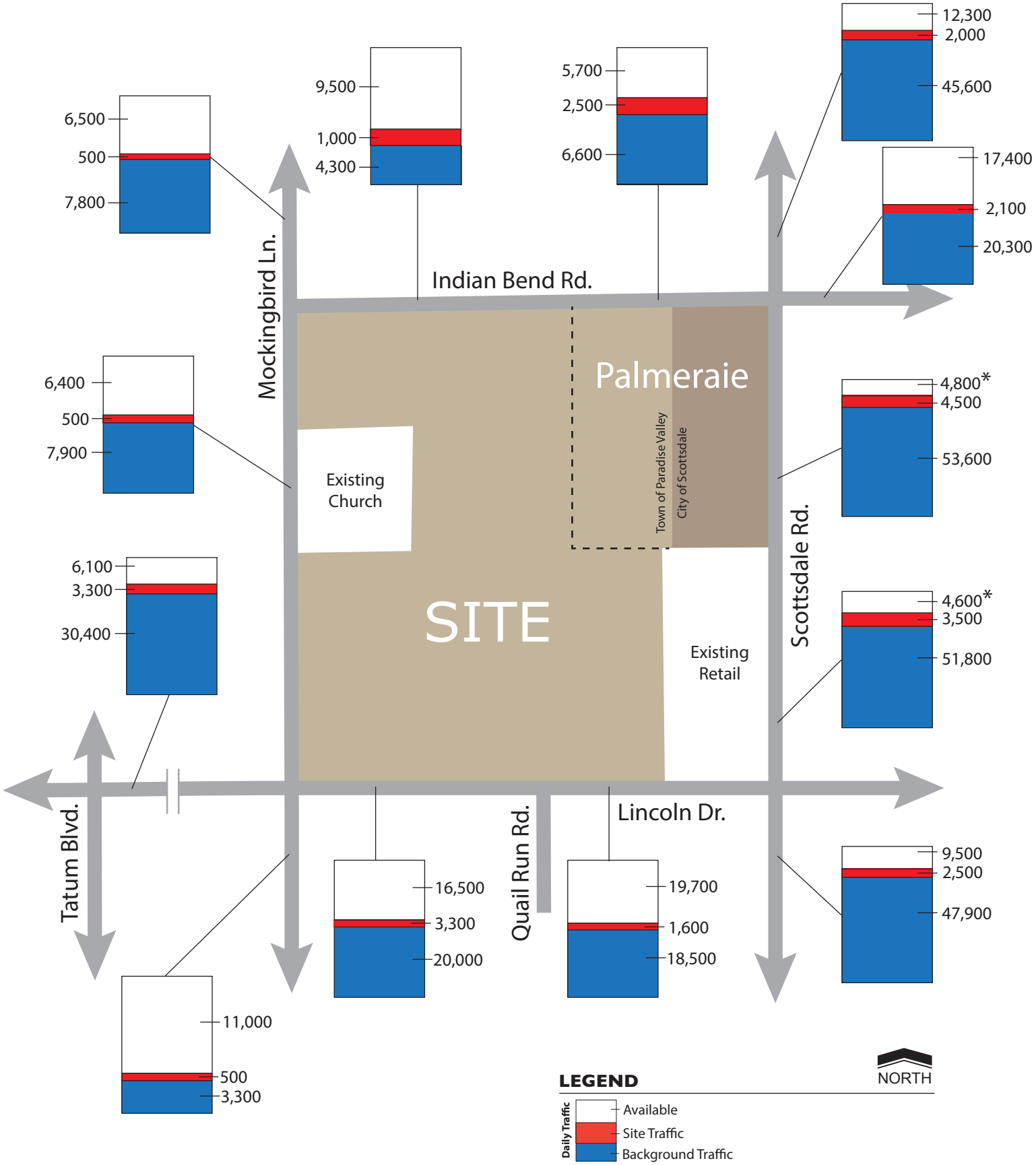
SEGMENT CAPACITY ANALYSIS

The site daily trips is added to the projected background ADT to produce total future ADT of the roadway segments. Projected ADT are presented in **Table 19**. Calculations are presented along with the ADT capacity according to Florida's Department of Transportation (FDOT). It should be noted that FDOT's LOS thresholds are more conservative than Paradise Valley's volume thresholds. For example, Paradise Valley thresholds consider Lincoln Drive's capacity to be 40,900 whereas FDOT's threshold is 39,800 (FDOT is known to be proactive in publishing traffic/transportation studies and data). All major roadways within the study area are anticipated to have traffic volumes below the maximum roadway capacity thresholds upon full buildout of the proposed site. The background, site and available volume capacity on several roadway segments are depicted on **Figure 32**. ADT calculations are included within **Appendix O**

Table 19 – 24-Hour Segment Traffic Volumes

Roadway	Reference	Site ADT		Total ADT				Capacity
		2018	2023+	2018	2023	2028	2033	
Scottsdale Rd.	North of Indian Bend Road	300	2,000	42,500	45,500	56,500	47,600	59,900
Scottsdale Rd.	Between Indian Bend Rd. & Lincoln Dr.	700	4,500	50,800	55,800	56,900	58,100	62,900(1)
Scottsdale Rd.	Between Lincoln Dr. & McDonald Dr.	600	3,500	48,900	53,000	54,100	55,300	59,900
Scottsdale Rd.	South of McDonald Dr.	500	2,500	45,100	48,300	49,300	50,400	59,900
Mockingbird Ln.	Between Indian Bend Rd. & Lincoln Dr.	400	500	7,700	8,000	8,200	8,400	14,800
Indian Bend Rd.	East of Scottsdale Rd.	700	2,100	19,600	21,600	22,000	22,400	39,800
Lincoln Dr.	East of Tatum Blvd.	2,000	3,300	30,200	32,500	33,100	33,700	39,800
Lincoln Dr.	West of Quail Run Rd.	2,000	3,300	20,500	22,600	22,900	23,300	39,800
McDonald Drive	East of Scottsdale Rd.	200	900	20,300	21,500	22,000	22,500	39,800

(1) FDOT applies a 5% increase for having right-turn lanes.



* Higher Capacity when Right-Turn Lanes are Considered.

Figure 32: Used and Available Roadway Capacity

QUEUING ANALYSIS

RIGHT TURN LANES

Paradise Valley lists the following criteria for consideration of a right turn lane. Three of the four criteria must be met to warrant a right turn lane.

- Adjacent street has at least 5,000 vpd.
- The posted speed limit is 35 mph or greater.
- At least 1,000 vehicles per day will use the driveway.
- At least 90 vehicles are expected to make right turns into the driveway.

Based on these criteria, a right turn lane is warranted at the intersection of Quail Run Road and Lincoln Drive approaching westbound, which the Developer proposes. The developer will also construct a westbound approaching right turn lane on Lincoln Drive approaching Mockingbird Lane, which also meets the above criteria.

Table 20 presents the right-turn queue lengths recommended by the volumes anticipated in the 2033 horizon year. Additional storage length calculations should be completed prior to traffic signal installation or a change in intersection stop control that are not considered within this study.

LEFT TURN STORAGE ANALYSIS

All accesses where a left-turn movement into the site is allowed has a left-turn lane or two-way left-turn lane provided, with the exception of the roundabout access on Indian Bend Road.

TURN LANE STORAGE LENGTHS

A queuing analysis for left turns was performed for all intersection turn lanes under stop or signal control within the study area, according the 2033 Synchro analyses which provides projected 95th percentile queue lengths. The resulting turn lane storage recommendations for the 2033 horizon year are summarized in **Table 20**. Synchro queuing reports are included within **Appendix L**.

Table 20 – 2038 Turn Lane Lengths

ID	Intersection	Control	Movement	AM(PM) LOS		
				Existing[1]	Synchro	Recommended
4	Scottsdale Rd. & Indian Bend Rd.	Signalized	NB left	235’	111’	[3]235’
			SB left	205’	248’	250’
			EB left	95’	[2]101’	[2]100’
			WB left	[2]260’	[2]373’	[4]260’
			NB right	210’	95’	[5]210’
			SB right	-	20’	[5]150’
			WB right	265’	99’	[3]265’
6	Scottsdale Rd. & 6750 North	Signalized	NB left	95’	[2]96’	[6]115’
			EB left	55’	[2]92’	[2][3]150’
			SB right	100’	58’	[5][7]150’
			EB right	55’	264’	275’
9	Mockingbird Ln. & Lincoln Dr.	Signalized	NB left	80’	41’	[3]80’
			SB left	135’	116’	[3]135’
			EB left	150’	368’	[5][8]350’
			WB left	95’	63’	[3]95’
			SB right	-	167’	175’
10	Quail Run Rd. & Lincoln Dr.	Signalized	EB left	-	113’	[5]150’
			WB left	TWLTL[9]	7’	[5]150’
			WB right	-	12’	[5]150’

(1) Striped length from stop bar, measured using aerial photographs, rounded to the nearest 5-feet.
(2) Dual turn lanes. Measurements and calculations are for the length of each turn lane.
(3) Existing queue storage provides sufficient space for future volumes.
(4) Turn lane cannot be extended due to prior turn lane.
(5) Maximum queue length is set at 350’ for signalized intersections and 75’ minimum storage length for unsignalized intersections. A minimum of 150’ is recommended for new turn lanes.
(6) Approximately 115’ of dual queue storage may be constructed if the existing 110-foot gap is reduced to 90 feet during modification of the median and striping.
(7) Existing storage length will be reduced with completion of the intersection, recommend extending the storage length to 150 feet.
(8) Extension of turn lane will require removal of a center median.
(9) Existing or proposed two-way left turn lane.

The new turn lanes at the intersection of Quail Run Road and Lincoln Drive are recommended to be striped with 150-feet of storage each. The proposed northbound dual left-turn lanes at the intersection of Scottsdale Road and 6750 North are able to be constructed with approximately 115-feet of storage each, which is more storage than the Synchro analysis predicts. The southbound right-turn lane at the intersection is will need to be increased when the intersection is completed; 150 feet of storage is recommended.

The westbound left-turn lane at the intersection of Mockingbird Lane and Lincoln Drive is projected to require additional storage due to residential traffic volumes. It is recommended that the turn lane be extended to provide 350-feet of storage which will require the removal of a center median. The new south- and westbound right-turn lanes at the intersection are recommended to provide 175 feet and 150 feet of storage, respectively.

Should only a single northbound left turn lane be provided at the intersection of Scottsdale Road and 6750 North, Synchro's 95th percentile queue projection for the turn lane is 132 feet; in the same scenario, the projected 95th percentile queue for the northbound left turn lane on Scottsdale Road approaching Indian Bend Road is 309 feet. This intersection, in addition to the westbound left-turn queue, will be analyzed further as part of the update to the Palmeraie TIA as requested by the City of Scottsdale with the updated Palmeraie site plan. Final mitigation at these intersections will be determined by the City of Scottsdale.

SITE DISTANCE ANALYSIS

There must be sufficient unobstructed sight distance along both approaches of an intersection and across their included corners to allow operators of vehicles to see each other in time to prevent a collision. The sight triangle is the area encompassed by the line of sight from a stopped vehicle on the minor roadway to the approaching vehicle on the major roadway.

An intersection site distance analysis was performed to set guidelines for establishing line of sight for the proposed development at major internal intersections. Using the guidelines set forth by *A Policy on Geometric Design of Highways and Streets*, **Table 21** was generated for each intersection created by a new site access point.

A major component of calculating sight distance is vehicle travel speed. For this analysis, the following speeds were assumed for each roadway based on their functional classification.

- Scottsdale Road 50 mph Principal Arterial
- Lincoln Drive 45 mph Major Arterial
- Indian Bend Road 35 mph Minor Collector

Table 21 – Intersection Sight Distance Analysis

Site Access	Required Sight Dist. Left (ft)	Required Sight Dist. Right (ft)	Existing Sight Dist. Left (ft)	Existing Sight Dist. Right (ft)
At Lincoln Drive	505	570	1000+	1000+
At Indian Bend Drive	395	445	1000+	1000+
At Scottsdale Road	560	635	1000+	1000+

There are no existing obstructions to sight distance within the project intersections or along the included corners of the existing intersections. Adequate sight distance must be provided at the intersections to allow safe left and right turning movements from the development. Recommended distances for these movements can be found in the table above.

Sight distance is largely based on the design speed of the roadway. When the posted speed limit is reduced, the required sight distance will also be reduced as a result. Sight distance calculations are included within **Appendix P**.

CONCLUSIONS AND RECOMMENDATIONS

The following recommendations have been documented in this study:

General

- This study evaluates four (4) horizon years, opening year (2018), opening plus five (2023), opening plus ten (2028) and opening plus fifteen (2033). The future study horizon years were analyzed to ensure that future off-site impacts were constructed with the current plan.

- Per the collision data reviewed there are no major mitigation measures currently warranted within the vicinity of the site. It should be noted that the intersections of **Tatum Boulevard & Lincoln Drive** and **Scottsdale Road & Indian Bend Road** recorded a high number of rear-end crashes relative to crash type. Due to this occurrence, it is recommended that these intersections be further evaluated by the Town.

- The future lane configurations and traffic controls are depicted in **Figure 29** and **Figure 30**.

- The developer proposes signalizing the intersection of Quail Run Road and Lincoln Drive. The intersection is anticipated to exceed the peak hour signal warrant criteria in the 2018 opening year.

- Projected ADT are presented in **Table 19**. All major roadways within the study area are anticipated to have traffic volumes below the maximum roadway capacity thresholds upon full buildout of the proposed site. The background, site and available volume capacity on several roadway segments are depicted on **Figure 32**.

- An intersection site distance analysis was performed to set guidelines for establishing line of sight for the proposed development at major internal intersections. Using the guidelines set forth by A Policy on Geometric Design of Highways and Streets, **Table 21** was generated for each intersection created by a new site access point.

Roadway Improvements

- The developer will construct half-street improvements to Indian Bend Road from Scottsdale Road to approximately 600 feet to the west. This improvement will provide a two-way left-turn lane (TWLTL) on Indian Bend Road along the improved length. The remainder of Indian Bend Road is currently constructed at its ultimate condition.

- It is likely that the City of Scottsdale will require the addition of a second westbound through lane along Indian Bend Road. This determination will be made by the City of Scottsdale during their review of the Palmeraie TIMA.

- The developer will improve the intersection of Scottsdale Road and 6750 North. The west leg after improvements will consist of two (2) dedicated left-turn lanes, a dedicated right-turn lane and two (2) ingress lanes. The median within the south leg of the intersection will be modified and the northbound lanes restriped to provide two dedicated left-turn lanes and three (3) through lanes. An alternative improvement condition is proposed should the City of Scottsdale not allow dual northbound left turn lanes. Final geometry and mitigation is subject to approval by the City of Scottsdale. Improvements at this intersection could require the relocation of overhead improvements and other utilities.

- The developer proposes to signalize the intersection of Quail Run Road and Lincoln Drive, which will serve as the main entrance to the proposed Ritz Carlton Resort, by opening year 2018. Based on the signal warrant section within this report *2010 MUTCD* signal warrant criteria is met at the main Ritz Carlton entrance by opening year 2018. Signalization at this intersection will require removal of the nearest median (west of the intersection) and also require the developer to construct new medians.

- The developer has agreed to construct a westbound right-turn lane at the intersection of Lincoln Drive and Mockingbird Lane by opening year 2018. The installment of the westbound right-turn lane will improve the traffic characteristics of this intersection. This may require the relocation of the traffic signal and red light cameral on the affected corner.

- If right-of-way is available, the developer should construct a southbound right-turn lane at the intersection of Lincoln Drive and Mockingbird Lane. The installment of the southbound right-turn lane will improve the delay for southbound vehicles with the likely growth in traffic along Lincoln Drive. This will require relocation of the traffic signal on the affected corner.

- As part of planned regional improvements, the Town of Paradise Valley plans to install a raised median on Mockingbird Lane between Lincoln Drive and Northern Avenue between the financial years of 2018 and 2029. This improvement is not anticipated to cause major changes to current traffic patterns.

- The intersection of Mockingbird Lane and Indian Bend Road was evaluated as a one-way stop controlled intersection which continues to meet acceptable levels of service during the study horizon. Input from neighbors indicates a concern for increased delay at this intersection and a possible need to keep traffic flowing in all directions. Optional intersection treatments should be considered in the future.

- The traffic circle located at Intersection A should be evaluated for alternate pavement treatment. The existing pavers are difficult for a bicycle to negotiate.

- Indian Bend Road may require traffic calming elements to be installed between the traffic circle (Intersection A) and Mockingbird Lane if traffic from Palmeraie is prioritized to use Indian Bend Road. The determination to prioritize Indian Bend could be made by the City of Scottsdale during their review of the Palmeraie TIMA. Options for traffic calming that can be applied in areas with high pedestrian and bicycle volumes have been discussed within the TIA. Traffic calming options are discussed within the main body of this TIA.

Trip Generation

- Phase 1 (opening 2018) of the development is anticipated to generate 3,794 daily trips, of which 384 trips are during the AM peak hour and 353 trips are during the PM peak hour.

- Phase 2 (Buildout horizon year 2023) of the development is anticipated to generate a total of 14,710 daily trips, of which 729 trips are during the AM peak hour and 1,303 trips are during the PM peak hour. It was calculated that approximately 20% of total trips are expected to remain internal to the site. Considering the 20% internal capture reduction, 11,768 new daily trips are anticipated with 583 AM peak hour trips and 1,042 PM peak hour trips.

Intersection Capacity Analysis

- The results of the existing analysis summarized in **Table 4** indicate that all study intersections should operate at overall acceptable level of service (LOS D or better) with the exception of Scottsdale Road/Joshua Tree Road. The signalized intersections of Scottsdale Road/Indian Bend Road, Scottsdale Road/Joshua Tree Road, Scottsdale Road/6750 North, Tatum Boulevard/Lincoln Drive, Mockingbird Lane/Lincoln Drive, Scottsdale Road/Lincoln Drive, Scottsdale Road/McDonald Drive operate at acceptable LOS overall but have one or more movements that experience elevated delay during AM and/or PM peak hour.

    - The southbound left and westbound shared movements at the intersection of ***Scottsdale Road and Joshua Tree Road*** experience elevated delays during the peak hours. Elevated movement delays at stop controlled intersections with major roadways is not uncommon.

- The results of the future analyses summarized in **Table 15** indicate that all study intersections within the Town of Paradise Valley operate acceptably except for the intersection of Tatum Boulevard/Lincoln Drive. Within the City of Scottsdale, most study intersections along Scottsdale Road are anticipated to experience elevated delays in one or more movements during the AM and/or PM peak hour. These intersections are discussed along with recommended mitigation strategies below. Final mitigation and operating conditions of intersections within the jurisdiction of the City of Scottsdale will be subject to approval by the City of Scottsdale.

- The signalized intersection of site ***Tatum Boulevard and Lincoln Drive*** continues to experience elevated delays in some of its individual movements. Due to the general high traffic volumes using the intersection, right-of-way (ROW) acquisition would be required to mitigate the delay by installing additional through lanes. Lengthening the westbound right-turn lane is recommended if right-of-way can be acquired.

- All other study intersections within the Town of Paradise Valley are anticipated to operate acceptably. It may be noted that a couple movements at the intersections of Mockingbird Lane/Lincoln Drive and Quail Run Road/Lincoln Drive are anticipated to experience elevated delays during the peak hours; however, elevated delays for a few individual movements at are not uncommon at signalized intersections of major roadways. A southbound right-turn lane at the intersection of ***Mockingbird Lane and Lincoln Drive*** is recommended to reduce southbound delays if right of way can be acquired.

- Without mitigation, the signalized intersection of site ***Scottsdale Road and Indian Bend Road*** continues to experience elevated delays in some of its individual movements. Mitigation could include signal timing adjustments and reconfiguring the eastbound approach to provide two left turn lanes, one through lane and a shared through-right turn lane. The reconfiguration will not require additional pavement width at the intersection and may be completed with the half-street improvements on Indian Bend Road. After the recommended mitigation, the intersection is anticipated to operate at acceptable LOS.

- The improved condition of the intersection of ***Scottsdale Road and 6750 North*** is anticipated to operate acceptably overall. The improvements include constructing the north half of 6750 North, restriping the approach, modifying the Scottsdale Road median and striping to provide a second northbound left turn lane, add a northbound left-turn protected phase with an eastbound right-turn overlap, and appropriate signal phase timing adjustments. While the intersection improvements allow the intersection to operate acceptably overall, the eastbound left turn movement is anticipated to continue to operate with elevated delays during the peak hours. Final mitigation at this intersection will be determined by the City of Scottsdale.

  - The peak hour analyses of the alternative access conditions (only a single northbound left turn lane on Scottsdale Road approaching 6750 North) indicate that both the intersection of Scottsdale Road and Indian Bend Road and the intersection of Scottsdale Road and 6750 North are anticipated to operate with fairly similar LOS compared to the LOS anticipated with the proposed conditions.

- The two way stop controlled intersection of site ***Scottsdale Road and Joshua Tree Road*** continues to experience elevated delays. Poor LOS is not uncommon for stop controlled movements to major roadways. It should be noted that Synchro software does not allow HCM analysis left turn movements with 2-stages so actual delay may be better than analyzed. No mitigation is recommended.

- Without mitigation, the intersection of site ***Scottsdale Road and Lincoln Drive*** continues to experience elevated delays in some of its individual movements. It is recommended to adjust the signal timing and add right-turn overlap periods, where applicable. The mitigation will improve the delay such that the intersection may operate acceptably, although some individual movements are still anticipated to operate with elevated delays during the peak hours. Any phasing adjustments, including the additional of a right-turn overlap phase, will require the approval of the City of Scottsdale.

- The intersection of site ***Scottsdale Road and McDonald Drive*** continues to experience elevated delays in some of its individual movements. Due to the general high traffic volumes using the intersection, ROW acquisition would be required to mitigate the delays; however, this is not recommended as part of this study.

- The peak hour analyses of the alternative access conditions (only a single northbound left turn lane on Scottsdale Road approaching 6750 North) indicate that both the intersection of Scottsdale Road and Indian Bend Road and the intersection of Scottsdale Road and 6750 North are anticipated to operate with fairly similar LOS compared to the LOS anticipated with the proposed conditions. Final mitigation and operating conditions of intersections within the jurisdiction of the City of Scottsdale will be subject to approval by the City of Scottsdale.

- All intersections considered during the event scenario are anticipated to operate acceptably.

<u>Queue Storage Lengths</u>

- Turn lane storage recommendations for the 2033 horizon year are summarized in **Table 20**. The new turn lanes at the intersection of Quail Run Road and Lincoln Drive are recommended to be striped with 150-feet of storage each. The proposed northbound dual left-turn lanes at the intersection of Scottsdale Road and 6750 North are able to be constructed with approximately 115-feet of storage each, which is more storage than the Synchro analysis predicts. The southbound right-turn lane at the intersection is will need to be increased when the intersection is completed; 150 feet of storage is recommended.

- The westbound left-turn lane at the intersection of Mockingbird Lane and Lincoln Drive is projected to require additional storage due to residential traffic volumes. It is recommended that the turn lane be extended to provide 350-feet of storage which will require the removal of a center median. The new south- and westbound right-turn lanes at the intersection are recommended to provide 175 feet and 150 feet of storage, respectively.

- Should only a single northbound left turn lane be provided at the intersection of Scottsdale Road and 6750 North, Synchro's 95th percentile queue projection for the turn lane is 132 feet; in the same scenario, the projected 95th percentile queue for the northbound left turn lane on Scottsdale Road approaching Indian Bend Road is 309 feet. This intersection, in addition to the westbound left-turn queue, will be analyzed further as part of the update to the Palmeraie TIA as requested by the City of Scottsdale with the updated Palmeraie site plan. Final mitigation at these intersections will be determined by the City of Scottsdale.

LIST OF REFERENCES

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TECHNICAL APPENDIX

APPENDIX A:	REVIEW COMMENTS
APPENDIX B:	TRAFFIC COUNTS
APPENDIX C:	EXISTING PEAK HOUR ANALYSIS
APPENDIX D:	COLLISION DATA
APPENDIX E:	TRIP GENERATION
APPENDIX F:	TRIP DISTRIBUTION
APPENDIX G:	BACKGROUND TRAFFIC CALCULATIONS & EXCERPTS FROM BACKGROUND DEVELOPMENTS
APPENDIX H:	2018 PEAK HOUR ANALYSIS
APPENDIX I:	2023 PEAK HOUR ANALYSIS
APPENDIX J:	2028 PEAK HOUR ANALYSIS
APPENDIX K:	2033 PEAK HOUR ANALYSIS
APPENDIX L:	2033 MITIGATED PEAK HOUR ANALYSIS AND QUEUING
APPENDIX M:	ALTERNATIVE ACCESS CONDITIONS PEAK HOUR ANALYSIS
APPENDIX N:	EVENT PEAK HOUR ANALYSES
APPENDIX O:	ADT CALCULATIONS
APPENDIX P:	SIGHT DISTANCE ANALYSIS

APPENDIX A

REVIEW COMMENTS

LEE ENGINEERING

ARIZONA
TEXAS
NEW MEXICO
OKLAHOMA

Registered Professional Engineer (Civil)
CERTIFICATE NO. 38915
PAUL A. GUZEK
Date Signed 9/15/15
ARIZONA, U.S.A.
EXPIRES 3-31-18

September 15, 2015

Mr. James Shano, P.E., C.M.P.
Public Works Director/Town Engineer
Assistant to the Town Manager for Strategic Planning
Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, Arizona 85253-4328

RE: Lee Engineering Review of the Ritz Carlton Resort Traffic Impact Analysis (TIA) by CivTech dated August, 2015 – 2nd submittal

Dear Mr. Shano:

I have reviewed the 2nd submittal to the Ritz Carlton Resort TIA report to determine whether the information presented in it meets the Town of Paradise Valley's guidelines set forth for this project, the Town Council Statement of Direction, and first review comments. In addition, I reviewed any engineering analysis and improvement details that were provided based on Town, City of Scottsdale, or MAG Standard Details.

The 2nd submittal report for the Ritz Carlton site has not be evaluated in great detail, but has been reviewed to a sufficient level to analyze site access conditions and impacts to the Town roadways. The accompanying Ritz Carlton Property Parking Analysis has not been reviewed. The following comments are presented based on my review of the traffic impact report:

General Comments

1. The report has addressed all of the original TIA comments in a satisfactory manner.
2. Throughout the report LOS E or F operation is identified as having "delay". A more appropriate term would be "elevated delay", and are locations where mitigation alternatives should be evaluated to permit acceptable traffic operations. It is noted, however, that many movements along the Scottsdale Road corridor intersections operate with elevated delay during the AM and PM peak hours, even without the added traffic impact of the proposed Ritz Carlton.

Technical Review Comments

1. The total traffic volumes indicated for the "2023 total traffic volume conditions" do not appear to be presented appropriately. The report indicates the total traffic (Figure 23) should be the sum of site traffic (Figure 11) plus background traffic (Figure 15). For example, Intersection #6 in the PM peak hour, the inbound northbound left-turn volume should equal 316 vehicles (153 plus 163) but is shown as 156 vehicles. Traffic volumes for other movements/intersections also appear not to be added properly. It does appear, however, the volumes utilized in the capacity analysis conducted for the 2023 total traffic condition has utilized appropriate turn volumes.
2. The 2023 capacity analysis shows Intersection #6 (Scottsdale Road and 6750 North) to be analyzed in an improved state with dual northbound left-turn lanes (existing condition is a single northbound

left-turn lane) operating with permissive-only left-turn phasing. This is not an operational condition that is typically utilized due to safety concerns, although it is found at a few select locations throughout the Valley. This phasing should be confirmed with the City of Scottsdale to determine if it would be allowed. Even under this scenario, the northbound left-turn movement into the site shows LOS F operation (PM peak hour). The report identifies LOS mitigation for this movement to include permissive plus protected left-turn phasing, which may or may not be permitted by the City of Scottsdale.

3. Mitigation at the intersection of Scottsdale Road and 6750 North identifies converting the single northbound left-turn lane to dual turn lanes and to maximize the left turn storage length (total dual lane storage about 220 feet, currently about 100 feet). As indicated, this will increase storage capacity but will not accommodate the projected storage needed. Under this scenario, vehicles waiting to turn left into the site could extend into the northbound through travel lane creating a safety issue. Analysis should identify the maximum number of vehicles that could be accommodated at this location then re-assign the remaining vehicles to other travel paths to access the site (northbound left-turn movement at Lincoln Drive or Indian Bend Road) to determine potential LOS and storage lane impacts at these locations due to the increased volumes. Secondary impacts may be realized through this re-assignment, such as the extension of the southbound right-turn lane storage area into the site at Quail Run Road or extension of the northbound left-turn lane at Indian Bend Road.
4. Mitigation as stated in the report at the Scottsdale Road / 6750 North intersection will require traffic signal and likely overhead utility improvements. The City of Scottsdale should be consulted for the operational conditions to be permitted at this location.
5. The report states all Paradise Valley study intersections, except for the Tatum Boulevard and Lincoln Drive intersection, are anticipated to operate acceptably in the future. This appears to be a true statement, although some individual movements, such as the southbound approach to Lincoln Drive from Mockingbird Lane, will operate at LOS E/F in the AM and/or PM peak hours, as indicated in the report. To improve the poor operating side street movements, intersection widening would be required which may or may not be feasible or appropriate.
6. Mitigation at the intersection of Scottsdale Road and Lincoln Drive is offered via modification of the green splits to favor the higher volume movements. This may or may not be appropriate mitigation, depending upon impact to vehicle queue length conditions and pedestrian considerations.
7. Any half-street improvements to the eastbound Indian Bend Road approach to Scottsdale Road should include the mitigation identified in the report (Figure 29) as well as considering any secondary improvement for increasing the northbound left-turn storage or capacity, if required, based on additional analysis at the Scottsdale Road/6750 North intersection.
8. Mitigation at the intersection of Mockingbird Lane and Lincoln Drive to install a westbound right-turn lane also appears to require relocation of red light camera equipment and traffic signal equipment that is located at the northeast corner of intersection.
9. The report indicated the site driveway on Lincoln Drive at the Quail Run Road alignment will meet MUTCD traffic signal installation warrants and operate at acceptable service levels. Typically, quarter-mile traffic signals are not favorable to traffic progression. To best accommodate through traffic along Lincoln Drive, the Town should strive to minimize the green time provided to the side street movements and minimize any protected eastbound to northbound left-turn phasing.
10. Table 19 of the report incorrectly identifies the intersection as STOP-controlled and a 150-foot eastbound left-turn lane appropriate (Synchro queue length results were not an output result provided in the appendix). Based on 2033 PM peak hour traffic volumes of 174 vehicles and a 130-second cycle length, a 200-foot turn bay would be more reasonable.

Conclusions

The TIA has identified a number of issues that the Ritz Carlton site is expected to generate, which any development fronting Scottsdale Road would create. The Town should consult with the City of Scottsdale regarding the signal operation/phasing of the Scottsdale/6750 North intersection to best accommodate site traffic demand. Depending upon the signal operation permitted, additional mitigation may be needed at adjacent intersection locations along Scottsdale Road to accommodate increased turn movement volumes. Mitigation identified by the TIA along Indian Bend Road appears to be appropriate to maximize the eastbound approach cross-section to Scottsdale Road. Improvements at the site driveway onto Lincoln Drive appear to be appropriate.

Closure

If a further discussion of these comments/conclusions is needed, I can be reached at (602) 955-7206 or by e-mail at pguzek@lee-eng.com.

Respectfully submitted,

Paul Guzek, PE, PTOE

Lee Engineering, LLC

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Item No.	Reviewer	Location	Code	Review Comment	Response
General Comments					
1.	Paul Guzak-Lee Engineering	General	n/a	The report has addressed all of the original TIA comments in a satisfactory manner.	This comment provides informational to the Town/developer with no indication of a required change in the TIA. A response is not required.
2.	Paul Guzak-Lee Engineering	General	1	Throughout the report LOS E or F operation is identified as having “delay”. A more appropriate term would be “elevated delay”, and are locations where mitigation alternatives should be evaluated to permit acceptable traffic operations. It is noted, however, that many movements along the Scottsdale Road corridor intersections operate with elevated delay during the AM and PM peak hours, even without the added traffic impact of the proposed Ritz Carlton.	Applicable instances of having "delay" changed to having "elevated delay"
Technical Review Comments					
1.	Paul Guzak-Lee Engineering	Figure 23 (p. 53)	1	The total traffic volumes indicated for the “2023 total traffic volume conditions” do not appear to be presented appropriately. The report indicates the total traffic (Figure 23) should be the sum of site traffic (Figure 11) plus background traffic (Figure 15). For example, Intersection #6 in the PM peak hour, the inbound northbound left-turn volume should equal 316 vehicles (153 plus 163) but is shown as 156 vehicles. Traffic volumes for other movements/intersections also appear not to be added properly. It does appear, however, the volumes utilized in the capacity analysis conducted for the 2023 total traffic condition has utilized appropriate turn volumes.	The figures printed and collated within the physical report are not the correct, updated figures. The figures within the electronic version were correct (which was included within the submittal on a CD). The most recent figures are now included.

Reviewed Date: 8/16/2015
CivTech Received Date: 8/17/2015
CivTech Entered Date: 8/19/2015
CivTech Response Date: 9/15/2015

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Item No.	Reviewer	Location	Code	Review Comment	Response
2.	Paul Guzak-Lee Engineering	pp. 59, 63 & 66-67	1	The 2023 capacity analysis shows Intersection #6 (Scottsdale Road and 6750 North) to be analyzed in an improved state with dual northbound left-turn lanes (existing condition is a single northbound left-turn lane) operating with permissive-only left-turn phasing. This is not an operational condition that is typically utilized due to safety concerns, although it is found at a few select locations throughout the Valley. This phasing should be confirmed with the City of Scottsdale to determine if it would be allowed. Even under this scenario, the northbound left-turn movement into the site shows LOS F operation (PM peak hour). The report identifies LOS mitigation for this movement to include permissive plus protected left-turn phasing, which may or may not be permitted by the City of Scottsdale.	The recommendation is based on similar phasing situations, such as at the intersection of Scottsdale Road & McDowell Road (one of the study intersections) which has permitted and protective left turn phasing for the EB (single) & WB (dual) left turn movements. Synchro predicts that the delay and queue length will be greater with only protected phasing; however, CivTech agrees that the City of Scottsdale will determine signal configuration and phasing. The previously analyzed condition evaluates the turn lane to operate at 56 seconds of delay per average vehicle, or LOS E. The phase split was previously assigned by synchro's automatic formulas without adjustment by the analyst, resulting in a 12 second phase (including 4 seconds of yellow and all-red intervals). The analysis now considers a split of 20 seconds. The study now also includes an alternative analysis should the city of Scottsdale not allow the 2nd northbound left-turn lane.

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Item No.	Reviewer	Location	Code	Review Comment	Response
3.	Paul Guzak-Lee Engineering	p. 72	1	Mitigation at the intersection of Scottsdale Road and 6750 North identifies converting the single northbound left-turn lane to dual turn lanes and to maximize the left turn storage length (total dual lane storage about 220 feet, currently about 100 feet). As indicated, this will increase storage capacity but will not accommodate the projected storage needed. Under this scenario, vehicles waiting to turn left into the site could extend into the northbound through travel lane creating a safety issue. Analysis should identify the maximum number of vehicles that could be accommodated at this location then re-assign the remaining vehicles to other travel paths to access the site (northbound left-turn movement at Lincoln Drive or Indian Bend Road) to determine potential LOS and storage lane impacts at these locations due to the increased volumes. Secondary impacts may be realized through this re-assignment, such as the extension of the southbound right-turn lane storage area into the site at Quail Run Road or extension of the northbound left-turn lane at Indian Bend Road.	Similar to the response to the prior comment, this queue reported previously considered a phase duration of 12 seconds, including 4 seconds of yellow and all-red intervals. The analysis now considers a split of 20 seconds resulting in a shorter 95th percentile queue. The study now also includes an alternative analysis should the city of Scottsdale not allow the 2nd northbound left-turn lane. This alternative is provided to give a range of mitigation that could occur on-set since the City of Scottsdale will provide guidance in the future with the submission of the Palmeraie TIA.
4.	Paul Guzak-Lee Engineering	General	1	Mitigation as stated in the report at the Scottsdale Road/6750 North intersection will require a traffic signal and likely overhead utility improvements. The City of Scottsdale should be consulted for the operational conditions to be permitted at this location.	Likely utility improvements are mentioned in the TIA. An alternative evaluation has been provided to satisfy a possible scenario where more cars divert to Indian Bend Road.

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Item No.	Reviewer	Location	Code	Review Comment	Response
5.	Paul Guzak-Lee Engineering	General	n/a	The report states all Paradise Valley study intersections, except for the Tatum Boulevard and Lincoln Drive intersection, are anticipated to operate acceptably in the future. This appears to be a true statement, although some individual movements, such as the southbound approach to Lincoln Drive from Mockingbird Lane, will operate at LOS E/F in the AM and/or PM peak hours, as indicated in the report. To improve the poor operating side street movements, intersection widening would be required which may or may not be feasible or appropriate.	It may be noted that the intersection of Tatum Boulevard and Lincoln Drive is anticipated to operate at LOS E or F during the peak hours even without the proposed site. Also a recommendation to lengthen the eastbound right-turn lane on Lincoln Drive to Tatum Boulevard would require additional right-of-way (ROW). This recommendation should be considered if additional ROW is acquired and is now included as a recommendation in the TIA. A Southbound right-turn lane at the intersection of Mockingbird/Lincoln should also be considered if ROW is available. This has also been added to the TIA.
6.	Paul Guzak-Lee Engineering	pp. 63 & 66	n/a	Mitigation at the intersection of Scottsdale Road and Lincoln Drive is offered via modification of the green splits to favor the higher volume movements. This may or may not be appropriate mitigation, depending upon impact to vehicle queue length conditions and pedestrian considerations.	This intersection will be reviewed again by the City of Scottsdale with the Palmeraie TIMA and mitigation will need to be determined by both the Town of Paradise Valley and the City of Scottsdale. A statement has been added to the TIA.
7.	Paul Guzak-Lee Engineering	Figure 29 (p. 58)	1	Any half-street improvements to the eastbound Indian Bend Road approach to Scottsdale Road should include the mitigation identified in the report (Figure 29) as well as considering any secondary improvement for increasing the northbound left-turn storage or capacity, if required, based on additional analysis at the Scottsdale Road/6750 North intersection.	Agree: The eastbound approach should provide dual left-turn lanes, one (1) through lane and a shared through/right-turn lane. A second westbound through lane may be required if dual northbound turn lanes are required by the City of Scottsdale. Mitigation improvements at the intersection of Indian Bend/Scottsdale Road should meet City of Scottsdale design standards which will be determined during the review of the Palmeraie TIA.

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Item No.	Reviewer	Location	Code	Review Comment	Response
8.	Paul Guzak-Lee Engineering	General	n/a	Mitigation at the intersection of Mockingbird Lane and Lincoln Drive to install a westbound right-turn lane also appears to require relocation of red light camera equipment and traffic signal equipment that is located at the northeast corner of intersection.	We agree. The need for this improvement is stated in the improvement summary.
9.	Paul Guzak-Lee Engineering	General	n/a	The report indicated the site driveway on Lincoln Drive at the Quail Run Road alignment will meet MUTCD traffic signal installation warrants and operate at acceptable service levels. Typically, quarter-mile traffic signals are not favorable to traffic progression. To best accommodate through traffic along Lincoln Drive, the Town should strive to minimize the green time provided to the side street movements and minimize any protected eastbound to northbound left-turn phasing.	Agree - comment regarding progression and the need to retime signals has been added to the Recommendation and Conclusions
10.	Paul Guzak-Lee Engineering	Table 19 (p. 72)	1	Table 19 of the report incorrectly identifies the intersection as STOP-controlled and a 150-foot eastbound left-turn lane appropriate (Synchro queue length results were not an output result provided in the appendix). Based on 2033 PM peak hour traffic volumes of 174 vehicles and a 130-second cycle length, a 200-foot turn bay would be more reasonable.	The cell indicating "1-way stop (NB)" control, which is existing, has been corrected to "Signal" control, which is proposed. The queue recommendations of 150' is greater than the 95th percentile queue reported by Synchro. A reference to Appendix L (previously Appendix N) is now included within the report.
Conclusions					

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CivTech Received Date: 8/17/2015
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CivTech Response Date: 9/15/2015

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Item No.	Reviewer	Location	Code	Review Comment	Response
	Paul Guzak-Lee Engineering	General	n/a	The TIA has identified a number of issues that the Ritz Carlton site is expected to generate, which any development fronting Scottsdale Road would create. The Town should consult with the City of Scottsdale regarding the signal operation/phasing of the Scottsdale/6750 North intersection to best accommodate site traffic demand. Depending upon the signal operation permitted, additional mitigation may be needed at adjacent intersection locations along Scottsdale Road to accommodate increased turn movement volumes. Mitigation identified by the TIA along Indian Bend Road appears to be appropriate to maximize the eastbound approach cross-section to Scottsdale Road. Improvements at the site driveway onto Lincoln Drive appear to be appropriate.	A meeting was held with the City of Scottsdale which results in an alternative scenario now presented in the TIA. The final mitigation along Scottsdale Road will be determined by the City of Scottsdale.

Reviewed Date: 8/16/2015
CivTech Received Date: 8/17/2015
CivTech Entered Date: 8/19/2015
CivTech Response Date: 9/15/2015

REPORT REVIEW

REPORT TITLE: Ritz Carlton Resort

REPORT DATE: August 2015

PREPARED BY: CivTech

CASE #: N/A Paradise Valley

REVIEWED BY: John Bartlett & Phillip Kercher

REVIEW DATE: September 2015

COMMENTS:

1. Include a discussion of the site's current zoning and proposed zoning (if needed).
2. Page 10 – The 6750 North driveway (Collector B) was constructed to provide access to the Spectrum office building and the adjacent parcel to the north. It was not anticipated that it would continue to the west into Paradise Valley.
3. Include a trip generation comparison to a development plan that would be allowed under the current zoning or to an approved site plan.
4. The distribution for hotel trips appears to be too heavily weighted to Tatum Boulevard to the west in comparison to the use of Loop 101 and Scottsdale Road (75% of hotel traffic using Tatum Boulevard).
5. Access to the residential parcel B should be oriented to Indian Bend Road rather than using Collector B through the commercial portion of the site to/from Scottsdale Road.
6. Please submit a conceptual layout for Indian Bend Road improvements adjacent to the site with a transition to the Paradise Valley cross section west of the site. The intersection configuration shows two eastbound through lanes approaching Scottsdale Road but does not show two westbound lanes. Dual northbound left-turns may be needed at the Scottsdale Road and Indian Bend Road intersection; therefore, two westbound receiving lanes along Indian Bend Road should be provided.
7. A southbound right-turn lane should be provided at the intersection of Scottsdale Road and Indian Bend Road.
8. The daily traffic volume capacities used in Figure 32 and Table 18 are significantly higher that the City of Scottsdale uses. Scottsdale Road, a major arterial, has a daily capacity of 48,000 vehicles, not 59,900. McDonald Drive and Indian Bend Road, both minor arterials, have a daily capacity of 34,000 vehicles, not 39,800.

9. There is a lack of storage length available for the anticipated westbound left-turn traffic volume on Indian Bend Road at Scottsdale Road, yet no mitigation is recommended.
10. Table 19 – The storage requirement from Synchro for the northbound left turn at the intersection of Scottsdale Road and Collector B is shown as dual left-turn lanes with a storage length of 284 feet per lane. The study recommends providing dual left-turn lanes with 120 feet of storage. There is only 95 feet of single lane left-turn storage available with the existing median configuration. This situation is not acceptable. Some access management/reconfiguration must be provided to reduce the left turn demand at this quarter-mile intersection.
11. Do not support the modification to provide dual left-turns in the northbound direction at the Collector B intersection on Scottsdale Road by removal of the existing median. The northbound left-turn movements should be encouraged to access the development via Indian Bend Road and Lincoln Drive where dual left-turn lanes exist or could be restriped within the existing roadway improvements.
12. Do not support the location of Access D as shown on the figures or the circular configuration that would result in two connections to Scottsdale Road. The projected volumes at this location do not show a significant benefit for this access to be allowed. The spacing does not meet minimum driveway spacing required by City of Scottsdale policy.
13. Do not support the location of Access C due to the proximity to the Scottsdale Road and Indian Bend Road signalized intersection. Full access should not be provided 300 feet from a major intersection. This traffic should use Collector C to access Indian Bend Road.
14. Volume Figures – Intersection E is shown as a "T" intersection with the side street extending to the west and turning movements to match; however, the site plan and roadway network on each volume figure shows a connection to the east labeled "Palmeraie Access."
15. Volume Figures – Intersection G is shown as a "T" intersection with the side street extending to the west and turning movements to match; however, the site plan shows a connection into residential Parcel B to the west.
16. 1st Submittal Comment Responses – Comment 9 – Identifies that signal timing at Scottsdale Road intersections was based on a 120 second cycle length and coordinated. Contact Steve Ramsey at the City of Scottsdale to acquire current timing plans for the study area intersections within Scottsdale to accurately report before and after operations, storage lengths, etc., at these locations.
17. The recommendations for signal timing adjustments to provide additional time to east-west movements at intersections along Scottsdale Road may not be feasible given the desire to maintain traffic progression along Scottsdale Road.
18. Please describe in the study if any access restrictions are intended to be installed on the internal driveways. For example, will the commercial parcels be able to utilize Quail Run Road to access Lincoln Drive? Will the resort parcel be able to utilize Collector B to access Scottsdale Road?
19. Right-turn overlap phasing should not be assumed at the signalized intersections along Scottsdale Road without approval from City of Scottsdale Traffic Engineering.

20. A site plan that shows the relation of the of the proposed site driveway locations to the existing streets/driveways along Scottsdale Road, Indian Bend Road, and Lincoln Drive should be provided.

General Comments:

1. The City of Scottsdale has not approved the site plan for Palmeraie portion of the development.
2. The City of Scottsdale Transportation Department has not approved any of the proposed improvements to streets and intersections within the city of Scottsdale.
3. The City of Scottsdale Transportation Department has not approved any of the proposed site access locations along City of Scottsdale street frontages.
4. We will be encouraging strong pedestrian connections between the resort and residential portions of the overall development to the retail parcels and to the adjacent signalized intersections on Scottsdale Road to encourage bike and pedestrian travel, especially to the adjacent McCormick-Stillman Railroad Park.

Ritz Carlton - City of Scottsdale Review Comments **CivTech, Inc.** **Review Comments & Responses**

1st Review of 2nd Submittal

City of Scottsdale

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Item No.	Reviewer	Location	Code	Review Comment	Response
1.	John Bartlett & Phillip Kercher	General	3	Include a discussion of the sites' current zoning and proposed zoning (if needed).	Zoning identified in the SUP.
2.	John Bartlett & Phillip Kercher	Page 10	1	The 6750 North driveway (Collector B) was constructed to provide access to the Spectrum office building and the adjacent parcel to the north. It was not anticipated that it would continue to the west into Paradise Valley.	Sentence removed from the study.
3.	John Bartlett & Phillip Kercher	General	3	Include a trip generation comparison to a development plan that would be allowed under the current zoning or to an approved site plan.	Future Palmeraie Study will provide comparison for Scottsdale portion. Trip Generation provided was based on amount shown in the SUP.
4.	John Bartlett & Phillip Kercher	General	3	The distribution for hotel trips appears to be too heavily weighted to Tatum Boulevard to the west in comparison to the use of Loop 101 and Scottsdale Road (75% of hotel traffic using Tatum Boulevard).	The main entrance to the resort is to/from Lincoln Drive which provides a shorter path to the airport. Since the reports is based on AM and PM peak hour trips, and not mid day trips, the distribution was weighted for arrival and departure trips.
5.	John Bartlett & Phillip Kercher	General	3	Access to the residential parcel B should be oriented to Indian Bend Road rather than using collector B through the commercial portion of the site to/from Scottsdale Road.	An access to Indian Bend Road will not be provided however the site plan has been updated to move the internal access along the Quail Run alignment closer to Indian Bend Road.
6.	John Bartlett & Phillip Kercher	General	3	Please submit a conceptual layout for Indian Bend Road improvements adjacent to the site with a transition to the Paradise Valley cross section west of the site. The intersection configuration shows two eastbound through lanes approaching Scottsdale Road but does not show two westbound lanes. Dual northbound left-turns may be needed at the Scottsdale Road and Indian Bend Road intersection; therefore, two westbound receiving lanes along Indian Bend Road should be provided.	A conceptual layout will be provided to the Town for review prior to the City Council approval hearing. The analysis provided within the report for the alternaive access condition does not indicate a need for dual left turn lanes at this location. This intersection will be further analyzed in the future Palmeraie TIS update.
7.	John Bartlett & Phillip Kercher	General	1	A southbound right-turn lane should be provided at the intersection of Scottsdale Road and Indian Bend Road.	The report text and Figure 29 have been updated to include SB the right-turn lane.

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Item No.	Reviewer	Location	Code	Review Comment	Response
8.	John Bartlett & Phillip Kercher	Figure 32 and Table 18	1	The daily traffic volume capacities used in Figure 32 and Table 18 are significantly higher that the City of Scottsdale uses. Scottsdale Road, a major arterial, has a daily capacity of 48,000 vehicles, not 59,900. McDonald Drive and Indian Bend Road, both minor arterials, have a daily capacity of 34,000 vehicles, not 39,800.	The daily traffic considers all left and right turning traffic in addition to the through traffic on this segment of roadway. While the City of Scottsdale thresholds are utilized, they typically consider the average through volumes in the area. The average roadway volumes comply with the City's threshold. To provide a conservative view of likely conditions for Town residents, the minor turning volumes were considered which necessitated a methodology for level of service which provides capacity allowances in these areas. The Florida DOT method considers variables for these movements and was thus utilized for this effort.
9.	John Bartlett & Phillip Kercher	Queue Storage	1	There is a lack of storage length available for the anticipated westbound left-turn traffic volume on Indian Bend Road at Scottsdale Road, yet no mitigation is recommended.	The TIA has been updated to discuss available northbound to westbound left turn capacity as well as discussing the existing condition and likely future condition with the westbound to southbound left turn movement.
10.	John Bartlett & Phillip Kercher	Table 19	1	The storage requirement from Synchro for the northbound left turn at the intersection of Scottsdale Road and Collector B is shown as dual left-turn lanes with a storage length of 284 feet per lane. The study recommends providing dual left-turn lanes with 120 feet of storage. There is only 95 feet of single lane left-turn storage available with the existing median configuration. This situation is not acceptable. Some access management/reconfiguration must be provided to reduce the left-turn demand at this quarter-mile intersection.	The phasing configuration for the intersection was not analyzed correctly in the 2033 horzon year. This has been corrected, along with a slightly longer green time appropriation. These changes reduced the projected queue length and delay to a constructible level. In addition, the TIA considers an alternative analysis for traffic turning northbound onto Indian Bend Road.

1st Review of 2nd Submittal

City of Scottsdale

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Item No.	Reviewer	Location	Code	Review Comment	Response
11.	John Bartlett & Phillip Kercher	General	1	Do not support the modification to provide dual left-turns in the northbound directional the Collector B intersection on Scottsdale Road by removal of the existing median. The northbound left-turn movements should be encouraged to access the development via Indian Bend Road and Lincoln Drive where dual left-turn lanes exist or could be restriped within the existing roadway improvements.	Complete removal of the median is not recommended by the development. The TIA now also considers an alternative analysis for traffic turning northbound onto Indian Bend Road should that be the preferred improvement by the City of Scottsdale. The intersection improvements necessary within the City of Scottsdale will be evaluated again with the Palmeraie TIA.
12.	John Bartlett & Phillip Kercher	General	1	Do not support the location of Access D as shown on the figures or the circular configuration that would result in two connections to Scottsdale Road. The projected volumes at this location do not show a significant benefit for this access to be allowed. The spacing does not meet minimum driveway spacing required by City of Scottsdale Policy.	The final driveway configuration and spacing will be determined by the City of Scottsdale during the Palmeraie site planning process. We anticipate the volume of right turning vehicles remaining consistent with that shown in the report. Therefore other traffic recommendations in the TIA should continue to operate acceptably with the reconfiguration of the driveways.
13.	John Bartlett & Phillip Kercher	General	1	Do not support the location of Access C due to the proximity to the Scottsdale Road and Indian Bend Road signalized intersection. Full access should not be provided 300 feet from the major intersection. This traffic should use Collector C to access Indian Bend Road.	The final driveway configuration and spacing will be determined by the City of Scottsdale during the Palmeraie site planning process. We anticipate the volume of turning vehicles remaining consistent with that shown in the report. Therefore other traffic recommendations in the TIA should continue to operate acceptably with the reconfiguration of the driveways.
14.	John Bartlett & Phillip Kercher	Volume Figures	1	Intersection E is shown as a "T" intersection with the side street extended to the west and turning movements to match; however, the site plan and roadway network on each volume figure shows a connection to the east labeled "Palmeraie Access."	The site plan has been updated and no longer supports the same connections as previously reviewed.
15.	John Bartlett & Phillip Kercher	Volume Figures	1	Intersection G is shown as a "T" intersection with the side street extended to the west and turning movements to match, however, the site plan shows a connection into residential Parcel B to the west.	The site plan has been updated and no longer supports the same connections as previously reviewed.

1st Review of 2nd Submittal

City of Scottsdale

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Item No.	Reviewer	Location	Code	Review Comment	Response
16.	John Bartlett & Phillip Kercher	1st Submittal Comment Responses, Comment 9	1	Identifies that signal timing at Scottsdale Road intersections was based on a 120 second cycle length and coordinated. Contact Steve Ramsey at the City of Scottsdale to acquire current timing plans for the study area intersections within Scottsdale to accurately report before and after operations, storage lengths, etc., at these locations.	Signal timing cards were obtained from Steve Ramsey prior to the first review of the TIA. The timing cards indicate that the intersection is currently operating with a 120 second cycle length which was utilized for the analysis.
17.	John Bartlett & Phillip Kercher	General	1	The recommendations for signal timing adjustments to provide additional time to east-west movements at intersections along Scottsdale Road may not be feasible given the desire to maintain traffic progression along Scottsdale Road.	The report recommends that timing be evaluated when the signal is placed at Quail Run. It is understood that this timing may prioritize Scottsdale Road which could increase delays to Lincoln Drive.
18.	John Bartlett & Phillip Kercher	General	1	Please describe in the study if any access restrictions are intended to be installed on the internal driveways. For example, will the commercial parcels be able to utilize Quail Run Road to access Lincoln Drive? Will the resort parcel be able to utilize Collector B to access Scottsdale Road?	No access restrictions have been planned internal to the development. Through connections have been provided from all parcels. However, the design of the internal street network is circuitous to limit those using the roadway network as a cut through route. It is likely that a majority of the Palmeraie patrons will use the arterial street system in order to avoid the circuitous nature of the Ritz Carlton roadway network.
19.	John Bartlett & Phillip Kercher	General	1	Right-turn overlap phasing should not be assumed at the signalized intersections along Scottsdale Road without approval from City of Scottsdale Traffic Engineering.	The analysis provides, in one or mare case, a right turn overlap as a mitigation option for improved LOS. This improvement would require the support of the City prior to installation and can be reviewed with the Palmeraie TIA.
20.	John Bartlett & Phillip Kercher	General	1	A site plan that shows the relation of the proposed site driveway locations to the existing streets/driveway along Scottsdale Road, Indian Bend Road, and Lincoln Drive should be provided.	An updated site plan for Palmeraie will be provided during the site planning process. The site plan shown in the Ritz Carlton TIA is conceptual and will be further refined through the City review process.
21.	John Bartlett & Phillip Kercher	General	1	The City of Scottsdale has not approved the site plan for Palmeraie portion of the development.	Understood.

1st Review of 2nd Submittal

City of Scottsdale

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Item No.	Reviewer	Location	Code	Review Comment	Response
22.	John Bartlett & Phillip Kercher	General	1	The City of Scottsdale Transportation Department has not approved any of the proposed improvements to streets and intersections within the City of Scottsdale.	Understood. The Palmeraie TIA will be updated during the site plan submittal process for the Palmeraie.
23.	John Bartlett & Phillip Kercher	General	1	The City of Scottsdale Transportation Department has not approved any of the site access locations along City of Scottsdale street frontages.	Understood. The Palmeraie TIA will be updated during the site plan submittal process for the Palmeraie.
24.	John Bartlett & Phillip Kercher	General	1	We will be encouraging strong pedestrian connections between the resort and residential portions of the overall development to the retail parcels and to the adjacent signalized intersections on Scottsdale Road to encourage bike and pedestrian travel, especially to the adjacent McCormick-Stillman Railroad Park.	Agree that a strong pedestrian element should be provided.

ARIZONA
TEXAS
NEW MEXICO
OKLAHOMA

Registered Professional Engineer (Civil)
CERTIFICATE NO. 38915
PAUL A. GUZEK
Date Signed 6-30-15
ARIZONA, U.S.A.
EXPIRES 3-31-18

June 30, 2015

Mr. James Shano, P.E., C.M.P.
Public Works Director/Town Engineer
Assistant to the Town Manager for Strategic Planning
Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, Arizona 85253-4328

RE: Lee Engineering Review of the Ritz Carlton Resort Traffic Impact Analysis by CivTech dated May, 2015 – 1st submittal

Dear Mr. Shano:

I have reviewed the first submittal to the Ritz Carlton Resort report to determine whether the information presented in it meets the Town's guidelines set forth for this project, the Town Council Statement of Direction and review any engineering analysis and improvement details based on Town, City of Scottsdale, or MAG Standard Details. The following comments are presented based on my review of the traffic impact report:

General Comments

1. The report has estimated a total of 15,000 daily and 1,151 PM peak hour trips will be generated by the proposed development. Per Town TIA requirements, these values would place this TIA into a Category 3 analysis reviewing an opening year, 5-, 10-, and 15-year horizon periods. The report has analyzed an opening year, 5-year and 15-year conditions.
2. Typos, pages 22, 27, Figure 4 which improperly identifies Indian Bend Rd, and all figures have misspelled "Church".

Technical Review Comments

1. Page 12, the lane configuration at the intersection of Scottsdale and Indian Bend Road is displayed incorrectly in Figure 2, but analyzed with the correct configuration.
2. Page 13, the text refers to traffic controls being depicted on Figure 3, it should read Figure 2.
3. Page 13, the text refers to traffic volumes being depicted on Figure 4, it should read Figure 3.
4. Page 13, text states segment counts are presented in Table 2. Table 2 does not show these volumes.
5. Page 13, the report text indicate 24-hour volumes were collected from the City of Scottsdale and Town of Paradise Valley websites. No 24-hour volume data has been presented in the report.
6. The traffic volumes presented for the intersection of Lincoln Drive and Quail Run may not be appropriate as the count data presented in the appendix for this location shows reporting errors as some 15-minue periods indicate zero volume.
7. Intersection analysis has been conducted using Traffix software Version 8 per methodologies of the 2000 Highway Capacity Manual (HCM). Results may not be compatible to the more recent HCM 2010 methodologies that have been the standard since 2011.

8. The intersection capacity analysis results summary, shown in Table 3, depict approach and overall LOS results, but does not indicate individual movement LOS. In some cases, individual movements may be operating at LOS E or F which is unacceptable and may require mitigation or improvement considerations.
9. Actual timing data at the analyzed signalized intersections have not been used, instead timing input assumptions have been made. The results will show a comparison of Before/After conditions, but will not provide an indication of how the intersections are actually operating. The results provided in the report likely identify operations that are better than actual field conditions. The results also do not provide a split and phasing diagram making analysis difficult to review, as it appears that the phasing used for the analysis may not be reflective of actual field operation (possible yellow-trap phasing, minimal green time) as certain signalized locations.
10. Page 17, the report indicated no regional improvements are planned within the area. The Town of Paradise Valley indicates a project to install medians on Mockingbird Lane from Lincoln to Northern (FY 2018-29), Lincoln/Invergordon intersection realignment, and Town-wide traffic signal upgrades.
11. Page 18, Figure number identified incorrectly.
12. TIA guidelines state that a roadway segment analysis shall be conducted for the daily and peak hour conditions (Data Collection, Item C). This has not been conducted within the report.
13. TIA guidelines state that a crash analysis shall be conducted for the intersections and roadways within the study area for the latest 36-month period. (Data Collection, Item D). This has not been conducted within the report.
14. Page 20, Trip Generation. The trip estimates for the AM peak of the Resort Hotel hour may be overestimated by as much as 50% (approximately 100 trips). In the overall picture, this may or may not be significant.
15. The internal capture rate for the AM and PM peak hours have not been presented in the Appendix, only the daily. The daily internal capture rate appears to have been calculated properly.
16. The application of the pass-by trips were not properly applied. The pass-by component included the internally captured trips, which underestimates the amount of "new" trips (by about 80 trips). The 80 trips have been considered within the pass-by trip component. In the overall picture, this may or may not be significant.
17. Page 22, Table 6. The 2020 percentage to/from the west should be 28% not 18% as indicated.
18. Table 6 indicates different North percentage than shown in Figure 5, explain.
19. Figures 7 & 8. In the PM peak hour, the In/Out volumes appear to be slightly lower than identified in Table 5.
20. It appears all peak hour traffic volumes presented for the background and total volume figure sheets are correct.
21. The intersection capacity analysis is conducted inappropriately, similar to existing conditions, regarding signal settings and phasing. The analysis has also optimized each intersection individually and does not take into account any progression that may be in-place for Scottsdale Road or other locations.
22. Page 35. No ADT's have been supplied or analyzed, the lane configurations are based on the capacity analysis output.
23. Figure 15. The results indicate a traffic signal is recommended for the intersection of Lincoln and Quail Run. Based on traffic volumes this location will not meet MUTCD warrants for a traffic signal. Please explain/justify recommendation. If a traffic signal is warranted, how will the signal function in regards to timing, phasing, and coordination along the existing Lincoln Drive corridor?
24. The Town's TIA guidelines provide Deceleration Lane Criteria for right turn lanes. The use of AASHTO guidelines to determine the need for right turn lanes on adjacent streets may not be applicable.

25. Page 38, Table 8. Recommended storage lengths for right and left turn lanes at many locations may not be possible as they will impact the existing turn lane design of other locations. These locations should be noted.
26. The recommended storage length listed for the northbound left turn movement into the site at Intersection 2 is 350 feet, however, Table 8 indicates 475 feet is required by AASHTO. In either case, only 95 feet of storage exists at this location. Modification of this turn lane would impact the existing turn bay immediately to the south for vehicles entering in a residential development on the east side of Scottsdale Road. With this location identified as the main access into the Ritz Carlton Development, how does the developer intend to accommodate the projected 444 PM peak hour vehicles turning left at this location without vehicles queuing into the northbound through travel lanes?
27. Page 38, Table 8. Intersection 10 identifies a 1-way STOP condition, whereas the intersection would be minor-street stop control for both the northbound and southbound approached (2-way). Figure 15 recommends the intersection to be signal controlled. The analysis for this intersection requires revision.
28. The report does not address Lincoln Drive modifications and impacts needed to accommodate site access at the Quail Run alignment.
29. Page 40, Recommendations. The City of Scottsdale has revised their Functional Classification System, however Scottsdale is classified as a Major Arterial - Suburban. The Town of Paradise Valley identifies Lincoln Road as an Urban Major Arterial.
30. Page 41, Recommendations. The report identifies that there will be "event" traffic associated with the resort. This traffic has not been estimated in the trip generation analysis. If the site is to host events on a recurring basis, this volume should be added to trip generation estimate and evaluated.
31. As outlined in the Statement of Direction from the Town, the report has not appropriately addressed what impacts the site's Lincoln Avenue access will have (loss of landscape median island to accommodate left turn movements, needed relocation of electrical switching cabinet to accommodate a right turn deceleration lane, impacts a potential traffic signal may have to traffic flow along Lincoln Avenue).
32. As outlined in the Statement of Direction from the Town, the report has not conducted traffic analysis along Lincoln Drive from Scottsdale Road to Tatum Boulevard.
33. As outlined in the Statement of Direction from the Town, the report has not addressed on-site vehicle circulation.
34. It is anticipated that the recommendations will change based on the above comments and revisions to the report.

Conclusions

There are some serious traffic related issues the TIA has not addressed or has identified as being acceptable. The most major of these items is how the developer will accommodate the projected 444 PM peak hour vehicles turning left into the site at Intersection 2 (Comment #26), the intersection capacity analyses that have used assumed timings and not actual timing and coordination data along Scottsdale Road (Comment #9 and #21), the traffic control at the site's proposed access onto Lincoln Drive (Comment #23, #28 and #30). In addition, the report has not appropriately address the Town's concerns identified in the Statement of Direction pertaining to impacts the site access will have to Lincoln Drive, a traffic analysis of Lincoln Drive from Scottsdale to Tatum, and on-site vehicle circulation (Comments #31, #32, and #33).

Closure

If a further discussion of these comments/conclusions is needed, I can be reached at (602) 955-7206 or by e-mail at pguzek@lee-eng.com.

Respectfully submitted,

Paul Guzek, PE, PTOE

Lee Engineering, LLC

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Item No.	Reviewer	Location	Code	Review Comment	Response
1.	Paul Guzak-Lee Engineering	General Comments	1	The report has estimated a total of 15,000 daily and 1,151 PM Peak hour trips will be generated by the proposed development. Per Town TIA requirements, these values would place this TIA into a Category 3 analysis reviewing an opening year, 5-, 10-, and 15-year horizon periods. The report has analyzed an opening year, 5-year and 15-year conditions.	The report has been updated to include existing, opening year, opening+5, opening+10 and opening+15 study horizon years, per the Town's TIA requirements.
2.	Paul Guzak-Lee Engineering	General Comments	1	Typos pages 22, 27, Figure 4 which improperly identifies Indian Bend Road, and all figures have misspelled "church"	Report text and Figures have all been spell checked and updated with the correct spelling and identifications.
1.	Paul Guzak-Lee Engineering	Page 12	1	The lane configuration at the intersection of Scottsdale and Indian Bend Road is displayed incorrectly in Figure 2, but analyzed with the correct configuration.	Figure 2 has been updated to match text within the report.
2.	Paul Guzak-Lee Engineering	Page 13	1	The text refers to traffic controls being depicted on Figure 3, it should read Figure 2.	Text has been revised to reference Figure 2.
3.	Paul Guzak-Lee Engineering	Page 13	1	The text refers to traffic volumes being depicted on Figure 4, it should read Figure 3.	Text has been revised to reference Figure 3.
4.	Paul Guzak-Lee Engineering	Page 13	1	Text states segment counts are presented in Table 2. Table 2 does not show these volumes.	Table 2 revised to include existing segment ADT volumes.

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CivTech Received Date: 8/4/2015
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Item No.	Reviewer	Location	Code	Review Comment	Response
5.	Paul Guzak-Lee Engineering	Page 13	1	The report text indicate 24-hour volumes were collected from the City of Scottsdale and Town of Paradise Valley Websites. No 24 hour volume data has been reported in the report.	24-hour count data used/referenced within Table 2 has been included in Appendix B.
6.	Paul Guzak-Lee Engineering		2	The traffic volumes presented for the intersection of Lincoln Drive and Quail Run may not be appropriate as the count data presented in the appendix for this location shows reporting errors as some 15-minute periods indicate zero volume.	All Intersection Capacity Analyses have been revised using Synchro 9 under the HCM 2010 methodologies which do not report any errors.
7.	Paul Guzak-Lee Engineering		2	Intersection analysis has been conducted using Traffix software Version 8 per methodologies of the 2000 Highway Capacity Manual (HCM). Results may not be compatible to the more recent HCM 2010 methodologies that have been the standard since 2011	All Intersection Capacity Analyses have been updated with Synchro 9 which uses the HCM 2010 methodologies.
8.	Paul Guzak-Lee Engineering		1	The intersection capacity analysis results summary, shown in Table 3, depict approach and overall LOS results, but does not indicate individual movement LOS. In some cases, individual movements may be operating at LOS E or F which is unacceptable and may require mitigation or improvement considerations.	All Levels of service Tables have been updated to include individual movement LOS for unsignalized intersections and approach/overall LOS at signalized intersections. Should an individual movement at any of the signalized intersections be less than acceptable, it has been mentioned within the text of the report along with any appropriate mitigation that can be implemented. Levels of service by movement for all intersections can be found within the Appendix, under Capacity Analysis.

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Item No.	Reviewer	Location	Code	Review Comment	Response
9.	Paul Guzak-Lee Engineering		2	Actual timing data at the analyzed signalized intersections have not been used, instead timing input assumptions have been made. The results will show a comparison of Before/After conditions, but will not provide an indication of how the intersections are actually operating. The results provided in the report likely identify operations that are better than actual field conditions. The results also do not provide a split and phasing diagram making analysis difficult to review, as it appears that the phasing used for the analysis may not be reflective of actual field operation (possible yellow-trap phasing, minimal green time) as certain signalized locations.	Intersection Capacity Analysis for each study horizon year has been updated in Synchro 9 and includes recent signal timing received from the Town of PV at all signals along Lincoln Drive within the Towns limits. Signal timing along Scottsdale Road was assumed at 120-second Cycle lengths and coordinated. Signal Phasing diagrams have been included within the Appendix for each study horizon year.
10.	Paul Guzak-Lee Engineering	Page 17	1	the report indicated no regional improvements are planned within this area. The town of Paradise Valley indicates a project to install medians on Mockingbird Lane from Lincoln to Northern (FY 2018-29) Lincoln/Invergordon intersection realignment, and Town-wide traffic signal upgrades.	The report has been updated to include the regional improvement along Mockingbird Lane. We understand that the traffic signal upgrades were recently implemented.
11.	Paul Guzak-Lee Engineering	Page 18	1	Figure number identified incorrectly	Figure numbers have all been updated within the text of the report.

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Item No.	Reviewer	Location	Code	Review Comment	Response
12.	Paul Guzak-Lee Engineering		1	TIA guidelines state that a roadway segment analysis shall be conducted for the daily and peak our conditions (Data Collection, item C) This has not been conducted within the report.	A segment analysis section has been added within the report and can be found before the queue storage section of the report.
13.	Paul Guzak-Lee Engineering		1	TIA guidelines state that a crash analysis shall be conducted for the intersections and roadways within the study area for the latest 36-month period. (Data Collection, item D). This has not been conducted within the report.	A crash analysis section has been added within the report and can be found within the Existing Conditions write up of the report.
14.	Paul Guzak-Lee Engineering	Page 20	1	Trip Generation. The trip estimates for the AM peak of the Resort Hotel hour may be overestimated by as much as 50% (approximately 100 trips). In the overall picture, this may or may not be significant.	Trip Generation has been revised.
15.	Paul Guzak-Lee Engineering	Page 29	3	The internal capture rate for the AM and PM Peak hours have not been presented in the Appendix, only the daily. The daily internal capture rate appears to have been calculated properly.	Text has been modified. The internal capture worksheet for daily conditions is now included in the appendix. From the calculation, a universal 20% internal capture rate which was calculated for the overall Daily was also applied to the peak (AM/PM) hours as well.
16.	Paul Guzak-Lee Engineering		2	The application of the pass-by trips were not properly applied. The pass-by component included the internally captured trips, which underestimates the amount of "new" trips (by about 80 trips). The 80 trips have been considered within the pass-by trip component. In the overall picture, this may or may not be significant.	To remain conservative Pass-By trips were removed within the report/text and within the analysis.

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Item No.	Reviewer	Location	Code	Review Comment	Response
17.	Paul Guzak-Lee Engineering	Page 22, Table 6	1	The 2020 percentage to/from the west should be 28% not 18% as indicated.	Table 6, has been revised.
18.	Paul Guzak-Lee Engineering	Table 6	1	Indicates different North percentage than shown in figure 5, explain.	Table 6, has been revised to match Figure 5. This was a typo, therefore no further explanation required.
19.	Paul Guzak-Lee Engineering	Figures 7 and 8	1	In the PM peak hour, the In/Out volumes appear to be slightly lower than identified in Table 5.	Trip Generation has been revised and site plan updated. All volumes on Figures 7 and 8 have been verified with Table 5 and updated within the analysis. The traffic distribution software rounds trips when the distribution does not result in a whole number. This small difference is due to rounding.
20.	Paul Guzak-Lee Engineering		3	It appears all peak hour traffic volumes presented for the background and total volume figure sheets are correct.	No comment required.
21.	Paul Guzak-Lee Engineering		2	The intersection capacity analysis is conducted inappropriately, similar to existing conditions, regarding signal settings and phasing. The analysis has also optimized each intersection individually and does not take into account any progression that may be in-place for Scottsdale Road or other locations.	All Intersection Capacity Analyses have been updated with Synchro 9 which uses the HCM 2010 methodologies. Each signalized intersection along the Lincoln Drive and Scottsdale Road corridor have signal offsets optimized using the intersection of Scottsdale Rd. & Lincoln Dr. as the master signal.
22.	Paul Guzak-Lee Engineering	Page 35	1	No ADT's have been supplied or analyzed, the lane configurations are based on the capacity analysis output.	Please refer to comment responses 4 and 5.

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Item No.	Reviewer	Location	Code	Review Comment	Response
23.	Paul Guzak-Lee Engineering	Figure 15	1	The results indicate a traffic signal is recommended for the intersection of Lincoln and Quail Run. Based on traffic volumes this location will not meet MUTCD warrants for a traffic signal. Please explain/justify recommendation. If a traffic signal is warranted, how will the signal function in regards to timing, phasing, and coordination along the existing Lincoln Drive corridor?	The updated analysis using the new site plan results in meeting the MUTCD peak hour signal warrant. It is recommended, as analyzed, to have a cycle length of 130 seconds to match the cycle length of the signal at Mockingbird/Lincon for optimal signal progression. Protected & permitted phasing is recommended for the westbound left turn movement.
24.	Paul Guzak-Lee Engineering		1	The Towns TIA guidelines provide Deceleration Lane Criteria for right-turn lanes. The use of AASHTO guidelines to determine the need for right-turn lanes on adjacent streets may not be applicable.	Deceleration lane criteria for right-turn lanes has been updated per the Town's TIA guidelines. Synchro reported queue lengths are now used instead of AASHTO methodology.
25.	Paul Guzak-Lee Engineering	Page 38, Table 8	1	Recommended storage lengths for right and left turn lanes at many locations may not be possible as they will impact the existing turn lane design for other locations. These locations should be noted.	Table 8 has been revised and foot noted.

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Item No.	Reviewer	Location	Code	Review Comment	Response
26.	Paul Guzak-Lee Engineering		1	The recommended storage length listed for the northbound left turn movement into the site intersection 2 is 350 feet, however, Table 8 indicates 475 feet is required by AASHTO. In either case, only 95 feet of storage exists at this location. Modification of this turn lane would impact the existing turn bay immediately to the south for vehicles entering in a residential development on the east side of Scottsdale Road. With this location identified as the main access into the Ritz Carlton Development, how does the developer intend to accommodate the projected 444 PM Peak Hour vehicles turning left at this location without vehicles queuing into the northbound through travel lanes?	All calculated/recommended queue storage lengths within Table 8 have been updated per the Synchro 9 analysis which accounts for signal timing/offsets. Intersection 2 is being proposed with dual left-turn lanes to help accommodate the queue. All queue lengths have been revised to make sure they are not recommending longer queues then what can feasibly be constructed within the ROW.
27.	Paul Guzak-Lee Engineering	Page 38, Table 8	1	Intersection 10 identifies a 1-way stop condition, whereas the intersection would be minor- street stop control for both the Northbound and Southbound approached (2-way). Figure 15 recommends the intersection to be signal controlled. The analysis for this intersection requires revision.	Analysis has been revised.
28.	Paul Guzak-Lee Engineering		1	The report does not address Lincoln Drive modifications and impacts needed to accommodate site access at the Quail Run alignment.	The TIA now discusses this .

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Item No.	Reviewer	Location	Code	Review Comment	Response
29.	Paul Guzak-Lee Engineering	Page 40, Recommendations	1	The City of Scottsdale has revised their Functional Classification System, however Scottsdale is classified as a Major Arterial-Suburban. The Town of Paradise Valley identifies Lincoln Road as an Urban Major Arterial.	Text has been updated to include both the City of Scottsdale and Town of Paradise Valley classifications for Lincoln Drive and Scottsdale Road.
30.	Paul Guzak-Lee Engineering	Page 41 recommendations	1	The report identifies that there will be "event" traffic associated with the resort. This traffic has not been estimated in the trip generation analysis. If the site is to host events on a recurring basis, this volume should be added to trip generation estimate and evaluated.	An Event Section/Analysis has been added within the report and can be found directly after the 2033 intersection capacity analysis within the report. Detailed analysis worksheets can be found within Appendix L.
31.	Paul Guzak-Lee Engineering		1	As outlined in the Statement of Direction from the Town, the report has not appropriately addressed what impacts the site's Lincoln Avenue access will have (loss of landscape median island to accommodate a right turn deceleration lane, impacts a potential traffic signal may have to traffic flow along Lincoln Avenue)	TIA now discusses these topics.
32.	Paul Guzak-Lee Engineering		1	As outlined in the Statement of Direction from the Town, the report has not conducted traffic analysis along Lincoln Drive from Scottsdale Road to Tatum Blvd.	Analysis at the intersection of Lincoln Dr. and Tatum Blvd. has ben added per the Statement of Direction from the Town.

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Item No.	Reviewer	Location	Code	Review Comment	Response
33.	Paul Guzak-Lee Engineering		1	As outlined in the Statement of Direction from the Town, the report has not addressed on-site vehicle circulation	Circulation discussion has been included within the site access section of the report. Also several internal intersections of concern have been included within the analysis/text of this report.
34.	Paul Guzak-Lee Engineering		1	It is anticipated that the recommendations will change based on the above comments and revisions to the report.	The report has been revised as described in these responses.
35.	Paul Guzak-Lee Engineering	Conclusions	1	There are some serious traffic related issues the TIA has not addressed or has identified as being acceptable. The most major of these items is how the developer will accommodate the projected 444 PM peak hour vehicles turning left into the site at intersection 2 (comment #26), the intersection capacity analyses that have used assumed timings and not actual timing and coordination data along Scottsdale Road (Comment #9 and 21), the traffic control at the sites proposed access onto Lincoln Drive (comments #23,#28 and #30) In addition, the report has not appropriately address the Towns concern identified in the Statement of Direction pertaining to impacts the site access will have to Lincoln Drive, a traffic analysis of Lincoln Drive from Scottsdale to Tatum, and on-site vehicle circulation (Comments #31, #32 and #33)	The report has been revised as described in these responses.

Reviewed Date: 6/20/2015
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APPENDIX B

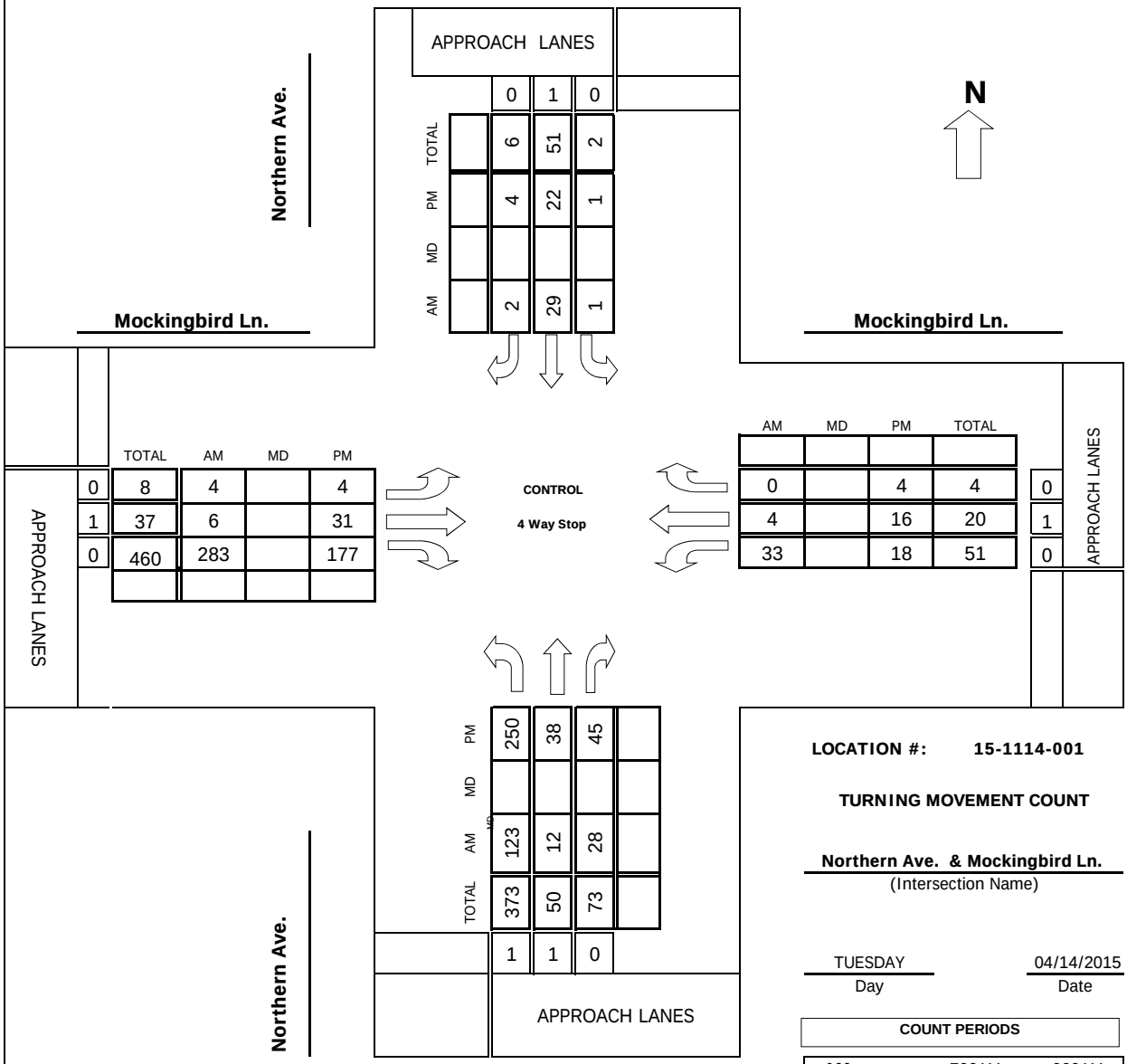
TRAFFIC COUNTS

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1114-001

TMC SUMMARY OF Northern Ave. & Mockingbird Ln.



LOCATION #: 15-1114-001

TURNING MOVEMENT COUNT

Northern Ave. & Mockingbird Ln.
(Intersection Name)

TUESDAY — Day
04/14/2015 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR: 745 AM

NOON PEAK HOUR:

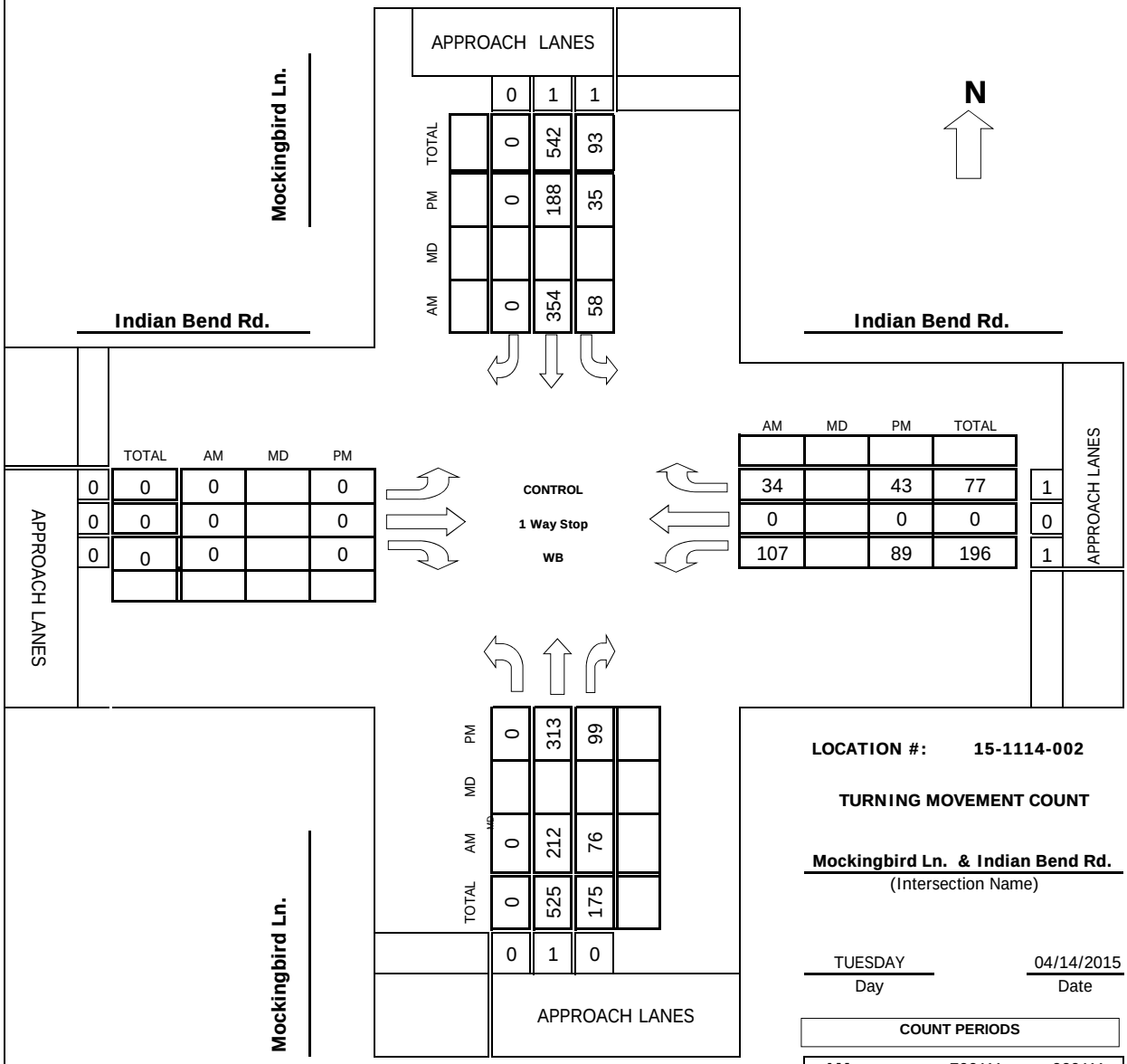
PM PEAK HOUR: 415 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1114-002

TMC SUMMARY OF Mockingbird Ln. & Indian Bend Rd.



LOCATION #: 15-1114-002

TURNING MOVEMENT COUNT

Mockingbird Ln. & Indian Bend Rd.
(Intersection Name)

TUESDAY — Day
04/14/2015 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR: 745 AM

NOON PEAK HOUR:

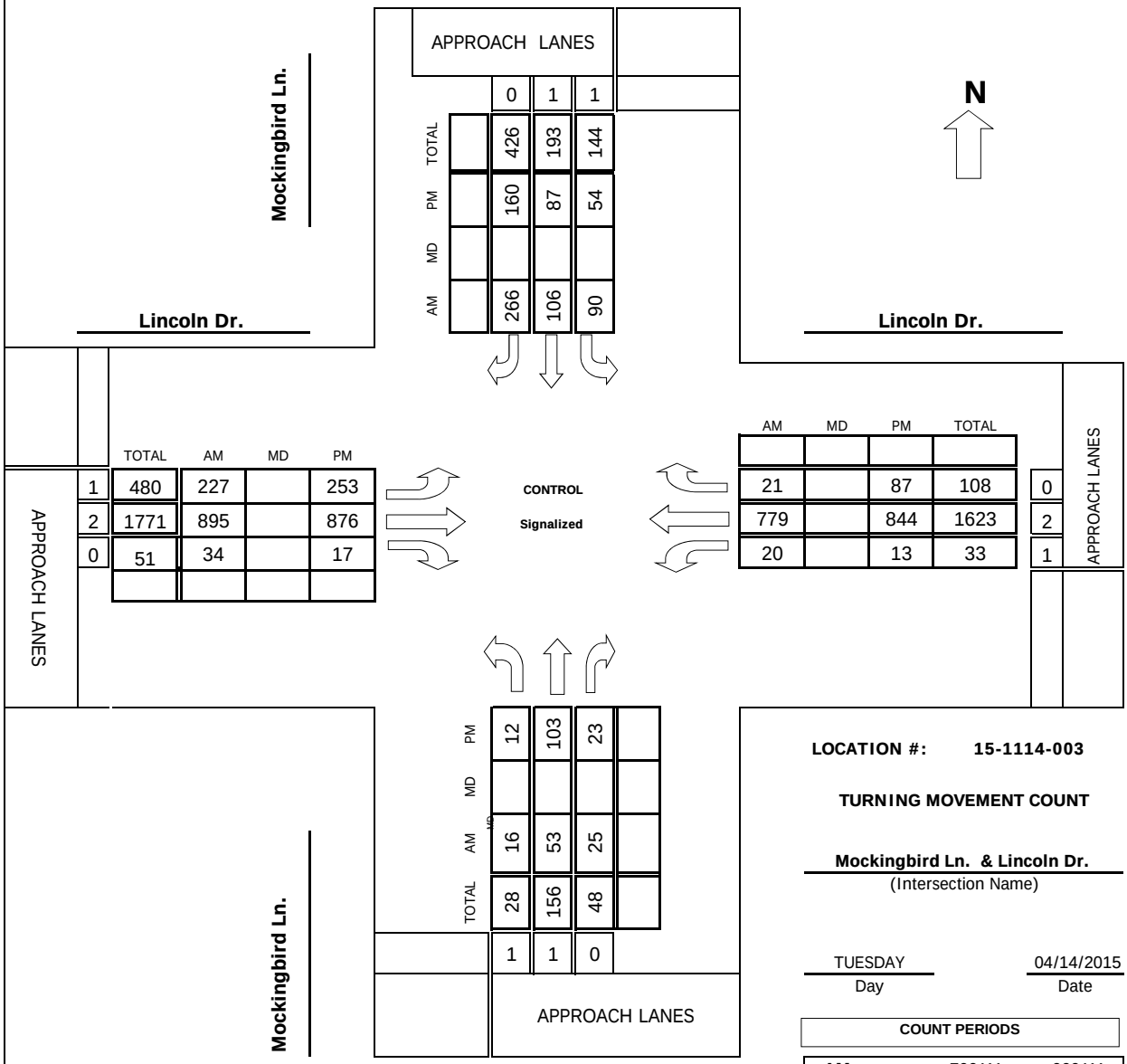
PM PEAK HOUR: 445 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1114-003

TMC SUMMARY OF Mockingbird Ln. & Lincoln Dr.



LOCATION #: 15-1114-003

TURNING MOVEMENT COUNT

Mockingbird Ln. & Lincoln Dr.
(Intersection Name)

TUESDAY — Day
04/14/2015 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR: 730 AM

NOON PEAK HOUR:

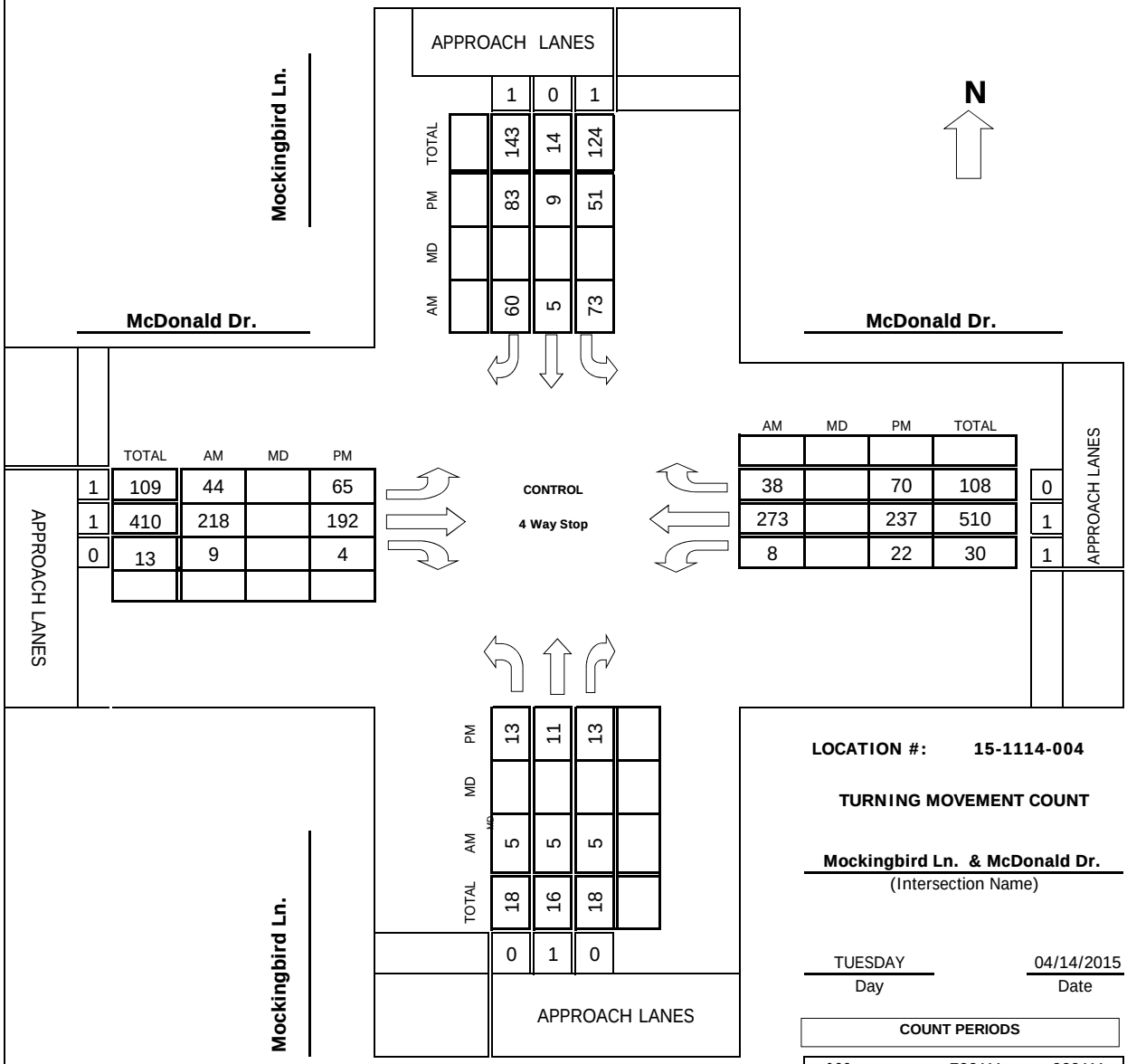
PM PEAK HOUR: 430 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1114-004

TMC SUMMARY OF Mockingbird Ln. & McDonald Dr.



LOCATION #: 15-1114-004

TURNING MOVEMENT COUNT

Mockingbird Ln. & McDonald Dr.
(Intersection Name)

TUESDAY — Day
04/14/2015 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR: 800 AM

NOON PEAK HOUR:

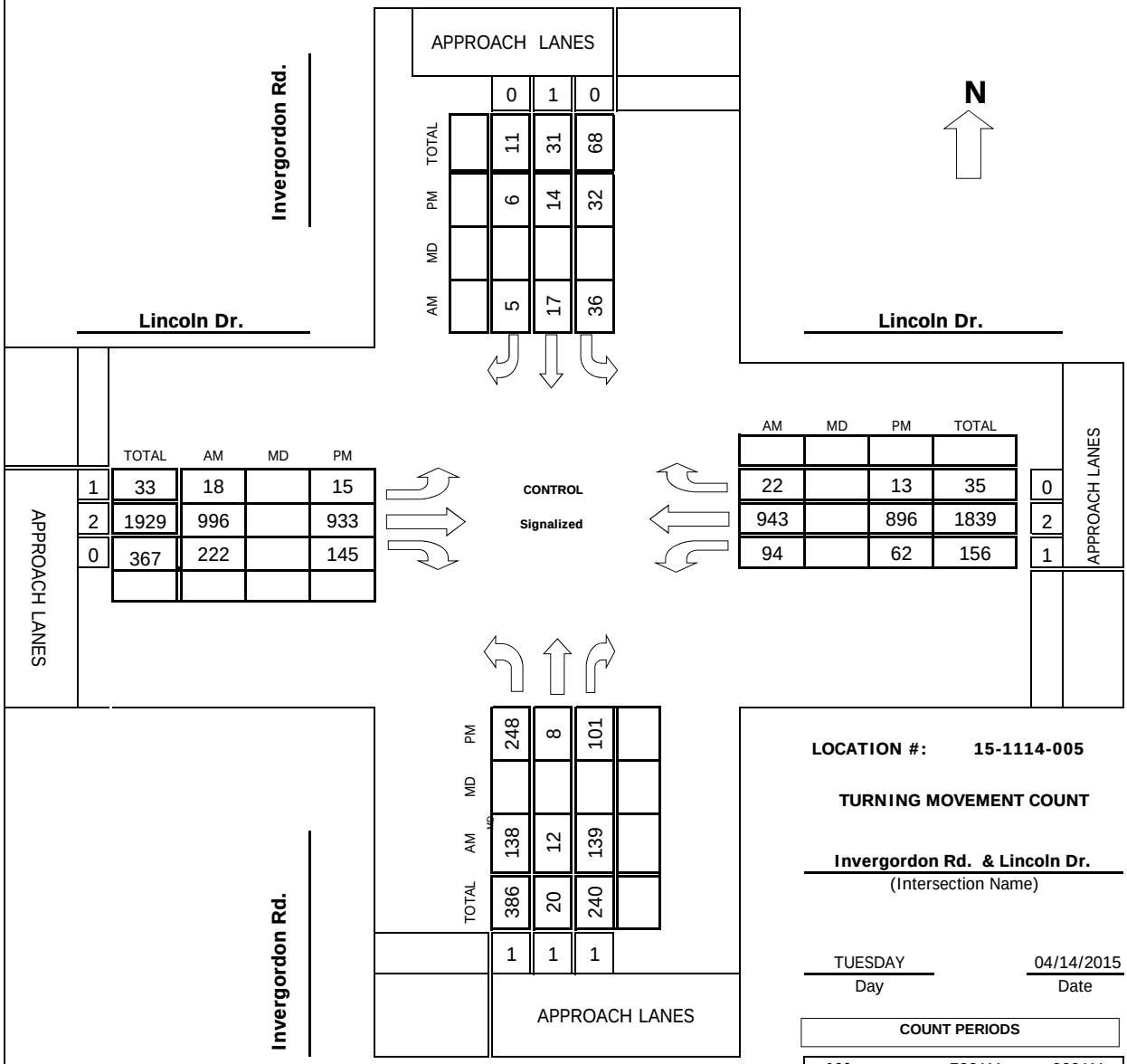
PM PEAK HOUR: 500 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1114-005

TMC SUMMARY OF Invergordon Rd. & Lincoln Dr.



LOCATION #: 15-1114-005

TURNING MOVEMENT COUNT

Invergordon Rd. & Lincoln Dr.
(Intersection Name)

TUESDAY — Day
04/14/2015 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR: 730 AM

NOON PEAK HOUR:

PM PEAK HOUR: 415 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1114-006

TMC SUMMARY OF Scottsdale Rd. & Indian Bend Rd.

APPROACH LANES

	0	3	1
TOTAL	58	2905	323
PM	37	1418	175
MD			
AM	21	1487	148

Scottsdale Rd.

Indian Bend Rd.

N

Indian Bend Rd.

APPROACH LANES

	TOTAL	AM	MD	PM
1	72	26		46
0	168	76		92
1	28	17		11

CONTROL

Signalized

AM	MD	PM	TOTAL	
142		127	269	1
117		130	247	1
541		411	952	2

APPROACH LANES

PM	35	1714	465
MD			
AM	12	1189	369
TOTAL	47	2903	834
	1	3	1

Scottsdale Rd.

APPROACH LANES

LOCATION #: 15-1114-006

TURNING MOVEMENT COUNT

Scottsdale Rd. & Indian Bend Rd.
(Intersection Name)

TUESDAY — Day

04/14/2015 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR: 730 AM

NOON PEAK HOUR:

PM PEAK HOUR: 445 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1114-007

TMC SUMMARY OF Scottsdale Rd. & Lincoln Dr.

APPROACH LANES

		1	3	1
TOTAL		968	3023	81
PM		398	1439	54
MD				
AM		570	1584	27

Scottsdale Rd.

Lincoln Dr.

N

Lincoln Dr.

APPROACH LANES

	TOTAL	AM	MD	PM
2	1090	551		539
1	89	44		45
1	726	368		358

CONTROL

Signalized

AM	MD	PM	TOTAL	
39		52	91	0
32		54	86	2
24		41	65	1

APPROACH LANES

PM	328	1523	36	
MD				
AM	266	1082	28	
TOTAL	594	2605	64	
	2	3	0	

Scottsdale Rd.

APPROACH LANES

LOCATION #: 15-1114-007

TURNING MOVEMENT COUNT

Scottsdale Rd. & Lincoln Dr.
(Intersection Name)

TUESDAY — Day

04/14/2015 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 445 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1114-008

TMC SUMMARY OF Scottsdale Rd. & McDonald Dr.

APPROACH LANES

	1	3	2
TOTAL	158	3173	461
PM	90	1504	292
MD			
AM	68	1669	169

Scottsdale Rd.

McDonald Dr.

N

McDonald Dr.

APPROACH LANES

	TOTAL	AM	MD	PM
1	195	118		77
2	430	227		203
0	69	34		35

CONTROL

Signalized

	AM	MD	PM	TOTAL
1	286		183	469
2	332		205	537
2	289		227	516

APPROACH LANES

	1	3	1
PM	35	1694	232
MD			
AM	45	1010	137
TOTAL	80	2704	369

Scottsdale Rd.

APPROACH LANES

LOCATION #: 15-1114-008

TURNING MOVEMENT COUNT

Scottsdale Rd. & McDonald Dr.
(Intersection Name)

TUESDAY — Day

04/14/2015 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR: 745 AM

NOON PEAK HOUR:

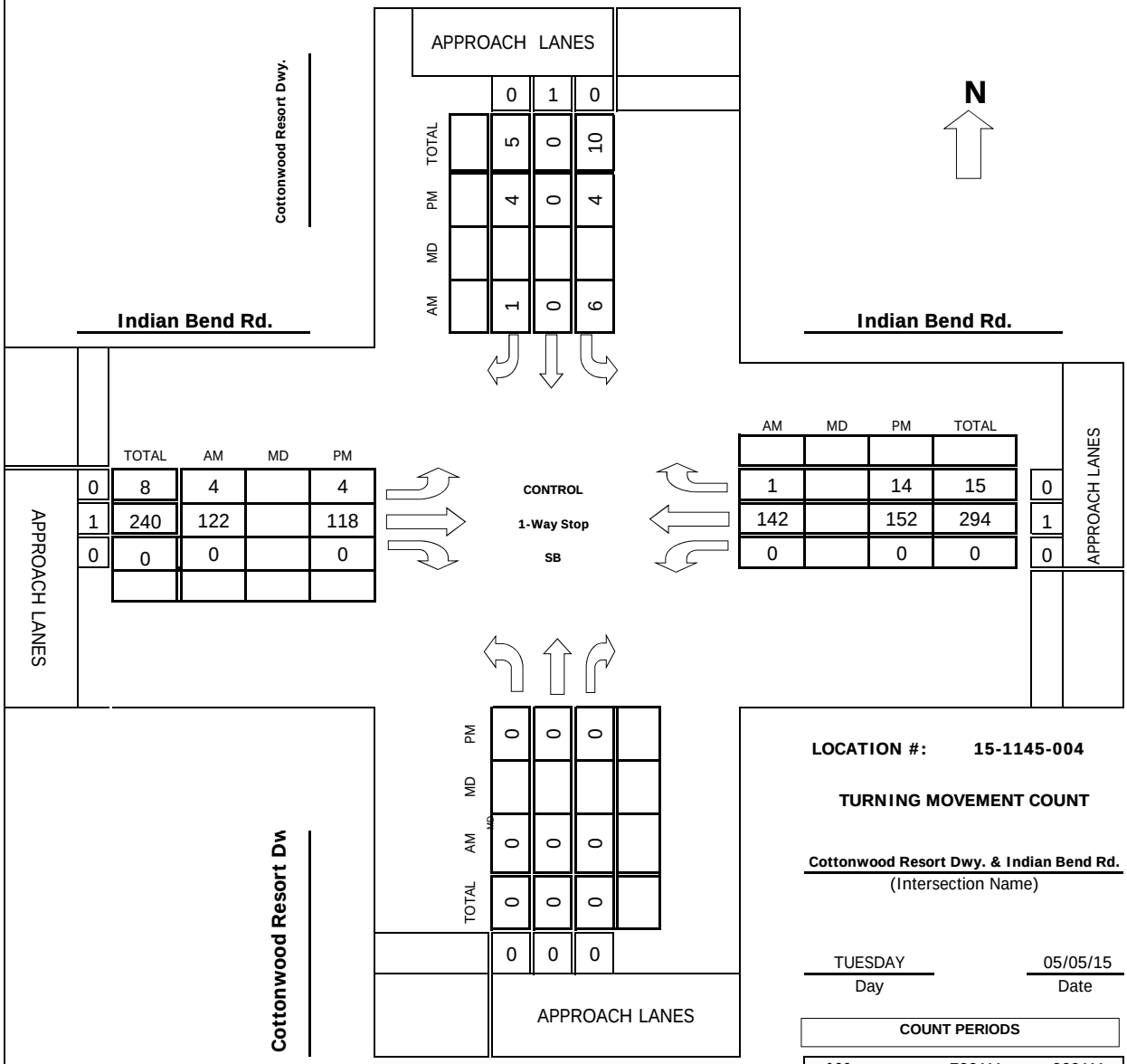
PM PEAK HOUR: 445 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1145-004

TMC SUMMARY OF Cottonwood Resort Dwy. & Indian Bend Rd.



LOCATION #: 15-1145-004

TURNING MOVEMENT COUNT

Cottonwood Resort Dwy. & Indian Bend Rd.
(Intersection Name)

TUESDAY — Day
05/05/15 — Date

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

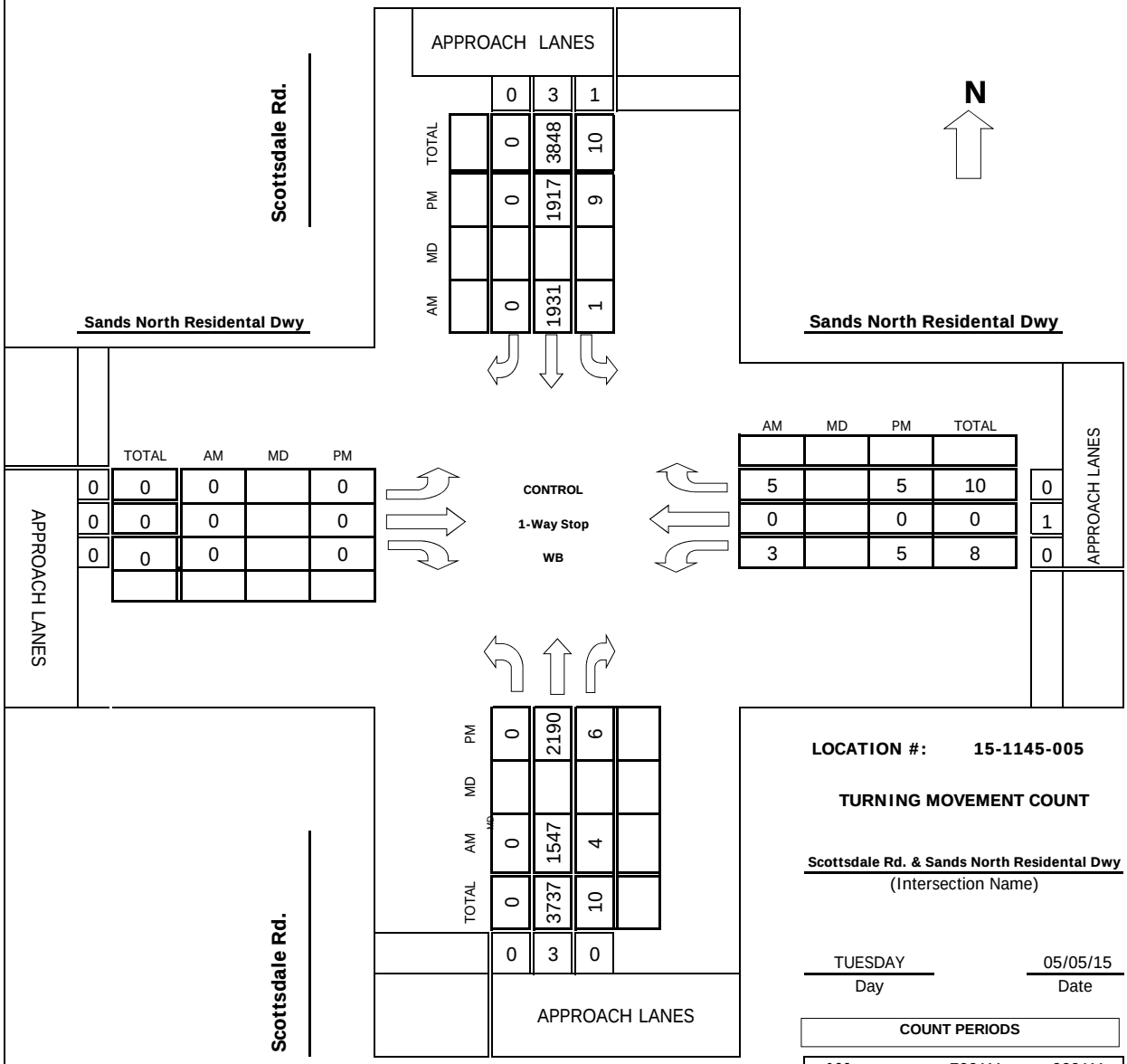
AM PEAK HOUR	745 AM
NOON PEAK HOUR	
PM PEAK HOUR	500 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1145-005

TMC SUMMARY OF Scottsdale Rd. & Sands North Residental Dwy



LOCATION #: 15-1145-005

TURNING MOVEMENT COUNT

Scottsdale Rd. & Sands North Residental Dwy
(Intersection Name)

TUESDAY — Day
05/05/15 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR: 730 AM

NOON PEAK HOUR:

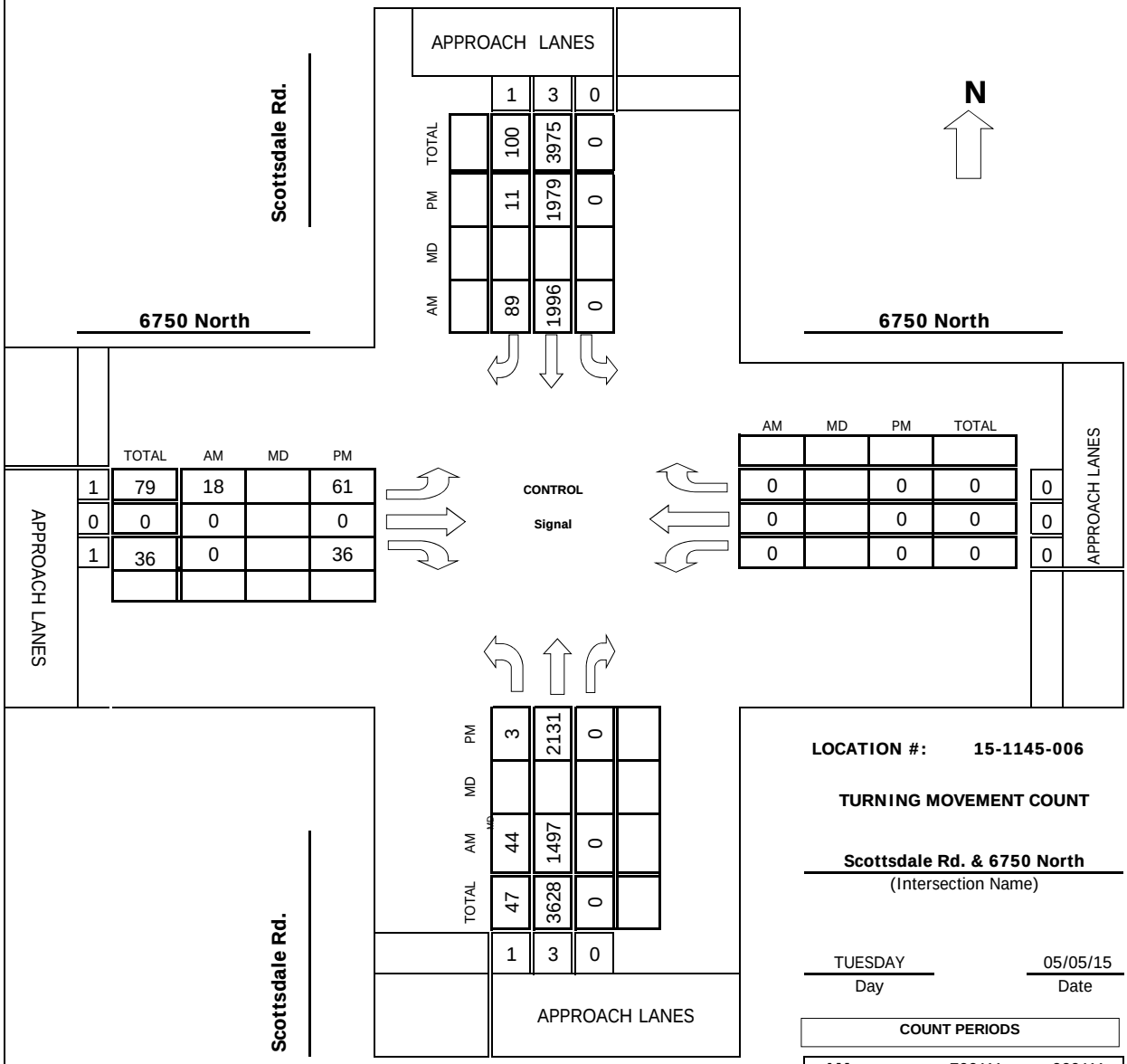
PM PEAK HOUR: 445 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1145-006

TMC SUMMARY OF Scottsdale Rd. & 6750 North



LOCATION #: 15-1145-006

TURNING MOVEMENT COUNT

Scottsdale Rd. & 6750 North
(Intersection Name)

TUESDAY — Day
05/05/15 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR: 730 AM

NOON PEAK HOUR:

PM PEAK HOUR: 445 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1182-001

TMC SUMMARY OF Invergordon Rd. & Lincoln Dr.

Invergordon Rd.

APPROACH LANES

	0	1	0
TOTAL	15	28	43
PM	10	17	25
MD			
AM	5	11	18

N

Lincoln Dr.

Lincoln Dr.

APPROACH LANES

	TOTAL	AM	MD	PM
1	15	10		5
2	1765	837		928
0	342	197		145

CONTROL

Signalized

AM	MD	PM	TOTAL	
21		25	46	0
813		916	1729	2
55		61	116	1

APPROACH LANES

PM	245	21	84
MD			
AM	103	4	93
TOTAL	348	25	177
	1	1	1

APPROACH LANES

Invergordon Rd.

LOCATION #: 15-1182-001

TURNING MOVEMENT COUNT

Invergordon Rd. & Lincoln Dr.
(Intersection Name)

THURSDAY
Day

06/18/2015
Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 445 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 15-1182-002

TMC SUMMARY OF Tatum Blvd. & Lincoln Dr.

APPROACH LANES

	1	2	1
TOTAL	555	1520	474
PM	167	616	186
MD			
AM	388	904	288

Tatum Blvd.

Lincoln Dr.

N

Lincoln Dr.

APPROACH LANES

	TOTAL	AM	MD	PM
2	511	164		347
2	1378	709		669
0	104	66		38

CONTROL

Signalized

AM	MD	PM	TOTAL	
87		248	335	1
656		771	1427	2
166		209	375	1

APPROACH LANES

	1	2	1
PM	86	1017	181
MD			
AM	47	533	216
TOTAL	133	1550	397

Tatum Blvd.

APPROACH LANES

LOCATION #: 15-1182-002

TURNING MOVEMENT COUNT

Tatum Blvd. & Lincoln Dr.
(Intersection Name)

THURSDAY — Day
06/18/2015 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR: 715 AM

NOON PEAK HOUR:

PM PEAK HOUR: 430 PM

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Friday, June 26, 2015 - Sunday, June 28, 2015 **City:** Paradise Valley **Project#** 15-1189-001

Location : Lincoln Dr. west of Quail Run Rd.

2-DAY AVERAGE

AM Period	NB		SB		EB		WB			PM Period	NB		SB		EB		WB		
00:00	0		0		21		28			12:00	0		0		132		130		
00:15	0		0		14		20			12:15	0		0		127		132		
00:30	0		0		17		17			12:30	0		0		124		133		
00:45	0	0	0	0	10	61	17	81	142	12:45	0	0	0	0	127	509	142	535	1044
01:00	0		0		12		13			13:00	0		0		123		128		
01:15	0		0		12		19			13:15	0		0		125		158		
01:30	0		0		8		17			13:30	0		0		122		135		
01:45	0	0	0	0	8	39	12	59	98	13:45	0	0	0	0	129	498	136	556	1054
02:00	0		0		8		14			14:00	0		0		131		144		
02:15	0		0		11		13			14:15	0		0		126		151		
02:30	0		0		7		9			14:30	0		0		121		146		
02:45	0	0	0	0	4	30	6	42	71	14:45	0	0	0	0	118	495	145	585	1080
03:00	0		0		8		7			15:00	0		0		120		144		
03:15	0		0		13		5			15:15	0		0		129		152		
03:30	0		0		8		7			15:30	0		0		131		161		
03:45	0	0	0	0	7	35	10	28	63	15:45	0	0	0	0	127	506	154	611	1117
04:00	0		0		10		7			16:00	0		0		135		167		
04:15	0		0		15		7			16:15	0		0		123		148		
04:30	0		0		20		10			16:30	0		0		123		148		
04:45	0	0	0	0	14	58	11	35	93	16:45	0	0	0	0	108	488	182	645	1132
05:00	0		0		27		19			17:00	0		0		109		149		
05:15	0		0		35		26			17:15	0		0		108		140		
05:30	0		0		39		17			17:30	0		0		127		142		
05:45	0	0	0	0	32	132	25	85	217	17:45	0	0	0	0	121	465	144	574	1039
06:00	0		0		39		28			18:00	0		0		131		118		
06:15	0		0		57		38			18:15	0		0		113		103		
06:30	0		0		59		43			18:30	0		0		93		95		
06:45	0	0	0	0	56	210	46	154	364	18:45	0	0	0	0	86	423	96	411	833
07:00	0		0		57		46			19:00	0		0		69		73		
07:15	0		0		68		46			19:15	0		0		80		61		
07:30	0		0		68		51			19:30	0		0		84		82		
07:45	0	0	0	0	82	275	58	200	475	19:45	0	0	0	0	89	321	93	308	629
08:00	0		0		83		54			20:00	0		0		74		88		
08:15	0		0		81		73			20:15	0		0		56		66		
08:30	0		0		90		76			20:30	0		0		66		67		
08:45	0	0	0	0	79	332	79	281	613	20:45	0	0	0	0	74	269	79	299	568
09:00	0		0		72		74			21:00	0		0		68		83		
09:15	0		0		93		74			21:15	0		0		67		76		
09:30	0		0		86		88			21:30	0		0		57		65		
09:45	0	0	0	0	83	333	101	336	669	21:45	0	0	0	0	58	249	69	292	541
10:00	0		0		91		92			22:00	0		0		57		59		
10:15	0		0		81		93			22:15	0		0		50		47		
10:30	0		0		76		111			22:30	0		0		48		37		
10:45	0	0	0	0	73	320	85	381	701	22:45	0	0	0	0	42	196	47	190	385
11:00	0		0		72		103			23:00	0		0		27		48		
11:15	0		0		78		93			23:15	0		0		33		30		
11:30	0		0		80		92			23:30	0		0		23		29		
11:45	0	0	0	0	83	312	109	396	708	23:45	0	0	0	0	25	107	26	133	240
Total Vol.						2135		2076	**4211**							4524		5136	**9660**

GPS Coordinates: 0

	Daily Totals NB	SB	**Combined**
	6659	7212	**13870**

	AM			**PM**		
Split %	50.7%	49.3%	**30.4%**	46.8%	53.2%	**69.6%**
Peak Hour	11:45	11:45	**11:45**	15:15	16:00	**15:15**
Volume	465	503	**968**	521	645	**1155**
P.H.F.	0.88	0.95	**0.92**	0.97	0.89	**0.96**

Signal Timing Change

Intersection: 6 **Lincoln Drive and Tatum Boulevard** Date: 6/9/2015

Timing by: Michael Baker Approved by: _____

Implementation Date: _____ Time: _____

Problem: _____

Solution: Town-Wide Signal timing project

Changes Made From:

- [x] Controller
- [ ] Other: _____

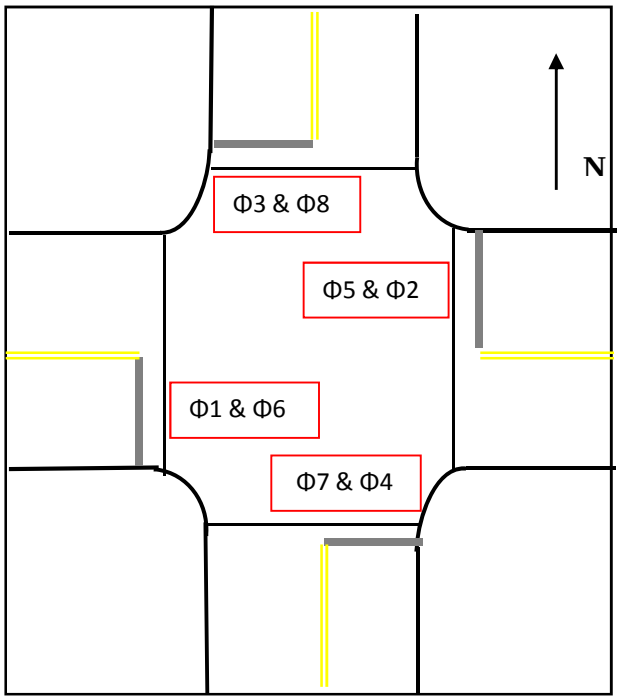
Verified Changes In:

- [ ] Synchro
- [ ] Main Timing Sheet

Is this a temporary change?

- [ ] Yes,
- [x] No

Date to Review for Removal? _____



Pattern # 1

Cycle Length: 130 **Offset:** 47 **Coord Phases:** Φ4 & Φ8

1)	17	**2)**	44	**3)**	32	**4)**	37
5)	19	**6)**	42	**7)**	8	**8)**	61

Notes: Max Recall on 2&6

Pattern # 2

Cycle Length: 130 **Offset:** 13 **Coord Phases:** Φ4 & Φ8

1)	21	**2)**	38	**3)**	30	**4)**	41
5)	18	**6)**	41	**7)**	8	**8)**	63

Notes: Max Recall on 2&6

Pattern # 3

Cycle Length: 130 **Offset:** 10 **Coord Phases:** Φ4 & Φ8

1)	21	**2)**	35	**3)**	20	**4)**	54
5)	17	**6)**	39	**7)**	9	**8)**	65

Notes: Max Recall on 2&6

Time of Day

STEP	PGM	TIME	PATTERN
1	1	6:00	1
2	1	9:00	2
3	1	14:00	3
4	1	18:00	2
5			
6			
7			
8			
9			
10			

Controller Configuration:

Ring 1	**1**		**2**		**3**		**4**	
Ring 2	**5**		**6**		**7**		**8**	
Barriers				^				^

Controller Timing Data:

Lincoln Drive and Tatum Boulevard

	1	2	3	4	5	6	7	8
Phases in use	x	x	x	x	x	x	x	x
Minimum Green	4	15	4	15	4	15	4	15
Walk		5		5		5		5
Ped Clear		23		24		23		24
Veh. Ext.	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Max 1	40	60	50	70	30	60	20	80
Max 2	40	60	50	70	30	60	20	80
Yellow Time	4	4.5	3	4.5	4	4.5	3	4.5
Red Clear	1	2.5	1	2.5	1	2.5	1	2.5

Signal Timing Change

Intersection: 16 **Lincoln Drive and Invergordon Road** Date: 6/9/2015

Timing by: Michael Baker Approved by: _____

Implementation Date: _____ Time: _____

Problem: _____

Solution: Town-Wide Signal timing project

Changes Made From:

- [x] Controller
- [ ] Other: _____

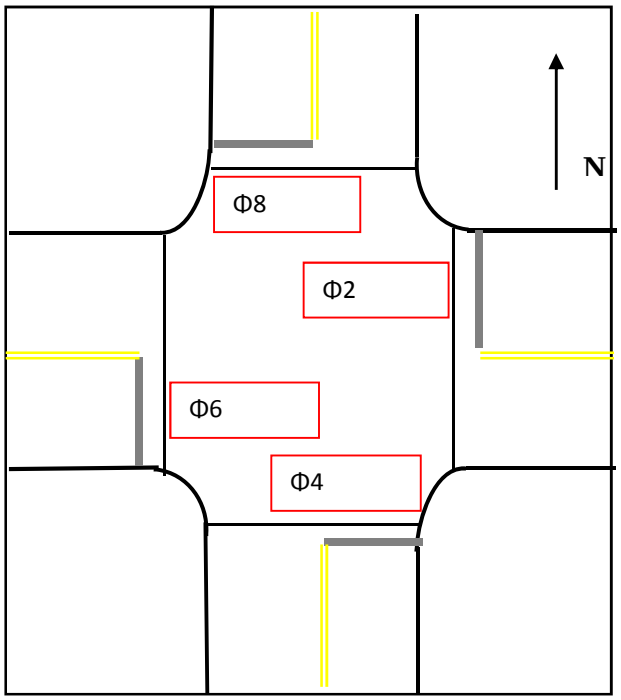
Verified Changes In:

- [ ] Synchro
- [ ] Main Timing Sheet

Is this a temporary change?

- [ ] Yes,
- [x] No

Date to Review for Removal? _____



Pattern # 1

Cycle Length: 65 **Offset:** 59 **Coord Phases:** Φ2 & Φ6

1)	0	**2)**	34	**3)**	0	**4)**	31
5)	0	**6)**	34	**7)**	0	**8)**	31

Notes:

Pattern # 2

Cycle Length: 65 **Offset:** 52 **Coord Phases:** Φ2 & Φ6

1)	0	**2)**	34	**3)**	0	**4)**	31
5)	0	**6)**	34	**7)**	0	**8)**	31

Notes:

Pattern # 3

Cycle Length: 65 **Offset:** 54 **Coord Phases:** Φ2 & Φ6

1)	0	**2)**	34	**3)**	0	**4)**	31
5)	0	**6)**	34	**7)**	0	**8)**	31

Notes:

Time of Day

STEP	PGM	TIME	PATTERN
1	1	6:00	1
2	1	9:00	2
3	1	14:00	3
4	1	18:00	2
5			
6			
7			
8			
9			
10			

Controller Configuration:

Ring 1			**2**				**4**	
Ring 2			**6**				**8**	
Barriers				^				^

Controller Timing Data:

	1	2	3	4	5	6	7	8
Phases in use		x		x		x		x
Minimum Green		15		10		15		10
Walk		7		7		7		
Ped Clear		11		17		11		
Veh. Ext.		3		3		3		3
Max 1		50		50		50		50
Max 2		50		50		50		50
Yellow Time		4.5		4		4.5		4
Red Clear		1.5		3		1.5		3

Signal Timing Change

Intersection: 19 **Lincoln Drive and Mockingbird Lane** Date: 6/9/2015

Timing by: Michael Baker Approved by: _____

Implementation Date: _____ Time: _____

Problem: _____

Solution: Town-Wide Signal timing project

Changes Made From:

- [x] Controller
- [ ] Other: _____

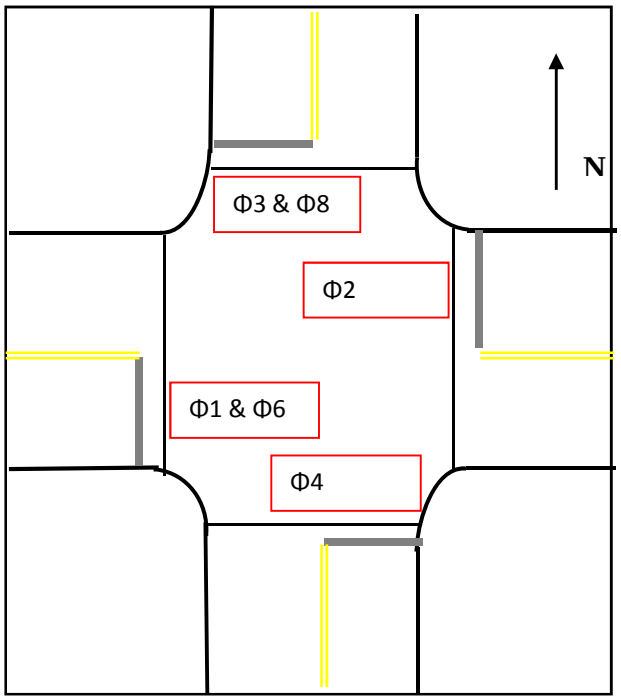
Verified Changes In:

- [ ] Synchro
- [ ] Main Timing Sheet

Is this a temporary change?

- [ ] Yes,
- [x] No

Date to Review for Removal? _____



Pattern # 1

Cycle Length: 130 **Offset:** 128 **Coord Phases:** Φ2 & Φ6

1)	27	**2)**	50	**3)**	9	**4)**	44
5)	0	**6)**	77	**7)**	0	**8)**	53

Notes:

Pattern # 2

Cycle Length: 130 **Offset:** 15 **Coord Phases:** Φ2 & Φ6

1)	26	**2)**	56	**3)**	10	**4)**	38
5)	0	**6)**	82	**7)**	0	**8)**	48

Notes:

Pattern # 3

Cycle Length: 130 **Offset:** 16 **Coord Phases:** Φ2 & Φ6

1)	31	**2)**	57	**3)**	8	**4)**	34
5)	0	**6)**	88	**7)**	0	**8)**	42

Notes:

Time of Day

STEP	PGM	TIME	PATTERN
1	1	6:00	1
2	1	9:00	2
3	1	14:00	3
4	1	18:00	2
5			
6			
7			
8			
9			
10			

Controller Configuration:

Ring 1	**1**		**2**		**3**		**4**	
Ring 2			**6**				**8**	
Barriers				^				^

Controller Timing Data:

	1	2	3	4	5	6	7	8
Phases in use	x	x	x	x		x		x
Minimum Green	4	15	4	7		15		7
Walk		7		7		7		7
Ped Clear		14		20		14		20
Veh. Ext.	3	3	3	3		3		3
Max 1	50	80	20	60		110		70
Max 2	50	80	20	60		110		70
Yellow Time	3	4.5	3	4		4.5		4
Red Clear	1	1.5	1	2.5		1.5		2.5

SCOTTSDALE RD. & INDI BASIC TIMING

CITY OF SCOTTSDALE

RECOMMENDED CLEARANCES

	N/S	E/W	LEFT TURN STANDARD
F.D.W.	16	31	
YELLOW	4.4	4.2	3.0
ALL-RED	1.6	2.8	1.0

DATE DESIGNED: 3/15/2010

SYSTEM #: 82 | SECTION #: 722

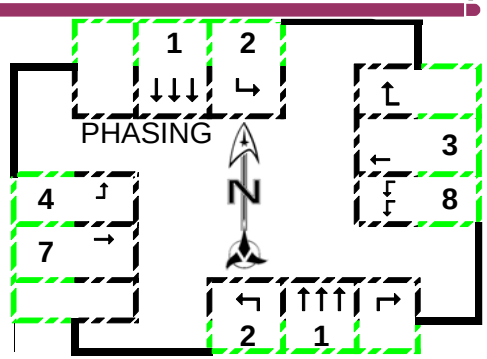
COMMUNICATIONS: MM-1-5-1 | I.P. ADDRESS: 172.17. 10.82

TIMING #1 | TIMING #2 | TIMING #3 | TIMING #4

CLEARANCE | SEQUENCE | PATTERNS | HISTORY

MM-2-1
TIMING PLAN #1

PHASE	1	2	3	4			7	8	9	10	11	12	13	14	15	16
MOVEMENT	NST	NSL	WBT	EBL			EBT	WBL								
NOTES		perm/PROT		PROT				PROT								
GREENS																
MIN GRN	20	4	6	4			6	4								
BK MGRN																
CS MGRN																
DLY GRN																
PEDESTRIAN																
WALK	7		7				7									
WALK2																
WLK MAX																
PED CLR/FDW	16		31				31									
PD CLR2																
PC MAX																
PED CO																
MAXIMUMS																
VEH EXT	0	1	2	1			1	1.5								
VH EXT2																
MAX 1	60	20	35	20			20	35								
MAX 2	70	30	40	35			40	40								
MAX 3																
DYM MAX																
DYM STP																
REDS																
YELLOW	4.4	3	4.2	3			4.2	3								
RED CLR	1.6	1	2.8	1			2.8	1								
RED MAX																
RED RVT	2		2				2									
VOL DENSITY																
ACT B4																
SEC/ACT																
MAX INT																
TIME B4																
CARS WT																
STPTDUC																
TTREDUC																
MIN GAP																
MM-2-8 RECALLS																
LOCK DET																
VEH RECALL																
PED RECALL	X															
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INIT CAL																



1	2	3	4	5	6	7	8
58	18	31	18	64	22	15	34
65	30	35	38	71	34	35	38

SPLIT PLAN MAXIMUMS

NOTES

Use Sequence #3 to Lead phs 4 & 7 and Lag phs 3 & 8

ONLY VALID WHEN STAMPED

SCOTTSDALE RD. & INDIA COORDINATOR

CITY OF SCOTTSDALE

CLEARANCES

	PH1	2	3	4	5	6	7	8
FDW	16	0	31	0	0	0	31	0
YELLOW	4.4	3.0	4.2	3.0	0.0	0.0	4.2	3.0
ALL RED	1.6	1.0	2.8	1.0	0.0	0.0	2.8	1.0

SYSTEM # 82

SECTION # 722

MORNING | EVENING | N/S EX | MID-DAY | MIDNIGHT | E/W EX

CLEARANCE | BASIC TIME | SEQUENCE | HISTORY

MM-3-3 MORNING SPLIT PATTERNS

TIMING PLAN # 1
SEQUENCE # 3
ACTION PLAN #

SEQUENCE

R1	1 ↕	2 ↰↳	4 ↥	3 ←
R2			7 →	8 ↱

MOVEMENTS NST NSL WBT EBL EBT WBL

E/W: WALK & GREEN; FDW & GREEN; GREEN w/o WALK; LEFT

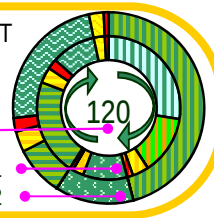
N/S

PLAN # 1

DATE EFFECTIVE 10/10/2012

OPERATIVE TIMES 0630-0900

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	55	16	33	16	55	16	17	32	120
COORD									ACTUAL
RECALLS (V, P, Mx)	X P								CYCLE
GREEN	49	12	26	12	55	16	10	28	RING 1 / RING 2

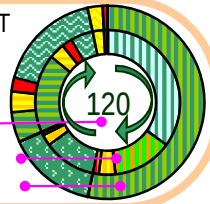


PLAN # 2

DATE EFFECTIVE 10/10/2012

OPERATIVE TIMES

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	64	18	28	10	64	18	13	25	120
COORD									ACTUAL
RECALLS (V, P, Mx)	X P								CYCLE
GREEN	58	14	21	6	64	18	6	21	RING 1 / RING 2

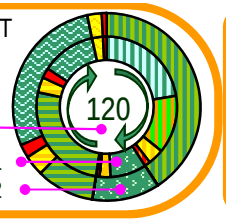


PLAN # 3

DATE EFFECTIVE 10/10/2012

OPERATIVE TIMES

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	49	14	38	19	49	14	19	38	120
COORD									ACTUAL
RECALLS (V, P, Mx)	X P								CYCLE
GREEN	43	10	31	15	49	14	12	34	RING 1 / RING 2



MM-3-2

AVAILABLE COORDINATOR PATTERN #s

1 1, 1 2, 1 3, 1 4, 1 5, 1 6
2 1, 2 2, 2 3, 2 4, 2 5, 2 6
3 1, 3 2, 3 3, 3 4, 3 5, 3 6

PROGRESSION VALUES

DIR CODE	COORD DIR	B.O.G. OFFSET
1	NB	115
2	SB	30
3	NS	30
4	EB	15
5	WB	15
6	EW	15

HYPERLINKS TO MORNING TIME-SPACE DIAGRAMS

1 2 3 4 5 6

SCOTTSDALE RD. & INDIA COORDINATOR

CITY OF SCOTTSDALE

CLEARANCES

	PH1	2	3	4	5	6	7	8
FDW	16	0	31	0	0	0	31	0
YELLOW	4.4	3.0	4.2	3.0	0.0	0.0	4.2	3.0
ALL RED	1.6	1.0	2.8	1.0	0.0	0.0	2.8	1.0

SYSTEM # 82

SECTION # 722

MORNING | EVENING | N/S EX | MID-DAY | MIDNIGHT | E/W EX

CLEARANCE | BASIC TIME | SEQUENCE | HISTORY

MM-3-3 EVENING SPLIT PATTERNS

TIMING PLAN 1
SEQUENCE 3
ACTION PLAN

SEQUENCE

R1	1 ↕	2 ↰↳			4 ↥	3 ←	
R2					7 →	8 ↱	

MOVEMENTS: NST NSL WBT EBL EBT WBL

E/W: WALK & GREEN; FDW & GREEN; GREEN w/o WALK; LEFT

N/S

PLAN # 7

DATE EFFECTIVE 11/21/2006

OPERATIVE TIMES 1530-1830

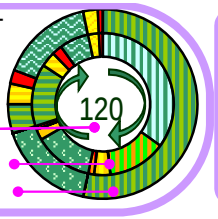
	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	57	18	27	18	57	18	18	27	120
COORD									ACTUAL
RECALLS (V, P, Mx)	X P								CYCLE
GREEN	51	14	20	14	57	18	11	23	RING 1 / RING 2

PLAN # 8

DATE EFFECTIVE

OPERATIVE TIMES

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	64	20	24	12	64	20	13	23	120
COORD									ACTUAL
RECALLS (V, P, Mx)	X P								CYCLE
GREEN	58	16	17	8	64	20	6	19	RING 1 / RING 2



PLAN # 9

DATE EFFECTIVE

OPERATIVE TIMES

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	54	16	29	21	54	16	21	29	120
COORD									ACTUAL
RECALLS (V, P, Mx)	X P								CYCLE
GREEN	48	12	22	17	54	16	14	25	RING 1 / RING 2

MM-3-2

AVAILABLE COORDINATOR PATTERN #s

7 1, 7 2, 7 3, 7 4, 7 5, 7 6
8 1, 8 2, 8 3, 8 4, 8 5, 8 6
9 1, 9 2, 9 3, 9 4, 9 5, 9 6

PROGRESSION VALUES

DIR CODE	COORD DIR	B.O.G. OFFSET
1	NB	115
2	SB	30
3	NS	30
4	EB	45
5	WB	45
6	EW	45

HYPERLINKS TO EVENING TIME-SPACE DIAGRAMS

1 2 3 4 5 6

SCOTTSDALE RD. & SP BASIC TIMING

CITY OF SCOTTSDALE

RECOMMENDED CLEARANCES

	N/S	E/W	LEFT TURN STANDARD
F.D.W.	6	22	
YELLOW	4.9	3.2	3.0
ALL-RED	1.1	3.8	1.0

DATE DESIGNED: 11/17/2010

SYSTEM #: 209 SECTION #: 722

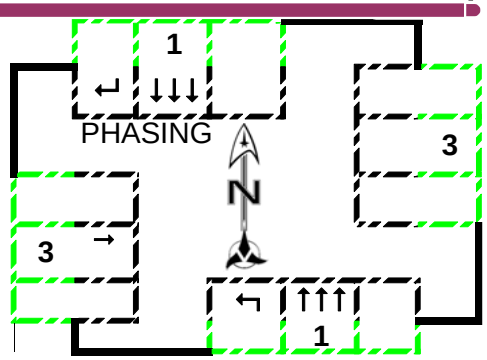
COMMUNICATIONS: MM-1-5-1 I.P. ADDRESS: 172.17. 12.09

TIMING #1 | TIMING #2 | TIMING #3 | TIMING #4

CLEARANCE | SEQUENCE | PATTERNS | HISTORY

MM-2-1
TIMING PLAN #1

	PHASE	1	3	9	10	11	12	13	14	15	16
	MOVEMENT	NST	EWT								
	NOTES										
GREENS	MIN GRN	10	5								
	BK MGRN										
	CS MGRN										
	DLY GRN										
PEDESTRIAN	WALK	20	8								
	WALK2										
	WLK MAX										
	PED CLR/FDW	10	22								
	PD CLR2										
	PC MAX										
	PED CO										
MAXIMUMS	VEH EXT		2								
	VH EXT2										
	MAX 1	95	30								
	MAX 2	100	45								
	MAX 3										
	DYM MAX										
	DYM STP										
REDS	YELLOW	4.9	2.8								
	RED CLR	1.1	3.2								
	RED MAX										
	RED RVT	2	2								
VOL DENSITY	ACT B4										
	SEC/ACT										
	MAX INT										
	TIME B4										
	CARS WT										
	STPTDUC										
	TTREDUC										
	MIN GAP										
MM-2-8 RECALLS	LOCK DET										
	VEH RECALL										
	PED RECALL	X									
	MAX RECALL										
	SOFT RECALL										
	NO REST										
	ADD INIT CAL										



1	2	3	4	5	6	7	8
94	0	26	0	0	0	0	0
99	0	41	0	0	0	0	0

SPLIT PLAN MAXIMUMS

NOTES

ONLY VALID WHEN STAMPED

SCOTTSDALE RD. & SPI COORDINATOR

CITY OF SCOTTSDALE

CLEARANCES

	PH1	2	3	4	5	6	7	8
FDW	10	0	22	0	0	0	0	0
YELLOW	4.9	0.0	2.8	0.0	0.0	0.0	0.0	0.0
ALL RED	1.1	0.0	3.2	0.0	0.0	0.0	0.0	0.0

SYSTEM # 209

SECTION # 722

MORNING | EVENING | N/S EX | MID-DAY | MIDNIGHT | E/W EX

CLEARANCE | BASIC TIME | SEQUENCE | HISTORY

MM-3-3 MORNING SPLIT PATTERNS

TIMING PLAN # 1
SEQUENCE # 1
ACTION PLAN #

SEQUENCE

R1	1 ↕		3 ↔	
R2				

MOVEMENTS NST EWT

E/W: WALK & GREEN; FDW & GREEN; GREEN w/o WALK; LEFT

N/S

PLAN # 1

DATE EFFECTIVE 11/20/2006

OPERATIVE TIMES 0630-0900

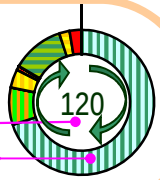
	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	95		25						120
COORD									ACTUAL
RECALLS (V, P, Mx)	X P								CYCLE
GREEN	89	0	19	0	0	0	0	0	RING 1 / RING 2

PLAN # 2

DATE EFFECTIVE 3/30/2009

OPERATIVE TIMES

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	100		20						120
COORD									ACTUAL
RECALLS (V, P, Mx)	X P								CYCLE
GREEN	94	0	14	0	0	0	0	0	RING 1 / RING 2



PLAN # 3

DATE EFFECTIVE 3/30/2009

OPERATIVE TIMES

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	88		32						120
COORD									ACTUAL
RECALLS (V, P, Mx)	X P								CYCLE
GREEN	82	0	26	0	0	0	0	0	RING 1 / RING 2

MM-3-2

AVAILABLE COORDINATOR PATTERN #s

1 1, 1 2, 1 3, 1 4, 1 5, 1 6, 2 1, 2 2, 2 3, 2 4, 2 5, 2 6, 3 1, 3 2, 3 3, 3 4, 3 5, 3 6

PROGRESSION VALUES

DIR CODE	COORD DIR	B.O.G. OFFSET
1	NB	100
2	SB	75
3	NS	65
4	EB	25
5	WB	25
6	EW	25

HYPERLINKS TO MORNING TIME-SPACE DIAGRAMS

1 2 3 4 5 6

SCOTTSDALE RD. & SPI COORDINATOR

CITY OF SCOTTSDALE

CLEARANCES

	PH1	2	3	4	5	6	7	8
FDW	10	0	22	0	0	0	0	0
YELLOW	4.9	0.0	2.8	0.0	0.0	0.0	0.0	0.0
ALL RED	1.1	0.0	3.2	0.0	0.0	0.0	0.0	0.0

SYSTEM # 209

SECTION # 722

MORNING | EVENING | N/S EX | MID-DAY | MIDNIGHT | E/W EX

CLEARANCE | BASIC TIME | SEQUENCE | HISTORY

MM-3-3 EVENING SPLIT PATTERNS

TIMING PLAN 1

SEQUENCE 1

ACTION PLAN

R1	1 ↕		3 ↔	
R2				

MOVEMENTS NST EWT

E/W: WALK & GREEN; FDW & GREEN; GREEN w/o WALK; LEFT

N/S

PLAN # 7

DATE EFFECTIVE 1/0/1900

OPERATIVE TIMES 1530-1830

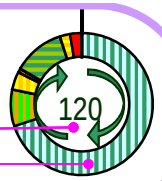
	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	96		24						120
COORD	X								ACTUAL
RECALLS (V, P, Mx)	P								CYCLE
GREEN	90	0	18	0	0	0	0	0	RING 1 / RING 2

PLAN # 8

DATE EFFECTIVE

OPERATIVE TIMES

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	100		20						120
COORD	X								ACTUAL
RECALLS (V, P, Mx)	P								CYCLE
GREEN	94	0	14	0	0	0	0	0	RING 1 / RING 2



PLAN # 9

DATE EFFECTIVE

OPERATIVE TIMES

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	88		32						120
COORD	X								ACTUAL
RECALLS (V, P, Mx)	P								CYCLE
GREEN	82	0	26	0	0	0	0	0	RING 1 / RING 2

MM-3-2

AVAILABLE COORDINATOR PATTERN #s

7 1, 7 2, 7 3, 7 4, 7 5, 7 6

8 1, 8 2, 8 3, 8 4, 8 5, 8 6

9 1, 9 2, 9 3, 9 4, 9 5, 9 6

PROGRESSION VALUES

DIR CODE	COORD DIR	B.O.G. OFFSET
1	NB	100
2	SB	75
3	NS	65
4	EB	30
5	WB	30
6	EW	30

HYPERLINKS TO EVENING TIME-SPACE DIAGRAMS

1 2 3 4 5 6

SCOTTSDALE RD. & LINC BASIC TIMING

CITY OF SCOTTSDALE

RECOMMENDED CLEARANCES

	N/S	E/W	LEFT TURN STANDARD
F.D.W.	15	26	
YELLOW	4.5	4	3.0
ALL-RED	1.5	3	1.0

DATE DESIGNED	
4/20/2010	
SYSTEM #	SECTION #
80	722

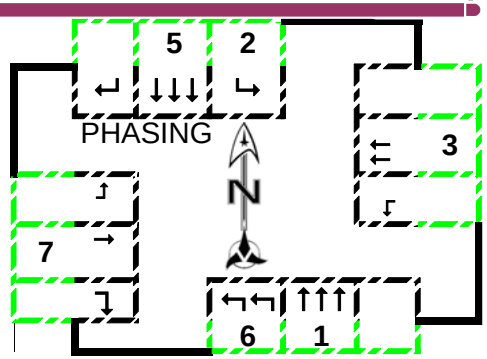
COMMUNICATIONS	I.P. ADDRESS
MM-1-5-1	172.17. 10.80

TIMING #1 | TIMING #2 | TIMING #3 | TIMING #4

CLEARANCE | SEQUENCE | PATTERNS | HISTORY

MM-2-1
TIMING PLAN #1

	PHASE	1	2	3		5	6	7		9	10	11	12	13	14	15	16
	MOVEMENT	NBT	SBL	WBT		SBT	NBL	EBT									
	NOTES			Th&Lt				Th&Lt									
GREENS	MIN GRN	20	5	5		20	5	8									
	BK MGRN																
	CS MGRN																
	DLY GRN																
PEDESTRIAN	WALK	7		7		7		7									
	WALK2																
	WLK MAX																
	PED CLR/FDW	15		26		15		26									
	PD CLR2																
	PC MAX																
	PED CO																
MAXIMUMS	VEH EXT	0	1	2		0	1	2									
	VH EXT2																
	MAX 1	65	15	20		60	20	30									
	MAX 2	70	35	30		65	35	40									
	MAX 3																
	DYM MAX																
	DYM STP																
REDS	YELLOW	4.5	3	4		4.5	3	4									
	RED CLR	1.5	1	3		1.5	1	3									
	RED MAX																
	RED RVT	2		2		2		2									
VOL DENSITY	ACT B4																
	SEC/ACT																
	MAX INT																
	TIME B4																
	CARS WT																
	STPTDUC																
	TTREDUC																
	MIN GAP																
MM-2-8	LOCK DET																
	VEH RECALL																
	PED RECALL	X				X											
	MAX RECALL																
	SOFT RECALL																
	NO REST																
RECALLS	ADD INIT CAL																



1	2	3	4	5	6	7	8
62	12	20	33	57	21	26	27
70	35	27	46	64	35	39	34

SPLIT PLAN MAXIMUMS

NOTES

PHASES 3 & 7 ARE EXCLUSIVE

ONLY VALID WHEN STAMPED

SCOTTSDALE RD. & LINC COORDINATOR

CITY OF SCOTTSDALE

CLEARANCES

	PH1	2	3	4	5	6	7	8
FDW	15	0	26	0	15	0	26	0
YELLOW	4.5	3.0	4.0	0.0	4.5	3.0	4.0	0.0
ALL RED	1.5	1.0	3.0	0.0	1.5	1.0	3.0	0.0

SYSTEM # 80

SECTION # 722

MORNING | EVENING | N/S EX | MID-DAY | MIDNIGHT | E/W EX

CLEARANCE | BASIC TIME | SEQUENCE | HISTORY

MM-3-3 MORNING SPLIT PATTERNS

TIMING PLAN # 1

SEQUENCE # 9

ACTION PLAN #

SEQUENCE

R1	1 ↑	2 ↳	3 ←	
R2	5 ↓	6 ↰		7 →

MOVEMENTS: NBT, SBL, WBT, SBT, NBL, EBT

E/W: WALK & GREEN; FDW & GREEN; GREEN w/o WALK; LEFT

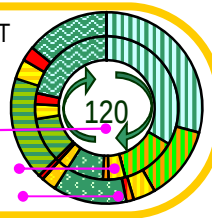
N/S

PLAN # 1

DATE EFFECTIVE 4/20/2010

OPERATIVE TIMES 0630-0900

PHASE	1	2	3	4	5	6	7	8	TARGET
	RING 1				RING 2				
SPLIT	61	14	19	26	56	19	28	17	120
COORD					X				ACTUAL
RECALLS (V, P, Mx)					P				CYCLE
GREEN	55	10	12	26	50	15	21	17	RING 1 / RING 2

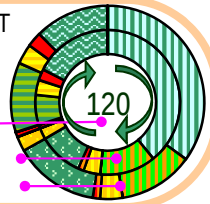


PLAN # 2

DATE EFFECTIVE 4/20/2010

OPERATIVE TIMES

PHASE	1	2	3	4	5	6	7	8	TARGET
	RING 1				RING 2				
SPLIT	68	16	15	21	63	21	21	15	120
COORD					X				ACTUAL
RECALLS (V, P, Mx)					P				CYCLE
GREEN	62	12	8	21	57	17	14	15	RING 1 / RING 2

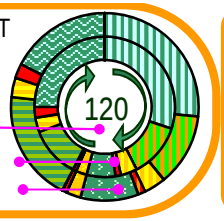


PLAN # 3

DATE EFFECTIVE 4/20/2010

OPERATIVE TIMES

PHASE	1	2	3	4	5	6	7	8	TARGET
	RING 1				RING 2				
SPLIT	57	12	21	30	53	16	30	21	120
COORD					X				ACTUAL
RECALLS (V, P, Mx)					P				CYCLE
GREEN	51	8	14	30	47	12	23	21	RING 1 / RING 2



MM-3-2

AVAILABLE COORDINATOR PATTERN #s

1 1, 1 2, 1 3, 1 4, 1 5, 1 6

2 1, 2 2, 2 3, 2 4, 2 5, 2 6

3 1, 3 2, 3 3, 3 4, 3 5, 3 6

PROGRESSION VALUES

DIR CODE	COORD DIR	B.O.G. OFFSET
1	NB	75
2	SB	90
3	NS	90
4	EB	105
5	WB	105
6	EW	105

HYPERLINKS TO MORNING TIME-SPACE DIAGRAMS

1 2 3 4 5 6

SCOTTSDALE RD. & LINC COORDINATOR

CITY OF SCOTTSDALE

CLEARANCES

	PH1	2	3	4	5	6	7	8
FDW	15	0	26	0	15	0	26	0
YELLOW	4.5	3.0	4.0	0.0	4.5	3.0	4.0	0.0
ALL RED	1.5	1.0	3.0	0.0	1.5	1.0	3.0	0.0

SYSTEM # 80

SECTION # 722

MORNING | EVENING | N/S EX | MID-DAY | MIDNIGHT | E/W EX

CLEARANCE | BASIC TIME | SEQUENCE | HISTORY

MM-3-3 EVENING SPLIT PATTERNS

TIMING PLAN 1

SEQUENCE 9

ACTION PLAN

SEQUENCE				
R1	1 ↑	2 ↳	3 ←	
R2	5 ↓	6 ↰		7 →

MOVEMENTS NBT SBT WBT SBT NBL EBT

E/W: WALK & GREEN; FDW & GREEN; GREEN w/o WALK; LEFT

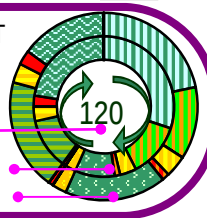
N/S

PLAN # 7

DATE EFFECTIVE 4/20/2010

OPERATIVE TIMES 1530-1830

PHASE	1	2	3	4	5	6	7	8	TARGET
	RING 1				RING 2				
SPLIT	57	15	21	27	47	25	30	18	120
COORD					X				ACTUAL
RECALLS (V, P, Mx)					P				CYCLE
GREEN	51	11	14	27	41	21	23	18	RING 1 / RING 2

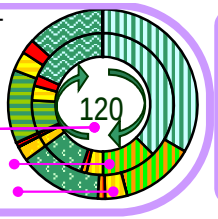


PLAN # 8

DATE EFFECTIVE 4/20/2010

OPERATIVE TIMES

PHASE	1	2	3	4	5	6	7	8	TARGET
	RING 1				RING 2				
SPLIT	66	16	16	22	61	21	22	16	120
COORD					X				ACTUAL
RECALLS (V, P, Mx)					P				CYCLE
GREEN	60	12	9	22	55	17	15	16	RING 1 / RING 2

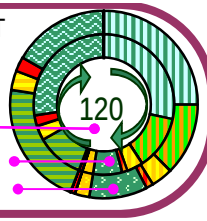


PLAN # 9

DATE EFFECTIVE 4/20/2010

OPERATIVE TIMES

PHASE	1	2	3	4	5	6	7	8	TARGET
	RING 1				RING 2				
SPLIT	55	12	20	33	51	16	33	20	120
COORD					X				ACTUAL
RECALLS (V, P, Mx)					P				CYCLE
GREEN	49	8	13	33	45	12	26	20	RING 1 / RING 2



MM-3-2

AVAILABLE COORDINATOR PATTERN #s

7 1, 7 2, 7 3, 7 4, 7 5, 7 6

8 1, 8 2, 8 3, 8 4, 8 5, 8 6

9 1, 9 2, 9 3, 9 4, 9 5, 9 6

PROGRESSION VALUES

DIR CODE	COORD DIR	B.O.G. OFFSET
1	NB	75
2	SB	90
3	NS	90
4	EB	3
5	WB	3
6	EW	3

HYPERLINKS TO EVENING TIME-SPACE DIAGRAMS

1 2 3 4 5 6

SCOTTSDALE RD. & McD BASIC TIMING

CITY OF SCOTTSDALE

RECOMMENDED CLEARANCES

	N/S	E/W	LEFT TURN STANDARD
F.D.W.	16	24	
YELLOW	4.5	4.3	3.0
ALL-RED	1.5	2.7	1.0

DATE DESIGNED	
3/15/2010	
SYSTEM #	SECTION #
73	721

COMMUNICATIONS	I.P. ADDRESS
MM-1-5-1	172.17. 10.73

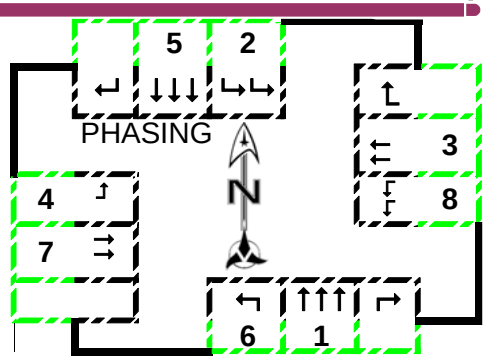
TIMING #1 | TIMING #2 | TIMING #3 | TIMING #4

CLEARANCE | SEQUENCE | PATTERNS | HISTORY

MM-2-1
TIMING PLAN #1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MOVEMENT	NBT	SBL	WBT	EBL	SBT	NBL	EBT	WBL								
NOTES																
MIN GRN	20	10	8	6	20	10	8	6								
BK MGRN																
CS MGRN																
DLY GRN																
WALK	9		6		9		6									
WALK2																
WLK MAX																
PED CLR/FDW	16		24		16		24									
PD CLR2																
PC MAX																
PED CO																
VEH EXT	0	1	2	1	0	1	2	1								
VH EXT2																
MAX 1	55	20	40	20	55	20	40	20								
MAX 2	65	35	45	30	65	35	45	30								
MAX 3																
DYM MAX																
DYM STP																
YELLOW	4.5	3	4.3	3	4.5	3	4.3	3								
RED CLR	1.5	1	2.7	1	1.5	1	2.7	1								
RED MAX																
RED RVT	2		2		2		2									
ACT B4																
SEC/ACT																
MAX INT																
TIME B4																
CARS WT																
STPTDUC																
TTREDUC																
MIN GAP																
LOCK DET																
VEH RECALL																
PED RECALL																
MAX RECALL	x				x											
SOFT RECALL																
NO REST																
ADD INIT CAL																

GREENS | PEDESTRIAN | MAXIMUMS | REDS | VOL DENSITY | MM-2-8 RECALLS



1	2	3	4	5	6	7	8
52	20	29	17	52	20	29	17
64	35	44	39	64	35	44	39

SPLIT PLAN MAXIMUMS

NOTES

ONLY VALID WHEN STAMPED

SCOTTSDALE RD. & McDC COORDINATOR

CITY OF SCOTTSDALE

CLEARANCES

	PH1	2	3	4	5	6	7	8
FDW	16	0	24	0	16	0	24	0
YELLOW	4.5	3.0	4.3	3.0	4.5	3.0	4.3	3.0
ALL RED	1.5	1.0	2.7	1.0	1.5	1.0	2.7	1.0

SYSTEM # 73

SECTION # 721

MORNING | EVENING | N/S EX | MID-DAY | MIDNIGHT | E/W EX

CLEARANCE | BASIC TIME | SEQUENCE | HISTORY

MM-3-3 MORNING SPLIT PATTERNS

TIMING PLAN # 1
SEQUENCE # 1
ACTION PLAN #

SEQUENCE

R1	1 ↑	2 ↳	3 ←	4 ↱
R2	5 ↓	6 ↰	7 →	8 ↳

E/W: WALK & GREEN; FDW & GREEN; GREEN w/o WALK; LEFT

N/S

MM-3-2 AVAILABLE COORDINATOR PATTERN #s

PROGRESSION VALUES

HYPERLINKS TO MORNING TIME-SPACE DIAGRAMS

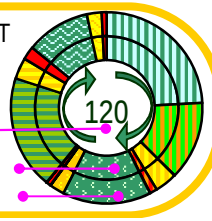
MOVEMENTS	NBT	SBL	WBT	EBL	SBT	NBL	EBT	WBL

PLAN # 1

DATE EFFECTIVE 1/0/1900

OPERATIVE TIMES 0630-0900

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	51	22	30	17	51	22	30	17	120
COORD	X				X				ACTUAL CYCLE
RECALLS (V, P, Mx)	P				P				
GREEN	45	18	23	13	45	18	23	13	RING 1 / RING 2



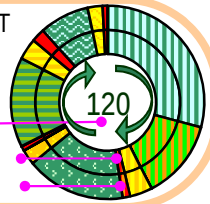
1 1, 1 2, 1 3, 1 4, 1 5, 1 6

PLAN # 2

DATE EFFECTIVE 3/30/2009

OPERATIVE TIMES

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	57	24	25	14	57	24	25	14	120
COORD	X				X				ACTUAL CYCLE
RECALLS (V, P, Mx)	P				P				
GREEN	51	20	18	10	51	20	18	10	RING 1 / RING 2



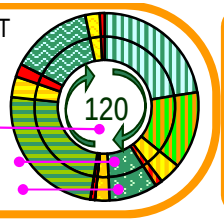
2 1, 2 2, 2 3, 2 4, 2 5, 2 6

PLAN # 3

DATE EFFECTIVE 3/30/2009

OPERATIVE TIMES

	RING 1				RING 2				TARGET
PHASE	1	2	3	4	5	6	7	8	
SPLIT	49	14	36	21	49	14	36	21	120
COORD	X				X				ACTUAL CYCLE
RECALLS (V, P, Mx)	P				P				
GREEN	43	10	29	17	43	10	29	17	RING 1 / RING 2



3 1, 3 2, 3 3, 3 4, 3 5, 3 6

DIR CODE	COORD DIR	B.O.G. OFFSET
1	NB	35
2	SB	25
3	NS	30
4	EB	25
5	WB	25
6	EW	25

SCOTTSDALE RD. & McDC COORDINATOR

CITY OF SCOTTSDALE

CLEARANCES

	PH1	2	3	4	5	6	7	8
FDW	16	0	24	0	16	0	24	0
YELLOW	4.5	3.0	4.3	3.0	4.5	3.0	4.3	3.0
ALL RED	1.5	1.0	2.7	1.0	1.5	1.0	2.7	1.0

SYSTEM # 73

SECTION # 721

MORNING | EVENING | N/S EX | MID-DAY | MIDNIGHT | E/W EX

CLEARANCE | BASIC TIME | SEQUENCE | HISTORY

MM-3-3 EVENING SPLIT PATTERNS

TIMING PLAN 1

SEQUENCE 1

ACTION PLAN

SEQUENCE

R1	1 ↑	2 ↳	3 ←	4 ↱
R2	5 ↓	6 ↰	7 →	8 ↳

MOVEMENTS	NBT	SBL	WBT	EBL	SBT	NBL	EBT	WBL

E/W: WALK & GREEN; FDW & GREEN; GREEN w/o WALK; LEFT

N/S

PLAN # 7

DATE EFFECTIVE 1/0/1900

OPERATIVE TIMES 1530-1830

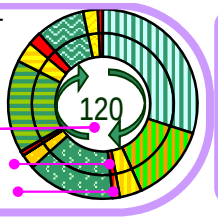
PHASE	1	2	3	4	5	6	7	8	TARGET
	RING 1				RING 2				
SPLIT	54	19	31	16	54	19	31	16	120
COORD					X				ACTUAL CYCLE
RECALLS (V, P, Mx)					P				
GREEN	48	15	24	12	48	15	24	12	RING 1 / RING 2

PLAN # 8

DATE EFFECTIVE

OPERATIVE TIMES

PHASE	1	2	3	4	5	6	7	8	TARGET
	RING 1				RING 2				
SPLIT	58	22	26	14	58	22	26	14	120
COORD					X				ACTUAL CYCLE
RECALLS (V, P, Mx)					P				
GREEN	52	18	19	10	52	18	19	10	RING 1 / RING 2

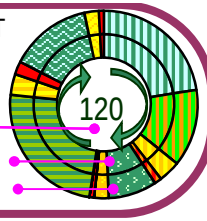


PLAN # 9

DATE EFFECTIVE

OPERATIVE TIMES

PHASE	1	2	3	4	5	6	7	8	TARGET
	RING 1				RING 2				
SPLIT	49	14	36	21	49	14	36	21	120
COORD					X				ACTUAL CYCLE
RECALLS (V, P, Mx)					P				
GREEN	43	10	29	17	43	10	29	17	RING 1 / RING 2



MM-3-2

AVAILABLE COORDINATOR PATTERN #s

7 1, 7 2, 7 3, 7 4, 7 5, 7 6

8 1, 8 2, 8 3, 8 4, 8 5, 8 6

9 1, 9 2, 9 3, 9 4, 9 5, 9 6

PROGRESSION VALUES

DIR CODE	COORD DIR	B.O.G. OFFSET
1	NB	35
2	SB	25
3	NS	30
4	EB	35
5	WB	35
6	EW	35

HYPERLINKS TO EVENING TIME-SPACE DIAGRAMS

1 2 3 4 5 6

APPENDIX C

COLLISION DATA

CRASH STATISTICS *Involvement* **Lincoln Drive, Mockingbird Lane to 70th Street**

2012

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	3	7	7	0
Severity				
Fatal	0	0	0	0
Injury	0	0	0	0
PDO	3			
Total	3			

	PDO	INJ	FAT	TOTAL
Units	7	0	0	7

	Code	No.
LightCondition		
DAYLIGHT	1	3
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		3
Weather		
CLEAR	1	3
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		3
TrafficWayType		
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	0
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	1
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	0
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	2
UNKNOWN	99	0
Check Total		3
Weekday		
Sunday	1	0
Monday	2	0
Tuesday	3	0
Wednesday	4	1
Thursday	5	1
Friday	6	0
Saturday	7	1
Check Total		3

Circumstances

Intersection Related?	0
Hit & Run?	1

	Code	No.
JunctionRelation		
NOT_JUNCTION_RELATED	0	3
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	0
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		3
CollisionManner		
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	0
LEFT_TURN	3	0
REAR_END	4	2
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	1
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		3

TravelDirection		
1	NORTH	N
2	SOUTH	S
3	EAST	E
4	WEST	W
5	NORTHWEST	NW
6	NORTHEAST	NE
7	SOUTHWEST	SW
8	SOUTHEAST	SE
99	UNKNOWN	99

	Code	No.
First Harmful Event		
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	3
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		3

	Code	No.
Month		
January	1	0
February	2	0
March	3	0
April	4	0
May	5	1
June	6	0
July	7	0
August	8	0
September	9	2
October	10	0
November	11	0
December	12	0
Total		3
(Unit) SurfaceCondition		
DRY	1	7
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		7

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->							<-DATE & TIME->		<---------- UNITS ---------->														<---------- PERSON ---------->											<------- SEVERITY ------->				<----- GENERAL ----->							
INCIDNT	ON STREET	MP	OFF-SET	DIR	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	DW	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	FATALITIES MOT	NON	TTL	MOT	NON	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2649811	Lincoln Dr			M	400	Mockingbird Ln	719	719	120512	14:42	7	2	1	1	99	1	1	1	0	0	1	1	W	W	1	8	2	0	1	1	1	1	12	1	0	0	255	1		0		0		N	1	1	0	5	16	6
2653925	Lincoln Dr			P	457	70th St	719	719	120912	08:03	4	2	1	1	1	1	1	1	0	0	1	1	E	E	2	1	2	0	1	1	1	1	16	1	0	0	255	1		0		0		N	1	1	0	3	16	4
2653944	Lincoln Dr			M	540	70th St	719	719	120920	08:48	5	3	1	1	1	1	1	1	99	99	1	1	E	E	1	1	3	0	1	1	1	1	1	1	0	0	255	1		0		0		Y	1	1	0	5	16	4
													1		1		1		99		1		E		1				1		1		16		0															

CRASH STATISTICS *Involvement* **Lincoln Drive, Mockingbird Lane to 70th Street**

2013

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	3	6	8	0
Severity				
Fatal	0	0	0	0
Injury	2	2	2	0
PDO	1			
Total	3			

	PDO	INJ	FAT	TOTAL
Units	2	4	0	6

LightCondition	Code	No.
DAYLIGHT	1	3
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		3

Weather	Code	No.
CLEAR	1	2
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	1
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		3

TrafficWayType	Code	No.
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	1
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	1
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	0
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	1
UNKNOWN	99	0
Check Total		3

Weekday	Code	No.
Sunday	1	0
Monday	2	0
Tuesday	3	0
Wednesday	4	1
Thursday	5	0
Friday	6	2
Saturday	7	0
Check Total		3

Circumstances	
Intersection Related?	2
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	1
INTERSECTION_NON_INTERCHANGE	1	1
INTERSECTION_RELATED_NON_INTERCHANGE	2	0
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	1
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		3

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	1
LEFT_TURN	3	0
REAR_END	4	0
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	1
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	1
Check Total		3

TravelDirection	Code	
NORTH	1	N
SOUTH	2	S
EAST	3	E
WEST	4	W
NORTHWEST	5	NW
NORTHEAST	6	NE
SOUTHWEST	7	SW
SOUTHEAST	8	SE
UNKNOWN	99	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	3
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		3

Month	Code	No.
January	1	0
February	2	0
March	3	0
April	4	0
May	5	1
June	6	0
July	7	0
August	8	0
September	9	1
October	10	0
November	11	1
December	12	0
Total		3

(Unit) SurfaceCondition	Code	No.
DRY	1	4
WET	2	2
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		6

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->								<-DATE & TIME->		<---------- UNITS ---------->																<---------- PERSON ---------->										<------- SEVERITY ------->						<----- GENERAL ----->							
INCIDNT	ON STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D W	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	MOT	NON	FATALITIES TTL	MOT	NON	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2728952	Lincoln Dr			P	0	Mockingbird Ln	719	719	130517	10:48	6	2	1	1	1	1	1	1	-1	0	1	1	S	E	4	1	3	0	4	1	1	1	-1	6	0	0	255	1		1	1	0	0			N	1	1	11	3	16	99
																													1		2		103		0																		
2766102	Lincoln Dr			P	0	Mockingbird Ln	719	719	130918	16:23	4	2	1	1	1	1	1	1	0	0	1	1	E	S	1	1	3	0	1	4	3	1	1	-1	0	0	255	1		1	1	0	0			N	1	1	1	2	16	2
																													1		1		6		0																		
2783432	Lincoln Dr			M	500	70th St	719	719	131122	13:41	6	2	2	2	99	99	1	1	0	0	1	1	E	E	8	1	2	0	1	1	1	1	1	12	0	0	255	1		0		0				N	1	4	0	5	16	6

CRASH STATISTICS *Involvement* **Lincoln Drive, Mockingbird Lane to 70th Street**

2014

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	5	11	13	0
Severity				
Fatal	0	0	0	0
Injury	1	1	1	0
PDO	4			
Total	5			

	PDO	INJ	FAT	TOTAL
Units	8	3	0	11

LightCondition	Code	No.
DAYLIGHT	1	4
DAWN	2	0
DUSK	3	1
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		5

Weather	Code	No.
CLEAR	1	5
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		5

TrafficWayType	Code	No.
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	1
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	1
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	2
UNKNOWN	99	1
Check Total		5

Weekday	Code	No.
Sunday	1	1
Monday	2	2
Tuesday	3	0
Wednesday	4	0
Thursday	5	0
Friday	6	2
Saturday	7	0
Check Total		5

Circumstances	
Intersection Related?	4
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	4
INTERSECTION_RELATED_NON_INTERCHANGE	2	0
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	1
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		5

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	0
LEFT_TURN	3	2
REAR_END	4	0
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	1
SIDESWIPE_OPPOSITE_DIRECTION	7	1
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	1
UNKNOWN	99	0
Check Total		5

TravelDirection		
1	NORTH	N
2	SOUTH	S
3	EAST	E
4	WEST	W
5	NORTHWEST	NW
6	NORTHEAST	NE
7	SOUTHWEST	SW
8	SOUTHEAST	SE
99	UNKNOWN	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	5
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		5

Month	Code	No.
January	1	0
February	2	0
March	3	2
April	4	0
May	5	0
June	6	1
July	7	0
August	8	0
September	9	2
October	10	0
November	11	0
December	12	0
Total		5

(Unit) SurfaceCondition	Code	No.
DRY	1	11
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		11

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->							<-DATE & TIME->		<---------- UNITS ---------->																<---------- PERSON ---------->												<------- SEVERITY ------->						<----- GENERAL ----->							
INCIDNT	ON STREET	MP	OFF-SET	DIR	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	DW	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	MOT	NON	FATALITIES TTL	MOT	NON	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2825395	Lincoln Dr			P	700	Mockingbird Ln	719	719	140331	08:52	2	2	1	1	1	1	1	1	0	0	1	1	W	NW	1	6	2	0	1	1	1	1	16	1	0	0	255	1		0		0		N	1	1	5	4	16	6
2825474	Lincoln Dr			P	0	Mockingbird Ln	719	719	140307	07:56	6	3	1	1	##	##	1	1	99	0	1	1	E	S	4	3	3	0	1	1	1	2	1	4	0	0	255		1	1	1	0	0		N	1	1	1	5	16	7
													1		##		1		0		1		W		1				1		1		1		0																	
2852145	Lincoln Dr			P	0	Mockingbird Ln	719	719	140620	18:31	6	2	1	1	1	1	1	1	-1	-1	1	1	W	S	1	1	2	0	1	1	1	1	2	2	0	0	255	1		0		0		N	1	1	1	99	16	97
2877308	Lincoln Dr			P	0	Mockingbird Ln	719	719	140921	19:16	1	2	1	1	1	1	1	1	0	0	1	1	S	W	4	1	2	0	1	1	1	1	1	5	0	0	255	1		0		0		N	3	1	1	5	16	3
2877309	Lincoln Dr			P	0	Mockingbird Ln	719	719	140922	11:42	2	2	1	1	1	1	1	1	0	0	1	1	NE	W	4	1	4	0	4	1	1	1	-1	103	0	0	255	1		0		0		N	1	1	1	2	16	3
																													1	4	1	1	1	-1	0	0	255															

CRASH STATISTICS **Mockingbird Lane at Indian Bend Road**

2012

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	1	2	2	0
Severity				
Fatal	0	0	0	0
Injury	1	1	1	0
PDO	0			
Total	1			

	PDO	INJ	FAT	TOTAL
Units	0	2	0	2

LightCondition	Code	No.
DAYLIGHT	1	1
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		1

Weather	Code	No.
CLEAR	1	1
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1

TrafficWayType	Code	No.
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	0
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	1
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	0
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	0
UNKNOWN	99	0
Check Total		1

Weekday	Code	No.
Sunday	1	0
Monday	2	0
Tuesday	3	0
Wednesday	4	0
Thursday	5	0
Friday	6	1
Saturday	7	0
Check Total		1

Circumstances

Intersection Related?	1
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	1
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		1

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	0
LEFT_TURN	3	0
REAR_END	4	1
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1

TravelDirection		
1	NORTH	N
2	SOUTH	S
3	EAST	E
4	WEST	W
5	NORTHWEST	NW
6	NORTHEAST	NE
7	SOUTHWEST	SW
8	SOUTHEAST	SE
99	UNKNOWN	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	1
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		1

Month	Code	No.
January	1	0
February	2	0
March	3	0
April	4	0
May	5	0
June	6	0
July	7	0
August	8	0
September	9	1
October	10	0
November	11	0
December	12	0
Total		1

(Unit) SurfaceCondition	Code	No.
DRY	1	2
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		2

PLACE HOLDER (clear fill before printing)

INCIDNT	ON STREET	MP	OFF-SET	DR	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	DW	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOLTN D1	VIOLTN D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INCIDENTS INJ	INCIDENTS FAT	INJURIES TTL	INJURIES MOT	INJURIES NON	FATALITIES TTL	FATALITIES MOT	FATALITIES NON	HR	LT CN	WE CN	JCT REL	TRF CWY	HE CD	MC
2653946	Mockingbird Ln			M	30	Indian Bend Rd	719	719	120921	15:37	6	2	1	1	1	1	1	1	0	0	1	1	N	N	1	2	2	0	1	1	2	1	1	4	0	0	255		1		1	1	0	0			N	1	1	2	3	16	4

CRASH STATISTICS **Mockingbird Lane at Lincoln Drive**

2012

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	1	2	2	0

Severity

Fatal	0	0	0	0
Injury	0	0	0	0
PDO	1			
Total	1			

	PDO	INJ	FAT	TOTAL
Units	2	0	0	2

LightCondition	Code	No.
DAYLIGHT	1	1
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		1

Weather	Code	No.
CLEAR	1	1
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1

TrafficWayType	Code	No.
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	0
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	1
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	0
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	0
UNKNOWN	99	0
Check Total		1

Weekday	Code	No.
Sunday	1	0
Monday	2	0
Tuesday	3	1
Wednesday	4	0
Thursday	5	0
Friday	6	0
Saturday	7	0
Check Total		1

Circumstances

Intersection Related?	1
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	1
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		1

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	0
LEFT_TURN	3	0
REAR_END	4	1
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1

TravelDirection		
1	NORTH	N
2	SOUTH	S
3	EAST	E
4	WEST	W
5	NORTHWEST	NW
6	NORTHEAST	NE
7	SOUTHWEST	SW
8	SOUTHEAST	SE
99	UNKNOWN	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	1
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		1

Month	Code	No.
January	1	0
February	2	0
March	3	0
April	4	0
May	5	0
June	6	0
July	7	0
August	8	0
September	9	0
October	10	1
November	11	0
December	12	0
Total		1

(Unit) SurfaceCondition	Code	No.
DRY	1	2
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		2

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->							<-DATE & TIME->		<---------- UNITS ---------->														<---------- PERSON ---------->										<------- SEVERITY ------->						<----- GENERAL ----->							
INCIDNT	ON STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D W	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	FATALITIES MOT	FATALITIES NON	TTL	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2677277	Lincoln Dr			P	0	Mockingbird Ln	719	719	121016	15:27	3	2	1	1	1	1	1	1	0	0	1	1	E	E	3	1	2	0	1	1	1	1	16	1	0	0	255	1		0		0		N	1	1	2	3	16	4

CRASH STATISTICS **Mockingbird Lane at Lincoln Drive**

2013

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	1	2	3	0

Severity

Fatal	0	0	0	0
Injury	0	0	0	0
PDO	1			
Total	1			

	PDO	INJ	FAT	TOTAL
Units	2	0	0	2

LightCondition	Code	No.
DAYLIGHT	1	1
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		1

Weather	Code	No.
CLEAR	1	1
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1

TrafficWayType	Code	No.
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	0
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	0
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	0
UNKNOWN	99	1
Check Total		1

Weekday	Code	No.
Sunday	1	0
Monday	2	0
Tuesday	3	0
Wednesday	4	0
Thursday	5	1
Friday	6	0
Saturday	7	0
Check Total		1

Circumstances

Intersection Related?	1
Hit & Run?	1

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	1
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		1

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	0
LEFT_TURN	3	0
REAR_END	4	0
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	1
UNKNOWN	99	0
Check Total		1

TraveDirection		
1	NORTH	N
2	SOUTH	S
3	EAST	E
4	WEST	W
5	NORTHWEST	NW
6	NORTHEAST	NE
7	SOUTHWEST	SW
8	SOUTHEAST	SE
99	UNKNOWN	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	1
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		1

Month	Code	No.
January	1	0
February	2	0
March	3	0
April	4	0
May	5	0
June	6	0
July	7	0
August	8	0
September	9	1
October	10	0
November	11	0
December	12	0
Total		1

(Unit) SurfaceCondition	Code	No.
DRY	1	2
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		2

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->							<-DATE & TIME->		<---------- UNITS ---------->																			<---------- PERSON ---------->								<------- SEVERITY ------->							<----- GENERAL ----->							
INCIDNT	ON STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D W	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	FATALITIES MOT	FATALITIES NON	TTL	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2766120	Lincoln Dr			P	0	Mockingbird Ln	719	719	130926	14:30	5	2	1	1	##	##	1	1	99	0	1	1	W	E	10	3	3	0	4	1	1	99	-1	97	0	0	255	1		0		0		Y	1	1	2	99	16	97
																													1		1		1		0															

CRASH STATISTICS

2012

Mockingbird Lane, Lincoln Drove to Indian Bend Road

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	1	2	2	0
Severity				
Fatal	0	0	0	0
Injury	0	0	0	0
PDO	1			
Total	1			

	PDO	INJ	FAT	TOTAL
Units	2	0	0	2

	Code	No.
LightCondition		
DAYLIGHT	1	0
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	1
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		1
Weather		
CLEAR	1	0
CLOUDY	2	1
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1
TrafficWayType		
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	1
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	0
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	0
UNKNOWN	99	0
Check Total		1
Weekday		
Sunday	1	0
Monday	2	0
Tuesday	3	0
Wednesday	4	0
Thursday	5	1
Friday	6	0
Saturday	7	0
Check Total		1

Circumstances

Intersection Related?	0
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	0
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	1
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		1

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	1
LEFT_TURN	3	0
REAR_END	4	0
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1

TravelDirection		
1	NORTH	N
2	SOUTH	S
3	EAST	E
4	WEST	W
5	NORTHWEST	NW
6	NORTHEAST	NE
7	SOUTHWEST	SW
8	SOUTHEAST	SE
99	UNKNOWN	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	1
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		1

Month	Code	No.
January	1	0
February	2	0
March	3	0
April	4	0
May	5	0
June	6	0
July	7	0
August	8	1
September	9	0
October	10	0
November	11	0
December	12	0
Total		1

(Unit) SurfaceCondition		
DRY	1	2
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		2

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->							<-DATE & TIME->		<---------- UNITS ---------->																			<---------- PERSON ---------->									<------- SEVERITY ------->						<----- GENERAL ----->						
INCIDNT	ON STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D W	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	TN D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	MOT	NON	FATALITIES TTL	MOT	NON	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2647424	Mockingbird Ln			M	460	Indian Bend Rd	719	719	120823	20:55	5	2	1	1	1	1	1	1	0	0	1	1	N	W	1	4	2	0	1	1	1	1	103	1	0	0	255	1		0		0			N	5	2	7	2	16	2

CRASH STATISTICS

2013

Mockingbird Lane, Lincoln Drive to Indian Bend Road

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	1	2	2	0
Severity				
Fatal	0	0	0	0
Injury	1	1	1	0
PDO	0			
Total	1			

	PDO	INJ	FAT	TOTAL
Units	0	2	0	2

	Code	No.
LightCondition		
DAYLIGHT	1	1
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		1
Weather		
CLEAR	1	1
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1
TrafficWayType		
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	1
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	0
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	0
UNKNOWN	99	0
Check Total		1
Weekday		
Sunday	1	1
Monday	2	0
Tuesday	3	0
Wednesday	4	0
Thursday	5	0
Friday	6	0
Saturday	7	0
Check Total		1

Circumstances

Intersection Related?	1
Hit & Run?	1

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	1
INTERSECTION_RELATED_NON_INTERCHANGE	2	0
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		1

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	1
LEFT_TURN	3	0
REAR_END	4	0
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1

TravelDirection		
1	NORTH	N
2	SOUTH	S
3	EAST	E
4	WEST	W
5	NORTHWEST	NW
6	NORTHEAST	NE
7	SOUTHWEST	SW
8	SOUTHEAST	SE
99	UNKNOWN	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	1
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		1

Month	Code	No.
January	1	0
February	2	0
March	3	0
April	4	0
May	5	0
June	6	0
July	7	0
August	8	0
September	9	1
October	10	0
November	11	0
December	12	0
Total		1

(Unit) SurfaceCondition		
DRY	1	2
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		2

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->							<-DATE & TIME->		<---------- UNITS ---------->																			<---------- PERSON ---------->									<------- SEVERITY ------->							<----- GENERAL ----->							
INCIDNT	ON STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D W	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	INJURIES MOT	INJURIES NON	FATALITIES TTL	FATALITIES MOT	FATALITIES NON	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2766113	Mockingbird Ln			P	0	Indian Bend Rd	719	719	130929	14:02	1	2	1	1	1	1	1	1	0	99	1	1	S	W	4	1	2	0	1	1	99	3	5	1	0	0	255	1		1	1	0	0				Y	1	1	1	2	16	2

CRASH STATISTICS **Scottsdale Road at Indian Bend Road**

2012

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	10	20	26	0
Severity				
Fatal	0	0	0	0
Injury	2	2	2	0
PDO	8			
Total	10			

	PDO	INJ	FAT	TOTAL
Units	16	4	0	20

LightCondition	Code	No.
DAYLIGHT	1	9
DAWN	2	0
DUSK	3	1
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		10

Weather		
CLEAR	1	10
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		10

TrafficWayType		
ONE_WAY_TRAFFICWAY	1	1
TWO_WAY_NOT_DIVIDED	2	0
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	1
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	8
UNKNOWN	99	0
Check Total		10

Weekday		
Sunday	1	1
Monday	2	0
Tuesday	3	1
Wednesday	4	3
Thursday	5	0
Friday	6	3
Saturday	7	2
Check Total		10

Circumstances

Intersection Related?	10
Hit & Run?	1

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	10
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		10

CollisionManner		
SINGLE_VEHICLE	1	1
ANGLE (front to side)(other than left turn)	2	0
LEFT_TURN	3	0
REAR_END	4	8
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	1
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		10

TravelDirection		
1 NORTH	N	
2 SOUTH	S	
3 EAST	E	
4 WEST	W	
5 NORTHWEST	NW	
6 NORTHEAST	NE	
7 SOUTHWEST	SW	
8 SOUTHEAST	SE	
99 UNKNOWN	99	

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	9
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	1
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		10

Month	Code	No.
January	1	1
February	2	0
March	3	2
April	4	3
May	5	1
June	6	1
July	7	0
August	8	0
September	9	0
October	10	1
November	11	1
December	12	0
Total		10

(Unit) SurfaceCondition		
DRY	1	20
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		20

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->							<-DATE & TIME->		<---------- UNITS ---------->														<---------- PERSON ---------->											<------- SEVERITY ------->					<----- GENERAL ----->							
INCIDNT	ON STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D W	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	MOT	NON	FATALITIES TTL	MOT	NON	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2618389	Scottsdale Rd			M	70	Indian Bend Rd	725	725	120313	17:42	3	2	1	1	1	1	1	1	0	0	1	1	N	N	1	2	2	0	1	1	3	1	1	16	0	0	255	1		1	1	0	0			Y	1	1	2	5	16	4
2618461	Scottsdale Rd			P	30	Indian Bend Rd	719	725	120302	16:09	6	2	1	1	1	1	1	1	0	0	1	1	S	S	3	1	2	0	1	1	1	1	1	16	0	0	255	1			0		0			N	1	1	2	5	16	4
2621462	Scottsdale Rd			P	35	Indian Bend Rd	719	725	120404	17:20	4	2	1	1	1	1	1	1	0	0	1	1	S	S	3	1	2	0	1		1		1		0			1		0		0			N	1	1	2	5	16	4
2621483	Indian Bend Rd			P	25	Scottsdale Rd	725	725	120407	18:25	7	2	1	1	1	1	1	1	0	-1	1	1	W	W	3	4	2	0	1		1		2		0			1		0		0			N	3	1	2	4	16	4
2621486	Scottsdale Rd			M	25	Indian Bend Rd	719	725	120407	17:30	7	2	1	1	1	1	1	1	0	0	1	1	N	N	3	1	4	0	1		1		2		0			1		0		0			N	1	1	2	5	16	4
2633146	Scottsdale Rd			M	250	Scottsdale Rd	725	725	120125	14:37	4	2	1	1	2	2	1	1	0	0	1	1	NE	NE	1	3	3	0	1	4	1	1	1	-1	0	0	255	1			0		0			N	1	1	2	5	16	4
2636324	Scottsdale Rd			M	200	Indian Bend Rd	725	725	120617	11:40	1	2	1	1	1	1	1	1	99	99	1	1	N	N	1	8	3	0	1	4	1	2	12	-1	0	0	255		1	1	1	0	0			N	1	1	2	5	16	6
2649830	Indian Bend Rd			M	1056	Scottsdale Rd	719	719	120511	07:42	6	1	1		2		1		0		1		W		9		1	0	1		1		13		0			1		0		0			N	1	1	2	1	33	1
2689337	Scottsdale Rd			P	1320	Indian Bend Rd	725	725	121024	16:03	4	2	1	1	1	1	1	1	0	0	1	1	N	N	2	8	3	0	1	4	1	1	16	-1	0	0	255	1			0		0			N	1	1	2	5	16	4
2692928	Scottsdale Rd			P	1320	Indian Bend Rd	725	725	121102	16:03	6	3	1	1	1	1	1	1	0	0	1	1	S	S	3	2	4	0	1	1	1	1	1	2	0	0	255	1			0		0			N	1	1	2	5	16	4
													1		1		1		0		1		S		3				1	4	1	1	2	-1	0	0	255																

CRASH STATISTICS **Scottsdale Road at Indian Bend Road**

2013

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	9	23	26	1
Severity				
Fatal	0	0	0	0
Injury	4	6	5	1
PDO	5			
Total	9			

	PDO	INJ	FAT	TOTAL
Units	11	12	0	23

LightCondition	Code	No.
DAYLIGHT	1	8
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	1
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		9

Weather		
CLEAR	1	7
CLOUDY	2	1
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	1
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		9

TrafficWayType		
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	0
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	3
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	6
UNKNOWN	99	0
Check Total		9

Weekday		
Sunday	1	0
Monday	2	0
Tuesday	3	1
Wednesday	4	3
Thursday	5	1
Friday	6	4
Saturday	7	0
Check Total		9

Circumstances

Intersection Related?	9
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	9
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		9

CollisionManner		
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	1
LEFT_TURN	3	0
REAR_END	4	7
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	1
UNKNOWN	99	0
Check Total		9

TravelDirection		
1 NORTH	N	
2 SOUTH	S	
3 EAST	E	
4 WEST	W	
5 NORTHWEST	NW	
6 NORTHEAST	NE	
7 SOUTHWEST	SW	
8 SOUTHEAST	SE	
99 UNKNOWN	99	

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	8
PEDESTRIAN	17	1
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		9

Month	Code	No.
January	1	2
February	2	1
March	3	0
April	4	1
May	5	1
June	6	0
July	7	2
August	8	0
September	9	0
October	10	0
November	11	2
December	12	0
Total		9

(Unit) SurfaceCondition		
DRY	1	21
WET	2	2
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		23

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->							<-DATE & TIME->		<---------- UNITS ---------->														<---------- PERSON ---------->											<------- SEVERITY ------->						<----- GENERAL ----->						
INCIDNT	ON STREET	MP	OFF-SET	DIR	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	DW	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	INJURIES FAT	TTL	MOT	NON	FATALITIES TTL	MOT	NON	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2698813	Scottsdale Rd			P	50	Indian Bend Rd	725	725	130102	13:03	4	3	1	1	1	1	1	1	0	0	1	1	N	N	1	1	5	0	1	4	2	1	16	-1	0	0	255	1		2	2	0	0				N	1	1	2	5	16	4
													1		1		1		0		1		N		1				1	4	1	1	1	-1	0	0	255																
																													1		2		1		0																		
2699155	Scottsdale Rd			P	97	Indian Bend Rd	725	725	130104	14:36	6	2	1	1	1	1	1	1	0	0	1	1	S	S	3	1	2	0	1	1	1	1	2	1	0	0	255	1		0			0			N	1	1	2	4	16	4
2714548	Scottsdale Rd			P	800	Indian Bend Rd	725	725	130221	12:41	5	3	1	1	1	1	1	1	0	0	1	1	S	S	2	3	3	0	1	1	3	2	2	1	0	0	255		1	2	2	0	0				N	1	1	2	5	16	4
													1		1		1		0		1		S		2				1		1		1		0																		
2739153	Scottsdale Rd			P	128	Indian Bend Rd	719	725	130424	16:50	4	3	1	1	1	1	1	1	0	0	1	1	S	S	1	3	3	0	1	1	1	1	1	1	0	0	255	1		0			0			N	1	1	2	5	16	4
													1		1		1		0		1		S		3				1		1		2		0																		
2754673	Indian Bend Rd			P	0	Scottsdale Rd	725	725	130531	14:25	6	4	1	1	1	1	1	1	0	0	1	1	E	S	3	1	5	0	1	1	2	1	6	1	0	0	255		1	1	1	0	0				N	1	1	2	4	16	2
													1	1	1	1	1	1	99	0	1	1	W	E	1	3		4	1	1	1	1	-1	1	0	0	255																		
																													1		1		1		0																		
2761932	Scottsdale Rd			P	39	Indian Bend Rd	725	725	130712	10:20	6	2	1	1	1	1	1	1	0	0	1	1	S	S	1	3	2	0	1	1	1	1	1	2	0	0	255	1		0			0			N	1	2	2	4	16	4
2769399	Lincoln Dr			M	42	Scottsdale Rd	725	725	130730	07:06	3	2	1	1	1	1	1	1	0	0	1	1	E	E	3	2	2	0	1	1	1	1	1	2	0	0	255	1		0			0			N	1	1	2	5	16	4
2805071	Scottsdale Rd			P	30	Indian Bend Rd	725	725	131122	12:45	6	2	2	2	1	1	1	1	0	0	1	1	S	S	3	1	3	0	1	4	1	1	2	-1	0	0	255	1		0			0			N	1	4	2	5	16	4
2805088	Scottsdale Rd			M	3	Indian Bend Rd	725	725	131113	18:15	4	2	1	1	1	1	1	1	-1	0	2	1	W	S	17	1	1	1	1	2	1	3	1	6	0	0	1		1	1	0	1	0			N	4	1	2	5	17	97

CRASH STATISTICS **Scottsdale Road at Indian Bend Road**

2014

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	2	8	13	0
Severity				
Fatal	0	0	0	0
Injury	0	0	0	0
PDO	2			
Total	2			

	PDO	INJ	FAT	TOTAL
Units	8	0	0	8

LightCondition	Code	No.
DAYLIGHT	1	2
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		2

Weather		
CLEAR	1	2
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		2

TrafficWayType		
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	0
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	1
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	1
UNKNOWN	99	0
Check Total		2

Weekday		
Sunday	1	1
Monday	2	0
Tuesday	3	0
Wednesday	4	0
Thursday	5	1
Friday	6	0
Saturday	7	0
Check Total		2

Circumstances

Intersection Related?	2
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	2
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		2

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	0
LEFT_TURN	3	0
REAR_END	4	2
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		2

TravelDirection		
1 NORTH	N	
2 SOUTH	S	
3 EAST	E	
4 WEST	W	
5 NORTHWEST	NW	
6 NORTHEAST	NE	
7 SOUTHWEST	SW	
8 SOUTHEAST	SE	
99 UNKNOWN	99	

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	2
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		2

Month	Code	No.
January	1	1
February	2	0
March	3	0
April	4	1
May	5	0
June	6	0
July	7	0
August	8	0
September	9	0
October	10	0
November	11	0
December	12	0
Total		2

(Unit) SurfaceCondition		
DRY	1	8
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		8

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->								<-DATE & TIME->		<---------- UNITS ---------->																<---------- PERSON ---------->										<------- SEVERITY ------->						<----- GENERAL ----->						
INCIDNT	ON STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D W	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	FATALITIES MOT	NON	TTL	NON R	H CN	LT CN	WE REL	JCT CWY	TRF CD	HE C	M
2818095	Scottsdale Rd			P	140	Indian Bend Rd	719	725	140102	09:10	5	5	1	1	1	1	1	1	0	0	1	1	N	N	3	1	6	0	1	4	1	1	1	-1	0	0	255	1		0		0		N	1	1	2	5	16	4	
													1	1	1	1	1	1	0	0	1	1	N	N	3	3			1	1	1	1	1	2	0	0	255															
													1		1		1		0		1		N		3				1	1	1	1	1	1	0	0	255															
2848687	Scottsdale Rd			P	210	Indian Bend Rd	719	725	140413	12:11	1	3	1	1	1	1	1	1	0	0	1	1	N	N	3	1	7	0	4	1	1	1	-1	1	0	0	255	1		0		0		N	1	1	2	4	16	4	
													1		1		1		0		1		N		3				4	1	1	1	-1	1	0	0	255															
																													4	1	1	1	-1	2	0	0	255															
																													4		1		-1		0																	

CRASH STATISTICS **Scottsdale Road at Joshua Tree Lane**

2013

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	1	2	2	0
Severity				
Fatal	0	0	0	0
Injury	0	0	0	0
PDO	1			
Total	1			

	PDO	INJ	FAT	TOTAL
Units	2	0	0	2

LightCondition	Code	No.
DAYLIGHT	1	1
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		1

Weather		
CLEAR	1	1
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1

TrafficWayType		
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	0
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	0
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	1
UNKNOWN	99	0
Check Total		1

Weekday		
Sunday	1	0
Monday	2	0
Tuesday	3	0
Wednesday	4	1
Thursday	5	0
Friday	6	0
Saturday	7	0
Check Total		1

	Circumstances
Intersection Related?	1
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	1
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		1

CollisionManner		
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	0
LEFT_TURN	3	0
REAR_END	4	1
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		1

TravelDirection		
1 NORTH	N	
2 SOUTH	S	
3 EAST	E	
4 WEST	W	
5 NORTHWEST	NW	
6 NORTHEAST	NE	
7 SOUTHWEST	SW	
8 SOUTHEAST	SE	
99 UNKNOWN	99	

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	1
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		1

Month	Code	No.
January	1	0
February	2	0
March	3	0
April	4	0
May	5	0
June	6	0
July	7	0
August	8	0
September	9	0
October	10	1
November	11	0
December	12	0
Total		1

(Unit) SurfaceCondition		
DRY	1	2
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		2

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->								<-DATE & TIME->		<---------- UNITS ---------->														<---------- PERSON ---------->										<------- SEVERITY ------->						<----- GENERAL ----->						
INCIDNT	ON STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D W	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	TN D1	TN D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	FATALITIES MOT	FATALITIES NON	TTL	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2800390	Scottsdale Rd			M	144	Joshua Tree Ln	725	725	131002	07:37	4	2	1	1	1	1	1	1	0	0	1	1	N	N	2	1	2	0	1	1	1	1	2	1	0	0	255	1		0		0			N	1	1	2	5	16	4

CRASH STATISTICS **Scottsdale Road at Lincoln Drive**

2012

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	7	14	14	0
Severity				
Fatal	0	0	0	0
Injury	1	1	1	0
PDO	6			
Total	7			

	PDO	INJ	FAT	TOTAL
Units	12	2	0	14

LightCondition	Code	No.
DAYLIGHT	1	4
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	3
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		7

Weather	Code	No.
CLEAR	1	5
CLOUDY	2	1
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	1
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		7

TrafficWayType	Code	No.
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	1
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	1
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	1
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	4
UNKNOWN	99	0
Check Total		7

Weekday	Code	No.
Sunday	1	2
Monday	2	1
Tuesday	3	0
Wednesday	4	1
Thursday	5	1
Friday	6	1
Saturday	7	1
Check Total		7

Circumstances

Intersection Related?	7
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	7
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		7

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	1
LEFT_TURN	3	1
REAR_END	4	5
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		7

TravelDirection	Code	
NORTH	1	N
SOUTH	2	S
EAST	3	E
WEST	4	W
NORTHWEST	5	NW
NORTHEAST	6	NE
SOUTHWEST	7	SW
SOUTHEAST	8	SE
UNKNOWN	99	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	7
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		7

Month	Code	No.
January	1	2
February	2	0
March	3	0
April	4	1
May	5	1
June	6	1
July	7	0
August	8	0
September	9	0
October	10	1
November	11	1
December	12	0
Total		7

(Unit) SurfaceCondition	Code	No.
DRY	1	14
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		14

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->								<-DATE & TIME->		<---------- UNITS ---------->														<---------- PERSON ---------->										<------- SEVERITY ------->							<----- GENERAL ---->							
INCIDNT	ON STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D W	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	INJURIES MOT	INJURIES NON	FATALITIES TTL	FATALITIES MOT	FATALITIES NON	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2608447	Lincoln Dr			M	440	Scottsdale Rd	725	725	120118	18:22	4	2	1	1	1	1	1	1	0	0	1	1	E	E	1	3	2	0	1	1	1	1	16	1	0	0	255	1			0			0			N	4	1	2	4	16	4
2616355	Scottsdale Rd			M	63	Lincoln Dr	725	725	120120	08:17	6	2	1	1	1	1	1	1	0	0	1	1	N	N	3	1	2	0	1	1	1	2	2	1	0	0	255		1		1	1	0	0			N	1	1	2	2	16	4
2625701	Lincoln Dr			M	10	Scottsdale Rd	725	719	120426	09:10	5	2	1	1	1	1	1	1	0	0	1	1	NW	W	4	1	2	0	1	1	1	1	1	103	0	0	255	1			0			0			N	1	2	2	3	16	3
2636321	Lincoln Dr			P	0	Scottsdale Rd	725	725	120617	12:28	1	2	1	1	1	1	1	1	0	0	1	1	E	E	1	1	2	0	1	1	1	1	1	16	0	0	255	1			0			0			N	4	7	2	5	16	4
2644797	Lincoln Dr			P	0	Scottsdale Rd	725	725	120519	17:35	7	2	1	1	1	1	1	1	97	0	1	1	S	W	1	4	2	0	1	1	1	1	6	1	0	0	255	1			0			0			N	1	1	2	5	16	2
2685054	Scottsdale Rd			M	100	Lincoln Dr	725	725	121008	09:42	2	2	1	1	1	1	1	1	97	0	1	1	N	N	1	3	2	0	1	1	1	1	1	16	0	0	255	1			0			0			N	1	1	2	5	16	4
2695070	Scottsdale Rd			M	20	Lincoln Dr	725	725	121104	23:09	1	2	1	1	1	1	1	1	0	0	1	1	N	S	3	10	2	0	1	1	1	1	16	1	0	0	255	1			0			0			N	4	1	2	5	16	4

CRASH STATISTICS **Scootsdale Road at Lincoln Drive**

2013

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	7	14	17	0
Severity				
Fatal	0	0	0	0
Injury	2	2	2	0
PDO	5			
Total	7			

	PDO	INJ	FAT	TOTAL
Units	10	4	0	14

LightCondition	Code	No.
DAYLIGHT	1	7
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	0
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		7

Weather	Code	No.
CLEAR	1	7
CLOUDY	2	0
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		7

TrafficWayType	Code	No.
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	0
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	2
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	0
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	5
UNKNOWN	99	0
Check Total		7

Weekday	Code	No.
Sunday	1	0
Monday	2	1
Tuesday	3	1
Wednesday	4	2
Thursday	5	2
Friday	6	1
Saturday	7	0
Check Total		7

Circumstances

Intersection Related?	7
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	7
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		7

CollisionManner	Code	No.
SINGLE_VEHICLE	1	1
ANGLE (front to side)(other than left turn)	2	1
LEFT_TURN	3	1
REAR_END	4	4
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		7

TravelDirection		
1	NORTH	N
2	SOUTH	S
3	EAST	E
4	WEST	W
5	NORTHWEST	NW
6	NORTHEAST	NE
7	SOUTHWEST	SW
8	SOUTHEAST	SE
99	UNKNOWN	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	6
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	1
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		7

Month	Code	No.
January	1	1
February	2	2
March	3	3
April	4	1
May	5	0
June	6	0
July	7	0
August	8	0
September	9	0
October	10	0
November	11	0
December	12	0
Total		7

(Unit) SurfaceCondition		
DRY	1	14
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		14

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->								<-DATE & TIME->		<---------- UNITS ---------->																<---------- PERSON ---------->										<------- SEVERITY ------->						<----- GENERAL ----->							
INCIDNT	ON STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D W	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	TN D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	MOT	NON	FATALITIES TTL	MOT	NON	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2701264	Lincoln Dr			M	54	Scottsdale Rd	725	725	130131	12:42	5	1	1		1		1		97		1		NE		4		1	0	1		1		16		0			1			0			0			N	1	1	2	5	44	1
2708796	Lincoln Dr			M	350	Scottsdale Rd	725	725	130313	16:10	4	3	1	1	1	1	1	1	0	0	1	1	S	E	4	2	3	0	1	1	1	1	1	1	0	0	255	1			0			0			N	1	1	2	5	16	2
													1		1		1		0		1		E		3				1		1		97		0	255																
2711103	Lincoln Dr			P	0	Scottsdale Rd	725	725	130205	13:32	3	2	1	1	1	1	1	1	0	0	1	1	NW	S	4	1	4	0	4	1	1	1	-1	6	0	0	255	1			0			0			N	1	1	2	5	16	3
2712728	Lincoln Dr			M	100	Scottsdale Rd	725	725	130213	09:35	4	2	1	1	1	1	1	1	0	0	1	1	E	E	3	1	2	0	1	1	1	1	1	2	0	0	255	1			0			0			N	1	1	2	5	16	4
2722542	Scottsdale Rd			M	50	Lincoln Dr	725	725	130329	12:07	6	2	1	1	1	1	1	1	0	0	1	1	S	S	2	3	2	0	1	1	1	1	2	1	0	0	255	1			0			0			N	1	1	2	5	16	4
2723384	Lincoln Dr			M	550	Scottsdale Rd	725	725	130401	16:38	2	2	1	1	1	1	1	1	99	0	1	1	E	E	1	2	2	0	1	1	3	1	1	4	0	0	255		1		1	1	0	0			N	1	1	2	3	16	4
2725951	Lincoln Dr			M	600	Scottsdale Rd	725	719	130314	17:48	5	2	1	1	1	1	1	1	0	0	1	1	E	E	1	3	3	0	4	1	1	1	-1	1	0	0	255		1		1	1	0	0			N	1	1	2	3	16	4

CRASH STATISTICS **Tatum Boulevard at Lincoln Drive**

2012

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	6	14	15	0
Severity				
Fatal	0	0	0	0
Injury	1	1	1	0
PDO	5			
Total	6			

	PDO	INJ	FAT	TOTAL
Units	12	2	0	14

LightCondition	Code	No.
DAYLIGHT	1	3
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	3
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		6

Weather	Code	No.
CLEAR	1	5
CLOUDY	2	1
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		6

TrafficWayType	Code	No.
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	2
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	1
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	0
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	3
UNKNOWN	99	0
Check Total		6

Weekday	Code	No.
Sunday	1	1
Monday	2	2
Tuesday	3	0
Wednesday	4	0
Thursday	5	2
Friday	6	1
Saturday	7	0
Check Total		6

Circumstances

Intersection Related?	6
Hit & Run?	0

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	6
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		6

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	0
LEFT_TURN	3	0
REAR_END	4	6
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		6

TravelDirection		
1	NORTH	N
2	SOUTH	S
3	EAST	E
4	WEST	W
5	NORTHWEST	NW
6	NORTHEAST	NE
7	SOUTHWEST	SW
8	SOUTHEAST	SE
99	UNKNOWN	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	6
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		6

Month	Code	No.
January	1	0
February	2	2
March	3	1
April	4	0
May	5	0
June	6	0
July	7	0
August	8	1
September	9	0
October	10	1
November	11	1
December	12	0
Total		6

(Unit) SurfaceCondition	Code	No.
DRY	1	13
WET	2	0
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	1
Total		14

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->							<-DATE & TIME->		<---------- UNITS ---------->																		<---------- PERSON ---------->												<------- SEVERITY ------->						<----- GENERAL ----->							
INCIDNT	ON STREET	MP	OFF-SET	DIR	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	DW	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INJ	FAT	INJURIES TTL	MOT	NON	FATALITIES TTL	MOT	NON	H R	LT CN	WE CN	JCT REL	TRF CWY	HE CD	M C
2603383	Lincoln Dr			P	20	Tatum Blvd	719	719	120217	21:07	6	2	1	1	1	1	1	1	0	0	1	1	W	W	3	1	2	0	1		1		16		0				1		1	1	0	0			N	4	1	2	2	16	4
2603399	Tatum Blvd			M	39	Lincoln Dr	719	719	120205	20:43	1	2	1	1	1	1	1	1	0	0	1	1	N	N	1	1	3	0	4	1	1	1	-1	4	0	0	255	1		0			0			N	4	1	2	5	16	4
2610820	Lincoln Dr			P	10	Tatum Blvd	719	719	120315	18:03	5	2	1	1	1	1	1	1	0	-1	1	1	W	W	3	1	2	0	1	1	1	1	16	1	0	0	255	1		0			0			N	1	1	2	3	16	4
2647416	Tatum Blvd			M	25	Lincoln Dr	719	719	120806	09:45	2	2	1	1	1	1	1	1	0	0	1	1	N	N	1	3	2	0	1	1	1	1	1	16	0	0	255	1		0			0			N	1	1	2	5	16	4
2677004	Lincoln Dr			P	20	Tatum Blvd	719	719	121001	16:16	2	2	1	1	1	1	1	1	0	-1	1	1	W	W	3	1	2	0	1	1	1	1	16	1	0	0	255	1		0			0			N	1	1	2	5	16	4
2678185	Tatum Blvd			P	20	Lincoln Dr	719	719	121115	17:55	5	4	1	1	1	1	2	1	0	99	1	1	S	S	1	3	4	0	1	1	1	1	1	1	0	0	255	1		0			0			N	4	2	2	2	16	4
													99	1	##	1	99	1	99	0	1	1	99	S	99	3		1	1	1	99	4	99	0	0	255																		

CRASH STATISTICS **Tatum Boulevard at Lincoln Drive**

2013

Involvement

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	8	16	26	0
Severity				
Fatal	0	0	0	0
Injury	4	7	7	0
PDO	4			
Total	8			

	PDO	INJ	FAT	TOTAL
Units	8	8	0	16

LightCondition	Code	No.
DAYLIGHT	1	4
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	4
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		8

Weather		
CLEAR	1	7
CLOUDY	2	1
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		8

TrafficWayType		
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	0
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	2
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	4
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	2
UNKNOWN	99	0
Check Total		8

Weekday		
Sunday	1	1
Monday	2	1
Tuesday	3	1
Wednesday	4	1
Thursday	5	2
Friday	6	2
Saturday	7	0
Check Total		8

Circumstances

Intersection Related?	8
Hit & Run?	2

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	8
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	0
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		8

CollisionManner		
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	3
LEFT_TURN	3	0
REAR_END	4	5
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	0
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		8

TravelDirection		
1 NORTH	N	
2 SOUTH	S	
3 EAST	E	
4 WEST	W	
5 NORTHWEST	NW	
6 NORTHEAST	NE	
7 SOUTHWEST	SW	
8 SOUTHEAST	SE	
99 UNKNOWN	99	

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	8
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		8

Month	Code	No.
January	1	0
February	2	1
March	3	0
April	4	0
May	5	0
June	6	2
July	7	1
August	8	0
September	9	0
October	10	1
November	11	0
December	12	3
Total		8

(Unit) SurfaceCondition		
DRY	1	14
WET	2	2
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		16

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->								<-DATE & TIME->		<---------- UNITS ---------->																				<---------- PERSON ---------->										<------- SEVERITY ------->						<----- GENERAL ----->							
INCIDNT	ON STREET	MP	OFF-SET	DIR	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	DW	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INCIDENTS INJ	INCIDENTS FAT	INJURIES TTL	INJURIES MOT	INJURIES NON	FATALITIES TTL	FATALITIES MOT	FATALITIES NON	HR	LT CN	WE CN	JCT REL	TRF CWY	HE CD	MC
2708423	Lincoln Dr			P	0	Tatum Blvd	719	719	130228	07:39	5	2	1	1	1	1	1	1	0	0	1	1	E	E	1	5	4	0	1	4	1	1	103	-1	0	0	255	1		0		0				N	1	1	2	5	16	2
2743897	Lincoln Dr			M	75	Tatum Blvd	719	719	130605	07:27	4	2	1	1	1	1	1	1	0	0	1	1	E	E	2	1	2	0	1		3		1		0				1		1	1	0	0		N	1	1	2	4	16	4
																														1		1		4		0	255																
2743898	Lincoln Dr			M	45	Tatum Blvd	719	719	130607	20:27	6	2	1	1	1	1	1	1	0	0	1	1	E	E	2	3	3	0	1	1	2	2	1	6	0	0	255		1	3	3	0	0		N	4	1	2	3	16	4
																														4		2		-1		0	255																
2759102	Lincoln Dr			M	60	Tatum Blvd	719	719	130722	07:55	2	2	1	1	1	1	1	1	0	0	1	1	E	E	4	4	2	0	1	1	1	2	4	97	0	0	255		1	1	1	0	0		N	1	1	2	4	16	4
2776473	Tatum Blvd			P	25	Lincoln Dr	719	719	131027	20:46	1	2	1	1	1	1	2	1	0	0	1	1	S	S	1	3	4	0	4	4	2	1	-1	-1	0	0	255		1	2	2	0	0		N	4	1	2	5	16	4
																													1	1	1	2	6	1	0	0	255															
2792730	Lincoln Dr			M	50	Tatum Blvd	719	719	131217	18:44	3	2	1	1	1	1	1	1	0	0	1	1	E	E	3	1	4	0	1		1		1		0			1		0				N	4	1	2	3	16	4
																														4		1		-1		0	255																
2792739	Tatum Blvd			P	0	Lincoln Dr	719	719	131212	18:29	5	2	1	1	1	1	1	1	99	0	1	1	E	N	99	1	3	0	1		1		16		0			1		0				Y	4	1	2	4	16	2
2792758	Tatum Blvd			P	15	Lincoln Dr	719	719	131220	13:04	6	2	2	2	1	1	3	1	0	0	1	1	N	N	4	4	4	0	4		99		-1		0			1		0				Y	1	2	2	4	16	2
																													1		99		1		0																	

CRASH STATISTICS *Involvement*

2014

Tatum Boulevard at Lincoln Drive

	# Incidents	Totals	# Motorists	# Non-Motorists
Incidents	12	24	31	0
Severity				
Fatal	0	0	0	0
Injury	3	4	4	0
PDO	9			
Total	12			

	PDO	INJ	FAT	TOTAL
Units	18	6	0	24

LightCondition	Code	No.
DAYLIGHT	1	9
DAWN	2	0
DUSK	3	0
DARK_LIGHTED	4	3
DARK_NOT_LIGHTED	5	0
DARK_UNKNOWN_LIGHTING	6	0
UNKNOWN	99	0
Check Total		12

Weather	Code	No.
CLEAR	1	10
CLOUDY	2	2
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0
RAIN	4	0
SNOW	5	0
SEVERE_CROSSWINDS	6	0
BLOWING_SAND_SOIL_DIRT	7	0
FOG_SMOG_SMOKE	8	0
BLOWING_SNOW	9	0
OTHER	97	0
UNKNOWN	99	0
Check Total		12

TrafficWayType	Code	No.
ONE_WAY_TRAFFICWAY	1	0
TWO_WAY_NOT_DIVIDED	2	1
TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0
TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	1
TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER	5	8
UNKNOWN	99	2
Check Total		12

Weekday	Code	No.
Sunday	1	0
Monday	2	4
Tuesday	3	5
Wednesday	4	0
Thursday	5	1
Friday	6	0
Saturday	7	2
Check Total		12

Circumstances	
Intersection Related?	12
Hit & Run?	1

JunctionRelation	Code	No.
NOT_JUNCTION_RELATED	0	0
INTERSECTION_NON_INTERCHANGE	1	0
INTERSECTION_RELATED_NON_INTERCHANGE	2	11
ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	0
RAILWAY_GRADE_CROSSING	4	0
CROSSOVER_RELATED	5	0
FRONTAGE_ROAD_NON_INTERCHANGE	6	0
DRIVEWAY	7	0
ALLEY_ACCESS_RELATED	8	0
UNKNOWN_NON_INTERCHANGE	9	0
THRU_ROADWAY	10	0
INTERSECTION_INTERCHANGE	11	0
INTERSECTION_RELATED_INTERCHANGE	12	1
ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0
FRONTAGE_ROAD_INTERCHANGE	14	0
OTHER_PART_OF_INTERCHANGE	15	0
UNKNOWN_INTERCHANGE	17	0
UNKNOWN_JUNCTION	18	0
UNKNOWN	99	0
OTHER_NON_INTERCHANGE	109	0
Check Total		12

CollisionManner	Code	No.
SINGLE_VEHICLE	1	0
ANGLE (front to side)(other than left turn)	2	2
LEFT_TURN	3	0
REAR_END	4	8
HEAD_ON	5	0
SIDESWIPE_SAME_DIRECTION	6	1
SIDESWIPE_OPPOSITE_DIRECTION	7	0
REAR_TO_SIDE	8	0
REAR_TO_REAR	9	0
OTHER	97	0
UNKNOWN	99	1
Check Total		12

TraveDirection		
1	NORTH	N
2	SOUTH	S
3	EAST	E
4	WEST	W
5	NORTHWEST	NW
6	NORTHEAST	NE
7	SOUTHWEST	SW
8	SOUTHEAST	SE
99	UNKNOWN	99

First Harmful Event	Code	No.
OVERTURN_ROLLOVER	1	0
FIRE_EXPLOSION	2	0
IMMERSION	3	0
JACKKNIFE	4	0
CARGO_EQUIPMENT_LOSS_SHIFT	5	0
FELL_JUMPED_FROM_VEHICLE	6	0
THROWN_OR_FALLING_OBJECT	7	0
OTHER_NON_COLLISION	8	0
EQUIPMENT_FAILURE ~~TIRES_BRAKES~~	9	0
SEPARATION_OF_UNITS	10	0
RAN_OFF_ROAD_RIGHT	11	0
RAN_OFF_ROAD_LEFT	12	0
CROSS_MEDIAN	13	0
CROSS_CENTERLINE	14	0
DOWNHILL_RUNAWAY	15	0
MOTOR_VEHICLE_IN_TRANSPORT	16	12
PEDESTRIAN	17	0
PEDALCYCLE	18	0
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0
ANIMAL_WILD_NON_GAME	21	0
ANIMAL_WILD_GAME	22	0
ANIMAL_PET	23	0
ANIMAL_LIVESTOCK	24	0
PARKED_MOTOR_VEHICLE	25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0
OTHER_NON_FIXED_OBJECT	28	0
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0
BRIDGE_OVERHEAD_STRUCTURE	30	0
BRIDGE_RAIL	31	0
CULVERT	32	0
CURB	33	0
DITCH	34	0
EMBANKMENT	35	0
GUARDRAIL_FACE	36	0
GUARDRAIL_END	37	0
CONCRETE_TRAFFIC_BARRIER	38	0
CABLE_TRAFFIC_BARRIER	39	0
OTHER_TRAFFIC_BARRIER	40	0
TREE_BUSH_STUMP_STANDING	41	0
TRAFFIC_SIGN_SUPPORT	42	0
TRAFFIC_SIGNAL_SUPPORT	43	0
UTILITY_POLE_LIGHT_SUPPORT	44	0
OTHER_POST_POLE_OR_SUPPORT	45	0
FENCE	46	0
MAILBOX	47	0
BUILDING	48	0
OTHER_FIXED_OBJECT	49	0
UNKNOWN	99	0
Not Reported	255	0
Check Total		12

Month	Code	No.
January	1	4
February	2	0
March	3	1
April	4	1
May	5	0
June	6	0
July	7	0
August	8	4
September	9	0
October	10	1
November	11	0
December	12	1
Total		12

(Unit) SurfaceCondition	Code	No.
DRY	1	22
WET	2	2
SNOW	3	0
SLUSH	4	0
ICE_FROST	5	0
WATER_STANDING_MOVING	6	0
SAND	7	0
MUD_DIRT_GRAVEL	8	0
OIL	9	0
OTHER	97	0
UNKNOWN	99	0
Total		24

PLACE HOLDER (clear fill before printing)

<---------- LOCATION ---------->								<-DATE & TIME->		<---------- UNITS ---------->																<---------- PERSON ---------->												<------- SEVERITY ------->						<----- GENERAL ---->						
INCIDNT	ON STREET	MP	OFF-SET	DIR	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	DW	TO-TAL	SRFCND U1	SRFCND U2	ALGMT 1	ALGMT 2	GRADE 1	GRADE 2	DFCTS U1	DFCTS U2	TYPE U1	TYPE U2	TRDR 1	TRDR 2	UACT U1	UACT U2	TTL MOT	TTL NON	TYP 1	TYP 2	INJR 1	INJR 2	VIOL D1	VIOL D2	TN D1	TN D2	PHSCND D1	PHSCND D2	NON LOC	INCIDENTS PDO	INCIDENTS INJ	INCIDENTS FAT	INJURIES TTL	INJURIES MOT	INJURIES NON	FATALITIES TTL	FATALITIES MOT	FATALITIES NON	HR	LT CN	WE CN	JCT REL	TRF CWY	HE CD	MC
2813338	Lincoln Dr			P	50	Tatum Blvd	719	719	140127	10:23	2	2	1	1	1	1	1	1	0	0	1	1	W	W	1	3	3	0	1		3		1		0			1		2	2	0	0		N	1	1	2	5	16	4
2813344	Tatum Blvd			P	30	Lincoln Dr	719	719	140128	14:30	3	2	1	1	1	1	1	1	0	0	1	1	N	N	3	1	2	0	1	1	1	1	16	1	0	0	255	1		0		0		N	1	1	2	99	16	4
2813388	Tatum Blvd			P	0	Lincoln Dr	719	719	140109	19:27	5	2	1	1	1	1	1	1	0	0	1	1	S	N	4	1	5	0	4		1		-1		0			1		0		0		N	4	1	12	5	16	2
																														1		1		99		0	255															
																														4		1		-1		0	255															
2813412	Lincoln Dr			M	50	Tatum Blvd	719	719	140113	15:02	2	2	1	1	1	1	1	1	0	0	1	1	W	W	1	1	2	0	1		1		1		0			1		0		0		N	1	1	2	5	16	4
2825434	Lincoln Dr			M	63	Tatum Blvd	719	719	140331	17:46	2	2	1	1	1	1	1	1	99	99	1	1	E	E	3	2	2	0	1	1	1	1	4	1	0	0	255	1		0		0		Y	1	1	2	5	16	4
2834429	Lincoln Dr			M	50	Tatum Blvd	719	719	140408	15:44	3	2	1	1	1	1	1	1	99	99	1	1	W	W	1	1	2	0	1	1	1	1	1	16	0	0	255	1		0		0		N	1	1	2	5	16	6
2871597	Lincoln Dr			P	30	Tatum Blvd	719	719	140819	18:58	3	2	1	1	1	1	1	1	0	99	1	1	W	W	3	1	2	0	1		1		1		0			1		0		0		N	1	2	2	5	16	4
2871608	Lincoln Dr			P	20	Tatum Blvd	719	719	140812	20:55	3	2	2	2	1	1	1	1	97	0	1	1	W	W	1	3	2	0	1		2		1		0				1	1	1	0	0		N	4	2	2	2	16	4
2871614	Tatum Blvd			M	50	Lincoln Dr	719	719	140825	08:27	2	2	1	1	1	1	1	1	0	0	1	1	N	N	3	1	2	0	1		3		1		0				1	1	1	0	0		N	1	1	2	99	16	99
2871619	Tatum Blvd			M	5	Lincoln Dr	719	719	140823	12:42	7	2	1	1	1	1	1	1	0	90	1	1	N	E	3	1	2	0	1		1		97		0			1		0		0		N	1	1	2	5	16	2
2887271	Tatum Blvd			P	0	Lincoln Dr	719	719	141025	18:15	7	2	1	1	1	1	1	1	0	99	1	1	W	W	3	1	4	0	1	4	1	1	2	-1	0	0	255	1		0		0		N	4	1	2	4	16	4
																													1	4	1	1	1	-1	0	0	255															
2911286	Tatum Blvd			P	30	Lincoln Dr	719	719	141223	11:31	3	2	1	1	1	1	1	1	0	-1	1	1	S	S	3	1	3	0	1	4	1	1	16	-1	0	0	255	1		0		0		N	1	1	2	5	16	4
																													1		1		1		0																		

APPENDIX D

EXISTING PEAK HOUR ANALYSIS

Lanes and Geometrics

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	0		0	75		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.853						0.895			0.992	
Flt Protected	0.950				0.957		0.950				0.999	
Satd. Flow (prot)	1770	1589	0	0	1783	0	1770	1667	0	0	1846	0
Flt Permitted	0.950				0.957		0.950				0.999	
Satd. Flow (perm)	1770	1589	0	0	1783	0	1770	1667	0	0	1846	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		803			802			5205			554	
Travel Time (s)		18.3			18.2			118.3			12.6	

Intersection Summary

Area Type: Other

HCM 2010 AWSC

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	6	283	0	33	4	0	0	123	12	28
Future Vol, veh/h	0	4	6	283	0	33	4	0	0	123	12	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	7	308	0	36	4	0	0	134	13	30
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	10.1	9.1	9.7
HCM LOS	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	89%	3%
Vol Thru, %	0%	30%	0%	2%	11%	91%
Vol Right, %	0%	70%	0%	98%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	40	4	289	37	32
LT Vol	123	0	4	0	33	1
Through Vol	0	12	0	6	4	29
RT Vol	0	28	0	283	0	2
Lane Flow Rate	134	43	4	314	40	35
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.22	0.059	0.007	0.391	0.063	0.054
Departure Headway (Hd)	5.911	4.914	5.678	4.486	5.671	5.604
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	606	726	631	801	630	636
Service Time	3.661	2.665	3.408	2.216	3.721	3.666
HCM Lane V/C Ratio	0.221	0.059	0.006	0.392	0.063	0.055
HCM Control Delay	10.3	8	8.4	10.1	9.1	9
HCM Lane LOS	B	A	A	B	A	A
HCM 95th-tile Q	0.8	0.2	0	1.9	0.2	0.2

HCM 2010 AWSC

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	29	2
Future Vol, veh/h	0	1	29	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	32	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9
HCM LOS	A

Lane

HCM 2010 TWSC

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Lanes and Geometrics

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	75	0		0	75	
Storage Lanes	1	1		0	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850	0.964			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1796	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1796	0	1770	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	1540		2640			5205
Travel Time (s)	35.0		60.0			118.3

Intersection Summary	
Area Type:	Other

HCM 2010 TWSC

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	107	34	212	76	58	354
Future Vol, veh/h	107	34	212	76	58	354
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	37	230	83	63	385

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	783	272	0	0	313	0
Stage 1	272	-	-	-	-	-
Stage 2	511	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	362	767	-	-	1247	-
Stage 1	774	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	344	767	-	-	1247	-
Mov Cap-2 Maneuver	450	-	-	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	572	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	450	767	1247	-
HCM Lane V/C Ratio	-	-	0.258	0.048	0.051	-
HCM Control Delay (s)	-	-	15.8	9.9	8	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1	0.2	0.2	-

Lanes and Geometrics

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.996		0.944	
Flt Protected		0.998			0.972	
Satd. Flow (prot)	0	1859	1855	0	1709	0
Flt Permitted		0.998			0.972	
Satd. Flow (perm)	0	1859	1855	0	1709	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		220	310		318	
Travel Time (s)		5.0	7.0		7.2	

Intersection Summary

Area Type: Other

HCM 2010 TWSC

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	5	122	142	5	6	5
Future Vol, veh/h	5	122	142	5	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	133	154	5	7	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	160	0	-	0	300	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	143	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1419	-	-	-	691	889
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	884	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1419	-	-	-	688	889
Mov Cap-2 Maneuver	-	-	-	-	871	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	880	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1419	-	-	-	879
HCM Lane V/C Ratio	0.004	-	-	-	0.014
HCM Control Delay (s)	7.5	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lanes and Geometrics

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		200	265		265	235		210	210		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	1863	1583	1770	5085	1583	1770	5075	0
Flt Permitted	0.950			0.950			0.086			0.151		
Satd. Flow (perm)	1770	1863	1583	3433	1863	1583	160	5085	1583	281	5075	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127			154			306		2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		310			1000			430			1000	
Travel Time (s)		7.0			22.7			9.8			22.7	

Intersection Summary

Area Type: Other

HCM 2010 Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	76	17	541	117	142	15	1189	369	148	1487	21
Future Volume (veh/h)	26	76	17	541	117	142	15	1189	369	148	1487	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	28	83	18	588	127	154	16	1292	401	161	1616	23
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	113	96	652	475	628	353	2076	946	360	2110	30
Arrive On Green	0.02	0.06	0.06	0.19	0.25	0.25	0.05	0.13	0.13	0.14	0.41	0.41
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	5085	1583	1774	5166	74
Grp Volume(v), veh/h	28	83	18	588	127	154	16	1292	401	161	1060	579
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1850
Q Serve(g_s), s	1.9	5.3	1.3	20.0	6.5	0.7	0.0	28.8	3.9	2.2	32.3	32.3
Cycle Q Clear(g_c), s	1.9	5.3	1.3	20.0	6.5	0.7	0.0	28.8	3.9	2.2	32.3	32.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	36	113	96	652	475	628	353	2076	946	360	1384	755
V/C Ratio(X)	0.78	0.73	0.19	0.90	0.27	0.25	0.05	0.62	0.42	0.45	0.77	0.77
Avail Cap(c_a), veh/h	177	155	132	803	475	628	353	2076	946	360	1384	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	55.4	53.5	47.5	35.7	14.2	36.6	43.2	22.4	41.4	30.6	30.6
Incr Delay (d2), s/veh	12.6	6.0	0.3	10.4	0.1	0.1	0.0	1.4	1.4	0.3	4.1	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.9	0.6	10.5	3.4	2.6	0.5	13.8	2.0	4.7	15.8	17.9
LnGrp Delay(d),s/veh	71.2	61.4	53.9	58.0	35.9	14.2	36.6	44.6	23.8	41.7	34.7	37.9
LnGrp LOS	E	E	D	E	D	B	D	D	C	D	C	D
Approach Vol, veh/h		129			869			1709			1800	
Approach Delay, s/veh		62.5			47.0			39.6			36.3	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	55.0	29.7	14.3	21.0	55.0	6.4	37.6
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 12	49.0	* 28	* 10	* 12	49.0	12.0	* 26
Max Q Clear Time (g_c+I1), s	4.2	30.8	22.0	7.3	2.0	34.3	3.9	8.5
Green Ext Time (p_c), s	0.0	2.0	0.7	0.0	0.1	2.3	0.0	1.4

Intersection Summary

HCM 2010 Ctrl Delay	40.4
HCM 2010 LOS	D

Notes

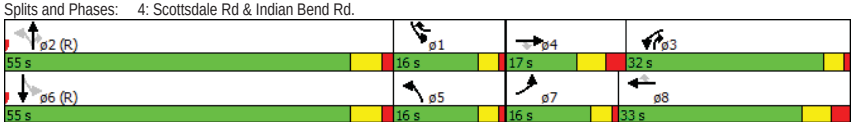
User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	16	55	32	17	16	55	16	33
Maximum Split (%)	13.3%	45.8%	26.7%	14.2%	13.3%	45.8%	13.3%	27.5%
Minimum Split (s)	9.4	29.4	8.5	13	8.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	85	30	118	101	85	30	101	117
End Time (s)	101	85	30	118	101	85	117	30
Yield/Force Off (s)	97	79	26	111	97	79	113	23
Yield/Force Off 170(s)	97	63	26	80	97	63	113	112
Local Start Time (s)	55	0	88	71	55	0	71	87
Local Yield (s)	67	49	116	81	67	49	83	113
Local Yield 170(s)	67	33	116	50	67	33	83	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	75
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	150	
Storage Lanes	1	0		0	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor						
Frt	0.913					
Flt Protected	0.982				0.950	
Satd. Flow (prot)	1670	0	5085	0	1770	5085
Flt Permitted	0.982				0.950	
Satd. Flow (perm)	1670	0	5085	0	1770	5085
Link Speed (mph)	30		30			30
Link Distance (ft)	250		450			430
Travel Time (s)	5.7		10.2			9.8

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	5	8	1547	5	5	1934
Future Vol, veh/h	5	8	1547	5	5	1934
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	9	1682	5	5	2102

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2536	843	0	0	1687	0
Stage 1	1684	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Critical Hdwy	5.74	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	48	264	-	-	180	-
Stage 1	91	-	-	-	-	-
Stage 2	343	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	47	264	-	-	180	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	91	-	-	-	-	-
Stage 2	333	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.1	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	152	180	-
HCM Lane V/C Ratio	-	-	0.093	0.03	-
HCM Control Delay (s)	-	-	31.1	25.6	-
HCM Lane LOS	-	-	D	D	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	200	0	100			150
Storage Lanes	1	1	1			1
Taper Length (ft)	75		75			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.073			
Satd. Flow (perm)	1770	1583	136	5085	5085	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		5				97
Link Speed (mph)	30			30	30	
Link Distance (ft)	560			1330	450	
Travel Time (s)	12.7			30.2	10.2	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	5	44	1497	1996	89
Future Volume (veh/h)	18	5	44	1497	1996	89
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	20	5	48	1627	2170	97
Adj No. of Lanes	1	1	1	3	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	42	37	204	4457	4457	1388
Arrive On Green	0.02	0.02	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1774	1583	165	5253	5253	1583
Grp Volume(v), veh/h	20	5	48	1627	2170	97
Grp Sat Flow(s),veh/h/ln	1774	1583	165	1695	1695	1583
Q Serve(g_s), s	1.3	0.4	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.3	0.4	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	42	37	204	4457	4457	1388
V/C Ratio(X)	0.48	0.13	0.23	0.37	0.49	0.07
Avail Cap(c_a), veh/h	281	251	204	4457	4457	1388
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.81	0.81	1.00	1.00
Uniform Delay (d), s/veh	57.9	57.4	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	8.2	1.6	2.2	0.2	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.2	0.1	0.1	0.2	0.0
LnGrp Delay(d),s/veh	66.1	59.0	2.2	0.2	0.4	0.1
LnGrp LOS	E	E	A	A	A	A
Approach Vol, veh/h	25			1675	2267	
Approach Delay, s/veh	64.7			0.2	0.4	
Approach LOS	E			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		111.2		8.8		111.2		
Change Period (Y+Rc), s		* 6		6.0		* 6		
Max Green Setting (Gmax), s		* 89		19.0		* 89		
Max Q Clear Time (g_c+I1), s		2.0		3.3		2.0		
Green Ext Time (p_c), s		79.9		0.0		79.9		

Intersection Summary	
HCM 2010 Ctrl Delay	0.7
HCM 2010 LOS	A

Notes

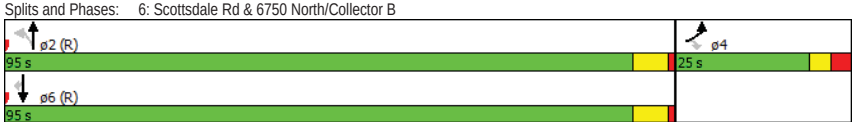
User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	2	4	6
Movement	NBTL	EBL	SBT
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	C-Max	None	C-Max
Maximum Split (s)	95	25	95
Maximum Split (%)	79.2%	20.8%	79.2%
Minimum Split (s)	36	36.2	36.9
Yellow Time (s)	4.9	3	4.9
All-Red Time (s)	1.1	3	1.1
Minimum Initial (s)	10	5	10
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	20	8	20
Flash Dont Walk (s)	10	22	10
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	65	40	65
End Time (s)	40	65	40
Yield/Force Off (s)	34	59	34
Yield/Force Off 170(s)	24	37	24
Local Start Time (s)	0	95	0
Local Yield (s)	89	114	89
Local Yield 170(s)	79	92	79

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 65 (54%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



Lanes and Geometrics

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		0	125		150	175		310	200		300
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.987				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3493	0	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.117			0.232			0.280		
Satd. Flow (perm)	3433	3493	0	218	3539	1583	432	3539	1583	522	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				143			235			324
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1215			9855			1081			1119	
Travel Time (s)		27.6			224.0			24.6			25.4	

Intersection Summary	
Area Type:	Other

HCM 2010 Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	709	66	166	656	87	47	533	216	288	904	388
Future Volume (veh/h)	164	709	66	166	656	87	47	533	216	288	904	388
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	178	771	72	180	713	95	51	579	235	313	983	422
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	881	82	240	1029	460	191	1194	534	422	1547	692
Arrive On Green	0.07	0.27	0.27	0.09	0.29	0.29	0.03	0.34	0.34	0.13	0.44	0.44
Sat Flow, veh/h	3442	3273	306	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	178	417	426	180	713	95	51	579	235	313	983	422
Grp Sat Flow(s),veh/h/ln	1721	1770	1809	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.6	29.3	29.3	9.4	23.3	5.9	2.4	16.8	15.0	14.5	28.1	26.6
Cycle Q Clear(g_c), s	6.6	29.3	29.3	9.4	23.3	5.9	2.4	16.8	15.0	14.5	28.1	26.6
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	476	487	240	1029	460	191	1194	534	422	1547	692
V/C Ratio(X)	0.78	0.87	0.88	0.75	0.69	0.21	0.27	0.48	0.44	0.74	0.64	0.61
Avail Cap(c_a), veh/h	318	476	487	275	1029	460	194	1194	534	576	1547	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.7	45.4	45.4	34.1	41.0	34.8	27.9	34.1	33.5	23.8	28.5	28.1
Incr Delay (d2), s/veh	4.9	19.6	19.3	7.1	3.6	0.9	0.3	1.4	2.6	1.9	2.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	16.8	17.2	5.0	11.9	2.7	1.2	8.4	6.9	7.3	14.1	12.4
LnGrp Delay(d),s/veh	64.6	65.0	64.7	41.3	44.6	35.7	28.2	35.5	36.1	25.7	30.5	32.1
LnGrp LOS	E	E	E	D	D	D	C	D	D	C	C	C
Approach Vol, veh/h		1021			988			865			1718	
Approach Delay, s/veh		64.8			43.1			35.3			30.0	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	44.8	20.7	50.9	16.5	42.0	7.7	63.8
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	12.0	37.0	28.0	30.0	14.0	35.0	4.0	54.0
Max Q Clear Time (g_c+I1), s	8.6	25.3	16.5	18.8	11.4	31.3	4.4	30.1
Green Ext Time (p_c), s	0.1	10.4	0.2	10.6	0.0	3.5	0.0	21.9

Intersection Summary	
HCM 2010 Ctrl Delay	41.6
HCM 2010 LOS	D

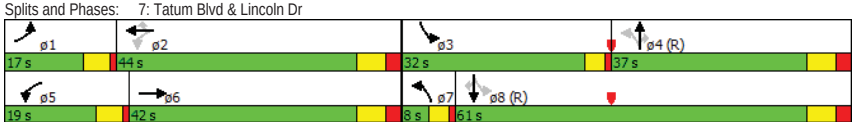
Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBT	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	17	44	32	37	19	42	8	61
Maximum Split (%)	13.1%	33.8%	24.6%	28.5%	14.6%	32.3%	6.2%	46.9%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	101	15	47	84	103	15	23
End Time (s)	101	15	47	84	103	15	23	84
Yield/Force Off (s)	96	8	43	77	98	8	19	77
Yield/Force Off 170(s)	96	115	43	53	98	115	19	53
Local Start Time (s)	37	54	98	0	37	56	98	106
Local Yield (s)	49	91	126	30	51	91	102	30
Local Yield 170(s)	49	68	126	6	51	68	102	6

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	90

Offset: 47 (36%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



Lanes and Geometrics

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	85		0	85		0	110		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.971			0.996			0.856			0.982	
Flt Protected	0.950			0.950			0.950				0.974	
Satd. Flow (prot)	1770	3437	0	1770	3525	0	1770	1595	0	0	1782	0
Flt Permitted	0.299			0.224			0.733				0.775	
Satd. Flow (perm)	557	3437	0	417	3525	0	1365	1595	0	0	1418	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55			5			76			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		9855			2715			561			529	
Travel Time (s)		224.0			61.7			12.8			12.0	

Intersection Summary	
Area Type:	Other

HCM 2010 Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	837	197	55	813	21	103	4	93	18	11	5
Future Volume (veh/h)	10	837	197	55	813	21	103	4	93	18	11	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	910	214	60	884	23	112	4	101	20	12	5
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	443	1887	443	358	2337	61	327	9	223	150	79	23
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	612	2846	669	499	3524	92	1390	61	1532	466	544	158
Grp Volume(v), veh/h	11	566	558	60	444	463	112	0	105	37	0	0
Grp Sat Flow(s),veh/h/ln	612	1770	1745	499	1770	1847	1390	0	1592	1167	0	0
Q Serve(g_s), s	0.6	10.8	10.8	4.6	7.7	7.7	0.0	0.0	4.1	0.1	0.0	0.0
Cycle Q Clear(g_c), s	8.2	10.8	10.8	15.4	7.7	7.7	4.1	0.0	4.1	4.2	0.0	0.0
Prop In Lane	1.00		0.38	1.00		0.05	1.00		0.96	0.54		0.14
Lane Grp Cap(c), veh/h	443	1173	1157	358	1173	1224	327	0	232	252	0	0
V/C Ratio(X)	0.02	0.48	0.48	0.17	0.38	0.38	0.34	0.00	0.45	0.15	0.00	0.00
Avail Cap(c_a), veh/h	443	1173	1157	358	1173	1224	615	0	562	556	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.60	0.60	0.88	0.88	0.88	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.0	5.7	5.7	9.5	5.2	5.2	26.6	0.0	26.6	25.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.9	0.9	0.9	0.8	0.8	0.6	0.0	1.4	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.5	5.4	0.7	4.0	4.1	2.0	0.0	1.9	0.6	0.0	0.0
LnGrp Delay(d),s/veh	7.1	6.5	6.6	10.4	6.0	5.9	27.2	0.0	27.9	25.6	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C		C	C		
Approach Vol, veh/h		1135			967			217			37	
Approach Delay, s/veh		6.5			6.2			27.5			25.6	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.1		16.9		51.1		16.9
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		31.0		24.0		31.0		24.0
Max Q Clear Time (g_c+I1), s		17.4		6.1		12.8		6.2
Green Ext Time (p_c), s		10.5		1.0		13.2		1.0

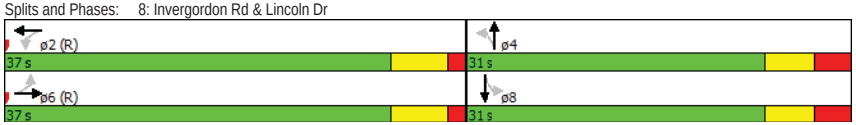
Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	37	31	37	31
Maximum Split (%)	54.4%	45.6%	54.4%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	28	59	28
End Time (s)	28	59	28	59
Yield/Force Off (s)	22	52	22	52
Yield/Force Off 170(s)	11	35	11	52
Local Start Time (s)	0	37	0	37
Local Yield (s)	31	61	31	61
Local Yield 170(s)	20	44	20	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



Lanes and Geometrics

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	100		0	100		0	135		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.996			0.952			0.893	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3525	0	1770	1773	0	1770	1663	0
Flt Permitted	0.257			0.233			0.281			0.555		
Satd. Flow (perm)	479	3522	0	434	3525	0	523	1773	0	1034	1663	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			2			17			115	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2715			1300			2640			2640	
Travel Time (s)		61.7			29.5			60.0			60.0	

Intersection Summary	
Area Type:	Other

HCM 2010 Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	895	34	20	779	21	16	53	25	90	106	266
Future Volume (veh/h)	227	895	34	20	779	21	16	53	25	90	106	266
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	247	973	37	22	847	23	17	58	27	98	115	289
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	537	2169	82	171	1246	34	102	231	107	355	132	331
Arrive On Green	0.22	0.62	0.62	0.35	0.35	0.35	0.19	0.19	0.19	0.06	0.28	0.28
Sat Flow, veh/h	1774	3477	132	556	3520	96	977	1204	560	1774	471	1183
Grp Volume(v), veh/h	247	495	515	22	426	444	17	0	85	98	0	404
Grp Sat Flow(s),veh/h/ln	1774	1770	1839	556	1770	1846	977	0	1764	1774	0	1654
Q Serve(g_s), s	4.4	19.0	19.0	4.2	26.6	26.6	2.2	0.0	5.3	5.6	0.0	30.3
Cycle Q Clear(g_c), s	4.4	19.0	19.0	23.2	26.6	26.6	20.9	0.0	5.3	5.6	0.0	30.3
Prop In Lane	1.00		0.07	1.00		0.05	1.00		0.32	1.00		0.72
Lane Grp Cap(c), veh/h	537	1104	1148	171	626	653	102	0	338	355	0	463
V/C Ratio(X)	0.46	0.45	0.45	0.13	0.68	0.68	0.17	0.00	0.25	0.28	0.00	0.87
Avail Cap(c_a), veh/h	537	1104	1148	171	626	653	144	0	414	484	0	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.6	12.8	12.8	42.5	35.7	35.7	60.0	0.0	44.6	37.4	0.0	44.6
Incr Delay (d2), s/veh	0.5	1.2	1.1	1.6	5.9	5.6	0.8	0.0	0.4	0.4	0.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	9.6	9.9	0.7	14.0	14.6	0.6	0.0	2.6	2.8	0.0	15.0
LnGrp Delay(d),s/veh	37.2	13.9	13.9	44.0	41.6	41.4	60.8	0.0	45.0	37.8	0.0	53.7
LnGrp LOS	D	B	B	D	D	D	E		D	D		D
Approach Vol, veh/h		1257			892			102			502	
Approach Delay, s/veh		18.5			41.6			47.7			50.6	
Approach LOS		B			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	35.1	52.0	11.5	31.4		87.1		42.9
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	16.0	* 46	17.0	30.5		66.0		51.5
Max Q Clear Time (g_c+I1), s	6.4	28.6	7.6	22.9		21.0		32.3
Green Ext Time (p_c), s	5.0	5.5	0.1	2.0		9.5		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	32.9
HCM 2010 LOS	C

Notes

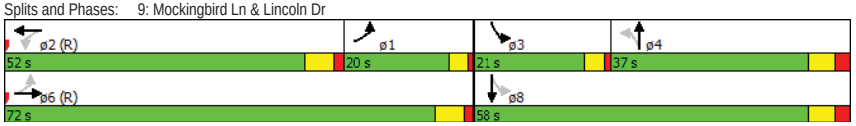
User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	20	52	21	37	72	58
Maximum Split (%)	15.4%	40.0%	16.2%	28.5%	55.4%	44.6%
Minimum Split (s)	8	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	50	128	70	91	128	70
End Time (s)	70	50	91	128	70	128
Yield/Force Off (s)	66	44	87	121.5	64	121.5
Yield/Force Off 170(s)	66	30	87	101.5	50	101.5
Local Start Time (s)	52	0	72	93	0	72
Local Yield (s)	68	46	89	123.5	66	123.5
Local Yield 170(s)	68	32	89	103.5	52	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 128 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	3536	0	1770	3539	1694	0
Flt Permitted			0.950		0.976	
Satd. Flow (perm)	3536	0	1770	3539	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1300			1360	352	
Travel Time (s)	29.5			30.9	8.0	

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	1024	5	5	1109	5	5
Future Vol, veh/h	1024	5	5	1109	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1113	5	5	1205	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1118	0	1730	559
Stage 1	-	-	-	-	1116	-
Stage 2	-	-	-	-	614	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	620	-	79	472
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	502	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	620	-	78	472
Mov Cap-2 Maneuver	-	-	-	-	275	-
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	498	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	348	-	-	620	-
HCM Lane V/C Ratio	0.031	-	-	0.009	-
HCM Control Delay (s)	15.7	-	-	10.9	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	180		0	100		0	275		0	185		165
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	0.97	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor												
Frt			0.850		0.918			0.996				0.850
Flt Protected	0.950	0.959		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1697	1583	1770	3249	0	3433	5065	0	1770	5085	1583
Flt Permitted	0.950	0.959		0.950			0.950			0.950		
Satd. Flow (perm)	1681	1697	1583	1770	3249	0	3433	5065	0	1770	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			154		42			4				402
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1360			455			2640			1330	
Travel Time (s)		30.9			10.3			60.0			30.2	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	551	44	368	24	32	39	266	1082	28	27	1584	570
Future Volume (veh/h)	551	44	368	24	32	39	266	1082	28	27	1584	570
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	633	0	400	26	35	42	289	1176	30	29	1722	620
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	562	0	474	75	75	67	628	2337	60	250	2119	727
Arrive On Green	0.16	0.00	0.16	0.04	0.04	0.04	0.37	0.92	0.92	0.28	0.83	0.83
Sat Flow, veh/h	3548	0	1583	1774	1770	1583	3442	5100	130	1774	5085	1583
Grp Volume(v), veh/h	633	0	400	26	35	42	289	782	424	29	1722	620
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1583	1721	1695	1840	1774	1695	1583
Q Serve(g_s), s	19.0	0.0	11.5	1.7	2.3	3.1	7.7	4.3	4.3	1.5	21.0	33.5
Cycle Q Clear(g_c), s	19.0	0.0	11.5	1.7	2.3	3.1	7.7	4.3	4.3	1.5	21.0	33.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	562	0	474	75	75	67	628	1554	843	250	2119	727
V/C Ratio(X)	1.13	0.00	0.84	0.35	0.47	0.63	0.46	0.50	0.50	0.12	0.81	0.85
Avail Cap(c_a), veh/h	562	0	474	177	177	158	628	1554	843	250	2119	727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	0.88	0.88	0.88
Uniform Delay (d), s/veh	50.5	0.0	39.4	55.8	56.1	56.5	33.6	2.9	2.9	37.5	7.6	7.6
Incr Delay (d2), s/veh	77.9	0.0	12.5	1.0	1.7	3.5	0.2	1.0	1.9	0.1	3.1	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	0.0	6.6	0.9	1.2	1.4	3.6	2.0	2.3	0.7	9.5	16.7
LnGrp Delay(d),s/veh	128.4	0.0	51.9	56.9	57.8	60.0	33.7	3.9	4.8	37.6	10.7	18.4
LnGrp LOS	F		D	E	E	E	C	A	A	D	B	B
Approach Vol, veh/h		1033			103			1495			2371	
Approach Delay, s/veh		98.8			58.5			9.9			13.1	
Approach LOS		F			E			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.9	61.0		12.1	25.9	56.0		26.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	10.0	55.0		12.0	15.0	50.0		19.0
Max Q Clear Time (g_c+I1), s	3.5	6.3		5.1	9.7	35.5		21.0
Green Ext Time (p_c), s	0.1	1.7		0.1	0.1	2.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes

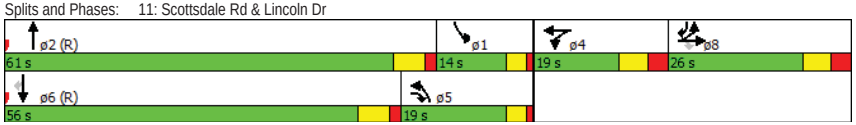
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	14	61	19	19	56	26
Maximum Split (%)	11.7%	50.8%	15.8%	15.8%	46.7%	21.7%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	5	20	5	5	20	8
Vehicle Extension (s)	1	0.2	2	1	0.2	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	31	90	45	26	90	64
End Time (s)	45	31	64	45	26	90
Yield/Force Off (s)	41	25	57	41	20	83
Yield/Force Off 170(s)	41	10	31	41	5	57
Local Start Time (s)	61	0	75	56	0	94
Local Yield (s)	71	55	87	71	50	113
Local Yield 170(s)	71	40	61	71	35	87

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 90 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



Lanes and Geometrics

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	75		0	0		0	75		0
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.982			0.955				0.850
Flt Protected	0.950			0.950				0.984		0.950		
Satd. Flow (prot)	1770	1852	0	1770	1829	0	0	1750	0	1770	0	1583
Flt Permitted	0.950			0.950				0.984		0.950		
Satd. Flow (perm)	1770	1852	0	1770	1829	0	0	1750	0	1770	0	1583
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		950			2680			459			2640	
Travel Time (s)		21.6			60.9			10.4			60.0	

Intersection Summary

Area Type: Other

HCM 2010 AWSC

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	44	218	9	0	8	273	38	0	5	5	5
Future Vol, veh/h	0	44	218	9	0	8	273	38	0	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	48	237	10	0	9	297	41	0	5	5	5
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	10.9	12.9	9.6
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	33%	100%	0%	100%	0%	100%	0%
Vol Thru, %	33%	0%	96%	0%	88%	0%	8%
Vol Right, %	33%	0%	4%	0%	12%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	44	227	8	311	73	65
LT Vol	5	44	0	8	0	73	0
Through Vol	5	0	218	0	273	0	5
RT Vol	5	0	9	0	38	0	60
Lane Flow Rate	16	48	247	9	338	79	71
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.029	0.078	0.365	0.014	0.491	0.146	0.107
Departure Headway (Hd)	6.373	5.855	5.323	5.819	5.229	6.717	5.459
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	565	607	671	611	683	537	649
Service Time	4.373	3.633	3.1	3.593	3.003	4.417	3.258
HCM Lane V/C Ratio	0.028	0.079	0.368	0.015	0.495	0.147	0.109
HCM Control Delay	9.6	9.1	11.2	8.7	13	10.6	8.9
HCM Lane LOS	A	A	B	A	B	B	A
HCM 95th-tile Q	0.1	0.3	1.7	0	2.7	0.5	0.4

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	73	5	60
Future Vol, veh/h	0	73	5	60
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	79	5	65
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.8
HCM LOS	A

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	165		100	200		300	260		100
Storage Lanes	1		0	1		1	1		1	2		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor												
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3468	0	1770	3539	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.351			0.494			0.950			0.950		
Satd. Flow (perm)	654	3468	0	920	3539	1583	1770	5085	1583	3433	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				118			149			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2680			809			883			2640	
Travel Time (s)		60.9			18.4			20.1			60.0	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	227	34	289	332	286	45	1010	137	169	1669	68
Future Volume (veh/h)	118	227	34	289	332	286	45	1010	137	169	1669	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	128	247	37	314	361	311	49	1098	149	184	1814	74
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	326	48	281	478	588	419	1907	594	814	1907	594
Arrive On Green	0.08	0.11	0.11	0.11	0.14	0.14	0.24	0.38	0.38	0.31	0.50	0.50
Sat Flow, veh/h	1774	3094	458	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	128	140	144	314	361	311	49	1098	149	184	1814	74
Grp Sat Flow(s),veh/h/ln	1774	1770	1782	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	3.8	9.2	9.4	13.0	11.8	0.0	2.6	20.7	7.8	4.7	40.8	3.0
Cycle Q Clear(g_c), s	3.8	9.2	9.4	13.0	11.8	0.0	2.6	20.7	7.8	4.7	40.8	3.0
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	186	188	281	478	588	419	1907	594	814	1907	594
V/C Ratio(X)	0.63	0.75	0.77	1.12	0.75	0.53	0.12	0.58	0.25	0.23	0.95	0.12
Avail Cap(c_a), veh/h	258	339	342	281	678	678	419	1907	594	814	1907	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.56	0.56	0.56
Uniform Delay (d), s/veh	51.7	52.2	52.3	51.3	50.0	29.5	36.0	29.9	25.9	33.0	29.0	19.5
Incr Delay (d2), s/veh	3.1	6.0	6.5	88.8	3.0	0.7	0.1	1.3	1.0	0.1	7.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	4.8	5.0	15.9	6.0	8.1	1.3	9.9	3.6	2.3	20.2	1.3
LnGrp Delay(d),s/veh	54.8	58.1	58.7	140.0	53.0	30.2	36.1	31.2	26.9	33.1	36.7	19.8
LnGrp LOS	D	E	E	F	D	C	D	C	C	C	D	B
Approach Vol, veh/h		412			986			1296			2072	
Approach Delay, s/veh		57.3			73.5			30.9			35.8	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.4	51.0	17.0	19.6	32.4	51.0	13.4	23.2
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	18.0	45.0	* 13	23.0	18.0	45.0	* 13	23.0
Max Q Clear Time (g_c+I1), s	6.7	22.7	15.0	11.4	4.6	42.8	5.8	13.8
Green Ext Time (p_c), s	0.6	9.0	0.0	1.2	0.6	1.9	0.9	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	44.1
HCM 2010 LOS	D

Notes

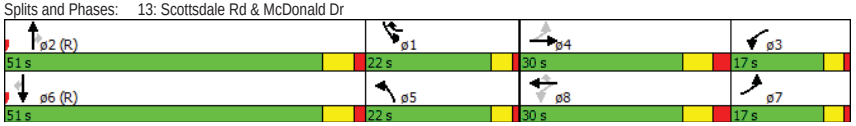
User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	22	51	17	30	22	51	17	30
Maximum Split (%)	18.3%	42.5%	14.2%	25.0%	18.3%	42.5%	14.2%	25.0%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	1	0.2	1	2	1	0.2	1	2
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	81	30	13	103	81	30	13	103
End Time (s)	103	81	30	13	103	81	30	13
Yield/Force Off (s)	99	75	26	6	99	75	26	6
Yield/Force Off 170(s)	99	59	26	102	99	59	26	102
Local Start Time (s)	51	0	103	73	51	0	103	73
Local Yield (s)	69	45	116	96	69	45	116	96
Local Yield 170(s)	69	29	116	72	69	29	116	72

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	95
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	0		0	75		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.873			0.987			0.918			0.981	
Flt Protected	0.950				0.976		0.950				0.998	
Satd. Flow (prot)	1770	1626	0	0	1794	0	1770	1710	0	0	1824	0
Flt Permitted	0.950				0.976		0.950				0.998	
Satd. Flow (perm)	1770	1626	0	0	1794	0	1770	1710	0	0	1824	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		803			802			5205			554	
Travel Time (s)		18.3			18.2			118.3			12.6	

Intersection Summary	
Area Type:	Other

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	31	177	0	18	16	4	0	250	38	45
Future Vol, veh/h	0	4	31	177	0	18	16	4	0	250	38	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	34	192	0	20	17	4	0	272	41	49
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	10.1	9.4	11.8
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	47%	4%
Vol Thru, %	0%	46%	0%	15%	42%	81%
Vol Right, %	0%	54%	0%	85%	11%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	83	4	208	38	27
LT Vol	250	0	4	0	18	1
Through Vol	0	38	0	31	16	22
RT Vol	0	45	0	177	4	4
Lane Flow Rate	272	90	4	226	41	29
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.434	0.122	0.007	0.316	0.068	0.046
Departure Headway (Hd)	5.754	4.869	6.141	5.037	5.905	5.627
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	622	731	581	710	603	630
Service Time	3.518	2.633	3.893	2.789	3.98	3.715
HCM Lane V/C Ratio	0.437	0.123	0.007	0.318	0.068	0.046
HCM Control Delay	12.9	8.3	8.9	10.1	9.4	9
HCM Lane LOS	B	A	A	B	A	A
HCM 95th-tile Q	2.2	0.4	0	1.4	0.2	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	22	4
Future Vol, veh/h	0	1	22	4
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	24	4
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9
HCM LOS	A

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	75	0		0	75	
Storage Lanes	1	1		0	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850	0.967			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1801	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1801	0	1770	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	1540		2640			5205
Travel Time (s)	35.0		60.0			118.3

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	89	43	313	99	35	188
Future Vol, veh/h	89	43	313	99	35	188
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	47	340	108	38	204

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	674	394	0	0	448	0
Stage 1	394	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	420	655	-	-	1112	-
Stage 1	681	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	406	655	-	-	1112	-
Mov Cap-2 Maneuver	508	-	-	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	741	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	508	655	1112	-
HCM Lane V/C Ratio	-	-	0.19	0.071	0.034	-
HCM Control Delay (s)	-	-	13.7	10.9	8.4	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.2	0.1	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.932	
Flt Protected		0.998			0.976	
Satd. Flow (prot)	0	1859	1842	0	1694	0
Flt Permitted		0.998			0.976	
Satd. Flow (perm)	0	1859	1842	0	1694	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		220	310		318	
Travel Time (s)		5.0	7.0		7.2	

Intersection Summary	
Area Type:	Other

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	5	118	152	14	5	5
Future Vol, veh/h	5	118	152	14	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	128	165	15	5	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	180	0	-	0	312	173
Stage 1	-	-	-	-	173	-
Stage 2	-	-	-	-	139	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1396	-	-	-	681	871
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	888	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1396	-	-	-	678	871
Mov Cap-2 Maneuver	-	-	-	-	706	-
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1396	-	-	-	780
HCM Lane V/C Ratio	0.004	-	-	-	0.014
HCM Control Delay (s)	7.6	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		200	265		265	235		210	210		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	1863	1583	1770	5085	1583	1770	5065	0
Flt Permitted	0.950			0.950			0.092			0.066		
Satd. Flow (perm)	1770	1863	1583	3433	1863	1583	171	5085	1583	123	5065	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127			114			228		4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		310			1000			430			1000	
Travel Time (s)		7.0			22.7			9.8			22.7	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	92	11	411	130	127	40	1714	465	175	1418	37
Future Volume (veh/h)	46	92	11	411	130	127	40	1714	465	175	1418	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	50	100	12	447	141	138	43	1863	505	190	1541	40
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	130	110	510	385	576	395	2161	908	349	2166	56
Arrive On Green	0.04	0.07	0.07	0.15	0.21	0.21	0.05	0.14	0.14	0.16	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	5085	1583	1774	5097	132
Grp Volume(v), veh/h	50	100	12	447	141	138	43	1863	505	190	1025	556
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1839
Q Serve(g_s), s	3.4	6.3	0.9	15.3	7.8	0.8	0.0	43.0	16.9	6.8	29.9	29.9
Cycle Q Clear(g_c), s	3.4	6.3	0.9	15.3	7.8	0.8	0.0	43.0	16.9	6.8	29.9	29.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	64	130	110	510	385	576	395	2161	908	349	1441	782
V/C Ratio(X)	0.78	0.77	0.11	0.88	0.37	0.24	0.11	0.86	0.56	0.55	0.71	0.71
Avail Cap(c_a), veh/h	207	171	145	660	385	576	395	2161	908	349	1441	782
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	54.9	52.3	50.0	40.9	15.1	35.3	48.1	28.9	44.0	28.4	28.4
Incr Delay (d2), s/veh	7.3	10.0	0.2	8.8	0.2	0.1	0.0	4.8	2.5	1.0	3.0	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.6	0.4	7.9	4.0	2.4	1.3	21.2	8.0	5.7	14.6	16.3
LnGrp Delay(d),s/veh	64.6	64.9	52.5	58.8	41.1	15.2	35.4	53.0	31.3	45.0	31.4	33.9
LnGrp LOS	E	E	D	E	D	B	D	D	C	D	C	C
Approach Vol, veh/h		162			726			2411			1771	
Approach Delay, s/veh		63.9			47.1			48.1			33.7	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.8	57.0	24.8	15.4	22.8	57.0	8.3	31.8
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 14	51.0	* 23	* 11	* 14	51.0	14.0	* 20
Max Q Clear Time (g_c+I1), s	8.8	45.0	17.3	8.3	2.0	31.9	5.4	9.8
Green Ext Time (p_c), s	0.1	2.3	0.5	0.0	0.1	2.3	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.4
HCM 2010 LOS	D

Notes

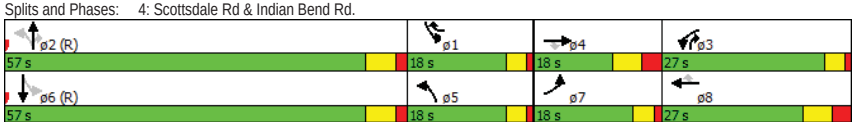
User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	18	57	27	18	18	57	18	27
Maximum Split (%)	15.0%	47.5%	22.5%	15.0%	15.0%	47.5%	15.0%	22.5%
Minimum Split (s)	9.4	29.4	8.5	13	8.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	87	30	3	105	87	30	105	3
End Time (s)	105	87	30	3	105	87	3	30
Yield/Force Off (s)	101	81	26	116	101	81	119	23
Yield/Force Off 170(s)	101	65	26	85	101	65	119	112
Local Start Time (s)	57	0	93	75	57	0	75	93
Local Yield (s)	71	51	116	86	71	51	89	113
Local Yield 170(s)	71	35	116	55	71	35	89	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



Lanes and Geometrics

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	150	
Storage Lanes	1	0		0	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor						
Frt	0.907					
Flt Protected	0.985				0.950	
Satd. Flow (prot)	1664	0	5085	0	1770	5085
Flt Permitted	0.985				0.950	
Satd. Flow (perm)	1664	0	5085	0	1770	5085
Link Speed (mph)	30		30			30
Link Distance (ft)	250		450			430
Travel Time (s)	5.7		10.2			9.8

Intersection Summary	
Area Type:	Other

HCM 2010 TWSC

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	5	10	2190	6	9	1922
Future Vol, veh/h	5	10	2190	6	9	1922
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	11	2380	7	10	2089

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3239	1193	0	0	2387	0
Stage 1	2384	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Critical Hdwy	5.74	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	19	154	-	-	79	-
Stage 1	32	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	17	154	-	-	79	-
Mov Cap-2 Maneuver	32	-	-	-	-	-
Stage 1	32	-	-	-	-	-
Stage 2	299	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	73.9	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	68	79	-
HCM Lane V/C Ratio	-	-	0.24	0.124	-
HCM Control Delay (s)	-	-	73.9	56.9	-
HCM Lane LOS	-	-	F	F	-
HCM 95th %tile Q(veh)	-	-	0.8	0.4	-

Lanes and Geometrics

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	200	0	100			150
Storage Lanes	1	1	1			1
Taper Length (ft)	75		75			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.072			
Satd. Flow (perm)	1770	1583	134	5085	5085	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		22				12
Link Speed (mph)	30			30	30	
Link Distance (ft)	560			1330	450	
Travel Time (s)	12.7			30.2	10.2	

Intersection Summary	
Area Type:	Other

HCM 2010 Signalized Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	61	36	5	2131	1979	11
Future Volume (veh/h)	61	36	5	2131	1979	11
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	66	39	5	2316	2151	12
Adj No. of Lanes	1	1	1	3	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	94	84	215	4307	4307	1341
Arrive On Green	0.05	0.05	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1774	1583	183	5253	5253	1583
Grp Volume(v), veh/h	66	39	5	2316	2151	12
Grp Sat Flow(s),veh/h/ln	1774	1583	183	1695	1695	1583
Q Serve(g_s), s	4.4	2.9	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.4	2.9	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	94	84	215	4307	4307	1341
V/C Ratio(X)	0.70	0.46	0.02	0.54	0.50	0.01
Avail Cap(c_a), veh/h	266	237	215	4307	4307	1341
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.56	0.56	1.00	1.00
Uniform Delay (d), s/veh	55.9	55.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	9.1	3.9	0.1	0.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.3	0.0	0.1	0.2	0.0
LnGrp Delay(d),s/veh	64.9	59.1	0.1	0.3	0.4	0.0
LnGrp LOS	E	E	A	A	A	A
Approach Vol, veh/h	105			2321	2163	
Approach Delay, s/veh	62.8			0.3	0.4	
Approach LOS	E			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		107.6		12.4		107.6		
Change Period (Y+Rc), s		* 6		6.0		* 6		
Max Green Setting (Gmax), s		* 90		18.0		* 90		
Max Q Clear Time (g_c+I1), s		2.0		6.4		2.0		
Green Ext Time (p_c), s		84.4		0.2		84.4		

Intersection Summary	
HCM 2010 Ctrl Delay	1.8
HCM 2010 LOS	A

Notes

HCM 2010 Signalized Intersection Summary

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

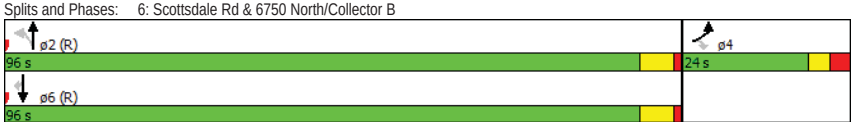
HCM 2010 TWSC

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	2	4	6
Movement	NBTL	EBL	SBT
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	C-Max	None	C-Max
Maximum Split (s)	96	24	96
Maximum Split (%)	80.0%	20.0%	80.0%
Minimum Split (s)	36	36.2	36.9
Yellow Time (s)	4.9	3	4.9
All-Red Time (s)	1.1	3	1.1
Minimum Initial (s)	10	5	10
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	20	8	20
Flash Dont Walk (s)	10	22	10
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	65	41	65
End Time (s)	41	65	41
Yield/Force Off (s)	35	59	35
Yield/Force Off 170(s)	25	37	25
Local Start Time (s)	0	96	0
Local Yield (s)	90	114	90
Local Yield 170(s)	80	92	80

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 65 (54%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		0	125		150	175		310	200		300
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3511	0	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.149			0.376			0.082		
Satd. Flow (perm)	3433	3511	0	278	3539	1583	700	3539	1583	153	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				166			163			182
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1215			9855			1081			1119	
Travel Time (s)		27.6			224.0			24.6			25.4	

Intersection Summary	
Area Type:	Other

HCM 2010 Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	669	38	209	771	248	86	1017	181	186	616	167
Future Volume (veh/h)	347	669	38	209	771	248	86	1017	181	186	616	167
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	377	727	41	227	838	270	93	1105	197	202	670	182
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	920	52	295	1007	451	290	1276	571	237	1470	658
Arrive On Green	0.09	0.27	0.27	0.11	0.28	0.28	0.03	0.36	0.36	0.09	0.42	0.42
Sat Flow, veh/h	3442	3406	192	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	377	378	390	227	838	270	93	1105	197	202	670	182
Grp Sat Flow(s),veh/h/ln	1721	1770	1829	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	12.0	25.7	25.8	11.9	28.9	19.1	4.0	37.7	11.8	9.0	17.7	9.9
Cycle Q Clear(g_c), s	12.0	25.7	25.8	11.9	28.9	19.1	4.0	37.7	11.8	9.0	17.7	9.9
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	478	494	295	1007	451	290	1276	571	237	1470	658
V/C Ratio(X)	1.19	0.79	0.79	0.77	0.83	0.60	0.32	0.87	0.35	0.85	0.46	0.28
Avail Cap(c_a), veh/h	318	478	494	297	1007	451	290	1276	571	467	1470	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.0	44.0	44.0	32.6	43.6	40.1	26.6	38.7	30.4	29.8	27.4	25.1
Incr Delay (d2), s/veh	111.2	12.5	12.2	8.4	6.4	4.6	0.2	8.1	1.7	3.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	14.2	14.7	6.4	15.0	8.9	0.5	19.8	5.4	4.6	8.9	4.5
LnGrp Delay(d),s/veh	170.2	56.5	56.2	41.1	50.0	44.7	26.8	46.7	32.0	33.1	28.4	26.1
LnGrp LOS	F	E	E	D	D	D	C	D	C	C	C	C
Approach Vol, veh/h		1145			1335			1395			1054	
Approach Delay, s/veh		93.8			47.4			43.3			28.9	
Approach LOS		F			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	44.0	15.1	53.9	18.9	42.1	8.0	61.0
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	12.0	37.0	28.0	30.0	14.0	35.0	4.0	54.0
Max Q Clear Time (g_c+I1), s	14.0	30.9	11.0	39.7	13.9	27.8	6.0	19.7
Green Ext Time (p_c), s	0.0	5.8	0.2	0.0	0.0	6.8	0.0	30.5

Intersection Summary	
HCM 2010 Ctrl Delay	53.1
HCM 2010 LOS	D

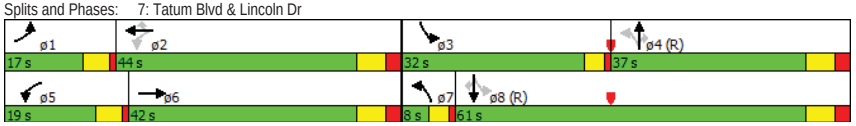
HCM 2010 TWSC

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBT	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	17	44	32	37	19	42	8	61
Maximum Split (%)	13.1%	33.8%	24.6%	28.5%	14.6%	32.3%	6.2%	46.9%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	101	15	47	84	103	15	23
End Time (s)	101	15	47	84	103	15	23	84
Yield/Force Off (s)	96	8	43	77	98	8	19	77
Yield/Force Off 170(s)	96	115	43	53	98	115	19	53
Local Start Time (s)	37	54	98	0	37	56	98	106
Local Yield (s)	49	91	126	30	51	91	102	30
Local Yield 170(s)	49	68	126	6	51	68	102	6

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 47 (36%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	85		0	85		0	110		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.980			0.996			0.880			0.973	
Flt Protected	0.950			0.950			0.950				0.976	
Satd. Flow (prot)	1770	3468	0	1770	3525	0	1770	1639	0	0	1769	0
Flt Permitted	0.224			0.175			0.720				0.829	
Satd. Flow (perm)	417	3468	0	326	3525	0	1341	1639	0	0	1503	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			5			56			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		9855			2715			561			529	
Travel Time (s)		224.0			61.7			12.8			12.0	

Intersection Summary	
Area Type:	Other

HCM 2010 Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	928	145	61	916	25	245	21	84	25	17	10
Future Volume (veh/h)	5	928	145	61	916	25	245	21	84	25	17	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	1009	158	66	996	27	266	23	91	27	18	11
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	1810	283	292	2077	56	427	72	285	193	122	58
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	549	3068	480	479	3520	95	1375	329	1303	523	556	264
Grp Volume(v), veh/h	5	582	585	66	501	522	266	0	114	56	0	0
Grp Sat Flow(s),veh/h/ln	549	1770	1778	479	1770	1846	1375	0	1633	1342	0	0
Q Serve(g_s), s	0.4	13.6	13.7	6.6	11.0	11.0	7.4	0.0	4.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	11.4	13.6	13.7	20.3	11.0	11.0	11.5	0.0	4.0	4.1	0.0	0.0
Prop In Lane	1.00		0.27	1.00		0.05	1.00		0.80	0.48		0.20
Lane Grp Cap(c), veh/h	341	1044	1049	292	1044	1089	427	0	357	372	0	0
V/C Ratio(X)	0.01	0.56	0.56	0.23	0.48	0.48	0.62	0.00	0.32	0.15	0.00	0.00
Avail Cap(c_a), veh/h	341	1044	1049	292	1044	1089	611	0	576	571	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.62	0.62	0.84	0.84	0.84	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.2	8.5	8.5	14.7	8.0	8.0	25.0	0.0	22.3	21.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	1.3	1.5	1.3	1.3	1.5	0.0	0.5	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	7.0	7.1	1.0	5.7	5.9	4.9	0.0	1.9	0.9	0.0	0.0
LnGrp Delay(d),s/veh	11.3	9.8	9.9	16.2	9.3	9.2	26.5	0.0	22.8	21.6	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C		C	C		
Approach Vol, veh/h		1172			1089			380			56	
Approach Delay, s/veh		9.9			9.7			25.4			21.6	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		46.1		21.9		46.1		21.9
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		31.0		24.0		31.0		24.0
Max Q Clear Time (g_c+I1), s		22.3		13.5		15.7		6.1
Green Ext Time (p_c), s		7.4		1.4		12.2		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

HCM 2010 TWSC

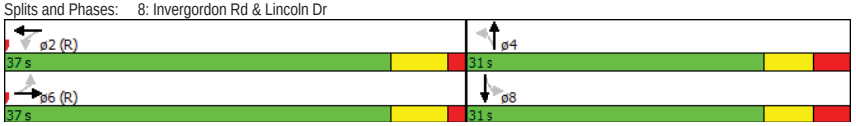
Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	37	31	37	31
Maximum Split (%)	54.4%	45.6%	54.4%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	28	59	28
End Time (s)	28	59	28	59
Yield/Force Off (s)	22	52	22	52
Yield/Force Off 170(s)	11	35	11	52
Local Start Time (s)	0	37	0	37
Local Yield (s)	31	61	31	61
Local Yield 170(s)	20	44	20	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	60

Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	100		0	100		0	135		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.986			0.973			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3490	0	1770	1812	0	1770	1682	0
Flt Permitted	0.213			0.255			0.594			0.425		
Satd. Flow (perm)	397	3529	0	475	3490	0	1106	1812	0	792	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			9			8			84	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2715			1300			2640			2640	
Travel Time (s)		61.7			29.5			60.0			60.0	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	876	17	13	844	87	12	103	23	54	87	160
Future Volume (veh/h)	253	876	17	13	844	87	12	103	23	54	87	160
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	275	952	18	14	917	95	13	112	25	59	95	174
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	644	2507	47	197	1146	119	105	190	42	195	117	214
Arrive On Green	0.31	0.71	0.71	0.35	0.35	0.35	0.13	0.13	0.13	0.04	0.20	0.20
Sat Flow, veh/h	1774	3553	67	577	3238	335	1106	1475	329	1774	590	1081
Grp Volume(v), veh/h	275	474	496	14	501	511	13	0	137	59	0	269
Grp Sat Flow(s),veh/h/ln	1774	1770	1851	577	1770	1804	1106	0	1805	1774	0	1672
Q Serve(g_s), s	7.8	14.0	14.0	2.4	33.2	33.2	1.5	0.0	9.3	3.7	0.0	20.0
Cycle Q Clear(g_c), s	7.8	14.0	14.0	16.4	33.2	33.2	12.4	0.0	9.3	3.7	0.0	20.0
Prop In Lane	1.00		0.04	1.00		0.19	1.00		0.18	1.00		0.65
Lane Grp Cap(c), veh/h	644	1249	1306	197	626	638	105	0	232	195	0	331
V/C Ratio(X)	0.43	0.38	0.38	0.07	0.80	0.80	0.12	0.00	0.59	0.30	0.00	0.81
Avail Cap(c_a), veh/h	644	1249	1306	197	626	638	222	0	423	358	0	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.75	0.75	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.7	7.7	7.7	37.9	37.9	37.9	60.1	0.0	53.4	45.4	0.0	49.8
Incr Delay (d2), s/veh	0.3	0.7	0.6	0.7	10.3	10.2	0.5	0.0	2.4	0.9	0.0	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	6.9	7.3	0.4	17.9	18.3	0.5	0.0	4.8	1.8	0.0	9.7
LnGrp Delay(d),s/veh	32.0	8.4	8.3	38.6	48.2	48.0	60.6	0.0	55.8	46.3	0.0	54.6
LnGrp LOS	C	A	A	D	D	D	E		E	D		D
Approach Vol, veh/h		1245			1026			150			328	
Approach Delay, s/veh		13.6			48.0			56.2			53.1	
Approach LOS		B			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	45.7	52.0	9.0	23.2		97.7		32.3
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	16.0	* 46	17.0	30.5		66.0		51.5
Max Q Clear Time (g_c+I1), s	9.8	35.2	5.7	14.4		16.0		22.0
Green Ext Time (p_c), s	3.6	5.0	0.1	2.3		9.2		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Notes

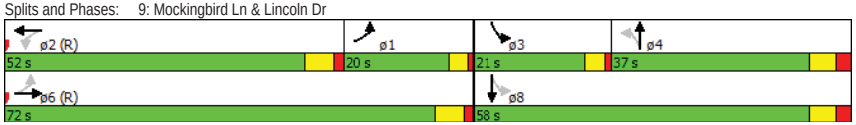
User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	20	52	21	37	72	58
Maximum Split (%)	15.4%	40.0%	16.2%	28.5%	55.4%	44.6%
Minimum Split (s)	8	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	50	128	70	91	128	70
End Time (s)	70	50	91	128	70	128
Yield/Force Off (s)	66	44	87	121.5	64	121.5
Yield/Force Off 170(s)	66	30	87	101.5	50	101.5
Local Start Time (s)	52	0	72	93	0	72
Local Yield (s)	68	46	89	123.5	66	123.5
Local Yield 170(s)	68	32	89	103.5	52	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 128 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



Lanes and Geometrics

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	3536	0	1770	3539	1694	0
Flt Permitted			0.950		0.976	
Satd. Flow (perm)	3536	0	1770	3539	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1300			1360	352	
Travel Time (s)	29.5			30.9	8.0	

Intersection Summary	
Area Type:	Other

HCM 2010 TWSC

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	498	5	5	870	5	5
Future Vol, veh/h	498	5	5	870	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	541	5	5	946	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	547	0	1028	273
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1018	-	230	725
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	585	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1018	-	229	725
Mov Cap-2 Maneuver	-	-	-	-	546	-
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	582	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	623	-	-	1018	-
HCM Lane V/C Ratio	0.017	-	-	0.005	-
HCM Control Delay (s)	10.9	-	-	8.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes and Geometrics

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	180		0	100		0	275		0	185		165
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	0.97	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor												
Frt			0.850		0.926			0.997				0.850
Flt Protected	0.950	0.959		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1697	1583	1770	3277	0	3433	5070	0	1770	5085	1583
Flt Permitted	0.950	0.959		0.950			0.950			0.950		
Satd. Flow (perm)	1681	1697	1583	1770	3277	0	3433	5070	0	1770	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171		57			3				312
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1360			455			2640			1330	
Travel Time (s)		30.9			10.3			60.0			30.2	

Intersection Summary

Area Type: Other

HCM 2010 Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	539	45	358	41	54	52	328	1523	36	54	1439	398
Future Volume (veh/h)	539	45	358	41	54	52	328	1523	36	54	1439	398
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	621	0	389	45	59	57	357	1655	39	59	1564	433
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	591	0	507	97	99	85	816	2172	51	273	1737	627
Arrive On Green	0.17	0.00	0.17	0.05	0.05	0.05	0.47	0.85	0.85	0.31	0.68	0.68
Sat Flow, veh/h	3548	0	1583	1774	1807	1551	3442	5111	120	1774	5085	1583
Grp Volume(v), veh/h	621	0	389	45	58	58	357	1098	596	59	1564	433
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1589	1721	1695	1841	1774	1695	1583
Q Serve(g_s), s	20.0	0.0	8.1	3.0	3.8	4.3	8.3	16.5	16.5	3.0	30.4	21.0
Cycle Q Clear(g_c), s	20.0	0.0	8.1	3.0	3.8	4.3	8.3	16.5	16.5	3.0	30.4	21.0
Prop In Lane	1.00		1.00	1.00		0.98	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	591	0	507	97	97	87	816	1441	783	273	1737	627
V/C Ratio(X)	1.05	0.00	0.77	0.46	0.60	0.67	0.44	0.76	0.76	0.22	0.90	0.69
Avail Cap(c_a), veh/h	591	0	507	207	206	185	816	1441	783	273	1737	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.66	0.66	0.66	0.86	0.86	0.86
Uniform Delay (d), s/veh	50.0	0.0	36.7	55.0	55.4	55.7	26.2	6.4	6.4	36.2	17.3	13.6
Incr Delay (d2), s/veh	50.9	0.0	6.3	1.3	2.2	3.4	0.1	2.6	4.7	0.1	7.0	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.0	0.0	4.3	1.5	1.9	2.0	3.9	7.5	8.6	1.5	14.7	10.5
LnGrp Delay(d),s/veh	100.9	0.0	43.0	56.3	57.6	59.0	26.3	9.0	11.1	36.3	24.3	18.9
LnGrp LOS	F		D	E	E	E	C	A	B	D	C	B
Approach Vol, veh/h		1010			161			2051			2056	
Approach Delay, s/veh		78.6			57.8			12.6			23.5	
Approach LOS		E			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.5	57.0		13.5	32.5	47.0		27.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	11.0	51.0		14.0	21.0	41.0		20.0
Max Q Clear Time (g_c+I1), s	5.0	18.5		6.3	10.3	32.4		22.0
Green Ext Time (p_c), s	0.2	2.6		0.3	0.2	2.2		0.0

Intersection Summary

HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Notes

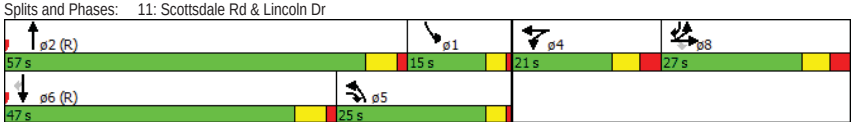
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	57	21	25	47	27
Maximum Split (%)	12.5%	47.5%	17.5%	20.8%	39.2%	22.5%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	5	20	5	5	20	8
Vehicle Extension (s)	1	0.2	2	1	0.2	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	27	90	42	17	90	63
End Time (s)	42	27	63	42	17	90
Yield/Force Off (s)	38	21	56	38	11	83
Yield/Force Off 170(s)	38	6	30	38	116	57
Local Start Time (s)	57	0	72	47	0	93
Local Yield (s)	68	51	86	68	41	113
Local Yield 170(s)	68	36	60	68	26	87

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 90 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	75		0	0		0	75		0
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.966			0.953				0.850
Flt Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1770	1857	0	1770	1799	0	0	1745	0	1770	0	1583
Flt Permitted	0.950			0.950				0.983		0.950		
Satd. Flow (perm)	1770	1857	0	1770	1799	0	0	1745	0	1770	0	1583
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		950			2680			459			2640	
Travel Time (s)		21.6			60.9			10.4			60.0	

Intersection Summary	
Area Type:	Other

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	65	192	4	0	22	237	70	0	13	11	13
Future Vol, veh/h	0	65	192	4	0	22	237	70	0	13	11	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	71	209	4	0	24	258	76	0	14	12	14
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	10.5	12.6	9.8
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	100%	0%	100%	0%	100%	0%
Vol Thru, %	30%	0%	98%	0%	77%	0%	10%
Vol Right, %	35%	0%	2%	0%	23%	0%	90%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	65	196	22	307	51	92
LT Vol	13	65	0	22	0	51	0
Through Vol	11	0	192	0	237	0	9
RT Vol	13	0	4	0	70	0	83
Lane Flow Rate	40	71	213	24	334	55	100
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.071	0.117	0.322	0.039	0.485	0.104	0.156
Departure Headway (Hd)	6.359	6.057	5.537	5.896	5.231	6.769	5.624
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	566	596	654	601	681	533	641
Service Time	4.364	3.757	3.237	3.695	3.029	4.471	3.326
HCM Lane V/C Ratio	0.071	0.119	0.326	0.04	0.49	0.103	0.156
HCM Control Delay	9.8	9.6	10.8	8.9	12.9	10.3	9.4
HCM Lane LOS	A	A	B	A	B	B	A
HCM 95th-tile Q	0.2	0.4	1.4	0.1	2.7	0.3	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	51	9	83
Future Vol, veh/h	0	51	9	83
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	55	10	90
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.7
HCM LOS	A

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	165		100	200		300	260		100
Storage Lanes	1		0	1		1	1		1	2		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor												
Frt		0.978				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3461	0	1770	3539	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.598			0.525			0.950			0.950		
Satd. Flow (perm)	1114	3461	0	978	3539	1583	1770	5085	1583	3433	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				141			243			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2680			809			883			2640	
Travel Time (s)		60.9			18.4			20.1			60.0	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	203	35	227	205	183	35	1694	232	292	1504	90
Future Volume (veh/h)	77	203	35	227	205	183	35	1694	232	292	1504	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	84	221	38	247	223	199	38	1841	252	317	1635	98
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	298	50	260	328	505	402	2034	633	780	2034	633
Arrive On Green	0.11	0.10	0.10	0.10	0.09	0.09	0.23	0.40	0.40	0.30	0.53	0.53
Sat Flow, veh/h	1774	3029	513	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	84	128	131	247	223	199	38	1841	252	317	1635	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1772	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	8.4	8.7	11.0	7.3	0.0	2.0	40.9	13.6	8.8	31.5	3.8
Cycle Q Clear(g_c), s	0.0	8.4	8.7	11.0	7.3	0.0	2.0	40.9	13.6	8.8	31.5	3.8
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	174	174	260	328	505	402	2034	633	780	2034	633
V/C Ratio(X)	0.30	0.73	0.75	0.95	0.68	0.39	0.09	0.91	0.40	0.41	0.80	0.15
Avail Cap(c_a), veh/h	278	354	354	260	708	675	402	2034	633	780	2034	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.48	0.48	0.48
Uniform Delay (d), s/veh	47.3	52.6	52.7	51.6	52.7	31.8	36.7	33.9	25.7	35.5	24.2	17.7
Incr Delay (d2), s/veh	0.6	5.9	6.4	41.9	2.5	0.5	0.1	7.2	1.9	0.2	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.4	4.5	11.1	3.7	5.2	1.0	20.5	6.3	4.2	14.9	1.7
LnGrp Delay(d),s/veh	47.9	58.4	59.1	93.5	55.2	32.3	36.8	41.1	27.6	35.7	25.9	18.0
LnGrp LOS	D	E	E	F	E	C	D	D	C	D	C	B
Approach Vol, veh/h		343			669			2131			2050	
Approach Delay, s/veh		56.1			62.5			39.4			27.1	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.2	54.0	16.0	18.8	31.2	54.0	16.7	18.1
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	15.0	48.0	* 12	24.0	15.0	48.0	* 12	24.0
Max Q Clear Time (g_c+I1), s	10.8	42.9	13.0	10.7	4.0	33.5	2.0	9.3
Green Ext Time (p_c), s	0.5	4.5	0.0	1.2	0.9	10.0	0.7	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	38.6
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

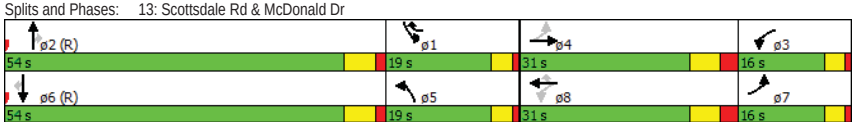
Two Way Analysis cannot be performed on Signalized Intersection.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	19	54	16	31	19	54	16	31
Maximum Split (%)	15.8%	45.0%	13.3%	25.8%	15.8%	45.0%	13.3%	25.8%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	1	0.2	1	2	1	0.2	1	2
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	30	14	103	84	30	14	103
End Time (s)	103	84	30	14	103	84	30	14
Yield/Force Off (s)	99	78	26	7	99	78	26	7
Yield/Force Off 170(s)	99	62	26	103	99	62	26	103
Local Start Time (s)	54	0	104	73	54	0	104	73
Local Yield (s)	69	48	116	97	69	48	116	97
Local Yield 170(s)	69	32	116	73	69	32	116	73

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	95

Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



APPENDIX E

TRIP GENERATION CALCULATIONS

Ritz Carlton Resort

Traffic Impact Analysis

Proposed

Trip Generation

Land Use	ITE LUC	ITE Land Use Name	Quantity	Units	AM Distribution In	AM Distribution Out	PM Distribution In	PM Distribution Out
Parcel A								
Resort Hotel	330	Resort Hotel	200	Rooms	72%	28%	43%	57%
Parcel A1								
Resort Hotel	330	Resort Hotel	120	Rooms	72%	28%	43%	57%
Parcel B								
Homes	210	Single-Family Detached Housing	89	Dwelling Units	25%	75%	63%	37%
Parcel C								
Homes	210	Single-Family Detached Housing	55	Dwelling Units	25%	75%	63%	37%
Parcel D								
Residential Condominium/ Townhouse	230	Residential Condominium/Townhouse	100	Dwelling Units	17%	83%	67%	33%
Parcel E								
Residential Condominium/ Townhouse	230	Residential Condominium/Townhouse	200	Dwelling Units	17%	83%	67%	33%
Shopping Center	820	Shopping Center	85.000	KSF	62%	38%	48%	52%
Grocery store/Supermarket	850	Supermarket	10.000	KSF	62%	38%	51%	49%
Quality Restaurant	931	Quality Restaurant	12.000	KSF	75%	25%	67%	33%
General Office Building	710	General Office Building	44.000	KSF	88%	12%	17%	83%

Land Use	ADT Avg Rate	ADT Total	AM Peak Hour Avg Rate	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour Avg Rate	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Parcel A										
Resort Hotel	5.00	1,000	0.60	87	34	121	0.42	36	48	84
Parcel A1										
Resort Hotel	5.00	600	0.74	64	25	89	0.42	22	29	51
Parcel B										
Homes	10.60	944	0.81	18	55	73	1.06	60	35	95
Parcel C										
Homes	11.02	606	0.88	12	37	49	1.12	39	23	62
Parcel D										
Residential Condominium/ Townhouse	6.43	644	0.52	9	43	52	0.60	41	20	61
Parcel E										
Residential Condominium/ Townhouse	5.88	1,176	0.45	15	75	90	0.53	72	35	107
Shopping Center	71.89	6,112	1.66	88	54	142	6.32	258	280	538
Grocery store/Supermarket	206.11	2,062	3.40	21	13	34	14.84	76	73	149
Quality Restaurant	89.95	1,080	0.81	8	2	10	7.49	60	30	90
General Office Building	11.03	486	1.56	61	8	69	1.49	11	55	66
TOTALS		**14,710**		**383**	**346**	**729**		**675**	**628**	**1,303**

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Notes : *1. This trip generation calculation is provided for the entire development without applied volume reductions taken as part of this study. If applicable, trips net of interaction and pass-by trips are shown below.*

	Daily		AM Peak Hour				PM Peak Hour			
	Percentage	Trips	Percentage	In	Out	Total	Percentage	In	Out	Total
Interaction/Internal Capture	Factor	20%	20%				20%			
	Differences	2,942		77	69	146		135	126	261
	Net Trips	11,768		306	277	583		540	502	1,042

Ritz Carlton Resort

Traffic Impact Analysis

Proposed

Trip Generation

Land Use	ITE LUC	ITE Land Use Name	Quantity	Units	AM Distribution In	AM Distribution Out	PM Distribution In	PM Distribution Out
Parcel A								
Resort Hotel	330	Resort Hotel	200	Rooms	72%	28%	43%	57%
Parcel A1								
Resort Hotel	330	Resort Hotel	120	Rooms	72%	28%	43%	57%
Parcel B								
Homes	210	Single-Family Detached Housing	89	Dwelling Units	25%	75%	63%	37%
Parcel C								
Homes	210	Single-Family Detached Housing	55	Dwelling Units	25%	75%	63%	37%
Parcel D								
Residential Condominium/ Townhouse	230	Residential Condominium/Townhouse	100	Dwelling Units	17%	83%	67%	33%
Parcel E								

Land Use	ADT Avg Rate	ADT Total	AM Peak Hour Avg Rate	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour Avg Rate	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Parcel A										
Resort Hotel	5.00	1,000	0.60	87	34	121	0.42	36	48	84
Parcel A1										
Resort Hotel	5.00	600	0.74	64	25	89	0.42	22	29	51
Parcel B										
Homes	10.60	944	0.81	18	55	73	1.06	60	35	95
Parcel C										
Homes	11.02	606	0.88	12	37	49	1.12	39	23	62
Parcel D										
Residential Condominium/ Townhouse	6.43	644	0.52	9	43	52	0.60	41	20	61
Parcel E										
TOTALS		**3,794**		**190**	**194**	**384**		**198**	**155**	**353**

CivTech

Notes : *1. This trip generation calculation is provided for the entire development without applied volume reductions taken as part of this study. If applicable, trips net of interaction and pass-by trips are shown below.*

	Daily		AM Peak Hour				PM Peak Hour			
	Percentage	Trips	Percentage	In	Out	Total	Percentage	In	Out	Total
Interaction/Internal Capture	Factor									
	Differences									
	Net Trips	3,794		190	194	384		198	155	353

ITE MULTI-USE PROJECT INTERNAL CAPTURE WORKSHEET

(Source: Chapter 7, ITE *Trip Generation Handbook, Second Edition*, June 2004)

Analyst: Ruth Gutierrez
Date: 8/7/2015

Analysis Period:
Midday _____ PM _____ Daily X

Land Use A: Office

ITE LUC: 710
Size: 44 KSF

	Total	Internal	External
Enter	243	36	207
Exit	243	63	180
Total	486	99	387
%	100%	20%	80%

Enter from External: 207
Exit to External: 180

Demand 2% 5
Balanced 5
Demand 3% 24

Demand 22% 53
Balanced 53
Demand 4% 185

Demand
Balanced
Demand

<- Demand -> 2% 5
Balanced 5
Demand 3% 51

Land Use B: Residential

Land Use: 330
Size: 320 Units

	Total	Internal	External
Enter	800	269	531
Exit	800	304	496
Total	1,600	573	1,027
%	100%	36%	64%

Enter from External: 531
Exit to External: 496

Demand
Balanced
Demand

33% 264 Demand
264 Balanced
11% 509 <- Demand ->

Land Use D: Residential

ITE LUC: 210, 230
Size: 444 DU

	Total	Internal	External
Enter	1,685	514	1,171
Exit	1,685	416	1,269
Total	3,370	930	2,440
%	100%	28%	72%

1,171 Enter from External:
1,269 Exit to External:

Demand
Balanced
Demand

Demand 38% 640
Balanced 416
9% 416

15% 36 Demand
36 Balanced
3% 139 Demand

Demand 38% 304
Balanced 304
Demand 9% 416

33% 556 Demand
509 Balanced
11% 509 Demand

Land Use C: Retail

ITE LUC: 820, 850, 931
Size: 107 KSF

	Total	Internal	External
Enter	4,627	773	3,854
Exit	4,627	809	3,818
Total	9,254	1,582	7,672
%	100%	17%	83%

3,854 Enter from External:
3,818 Exit to External:

NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT

Category	Land Use A Office	B Residen	C Retail	D Residen	Total	
Enter	207	531	3,818	1,171	5,727	
Exit	180	496	3,854	1,269	5,799	
Total	387	1,027	7,672	2,440	11,526	
Single Use Trip Gen Estima	486	1,600	9,254	3,370	14,710	Internal Capture 21.65%

Print Date = 08/11/15
Print Time = 10:51 AM

CivTech

APPENDIX F

TRIP DISTRIBUTION CALCULATIONS

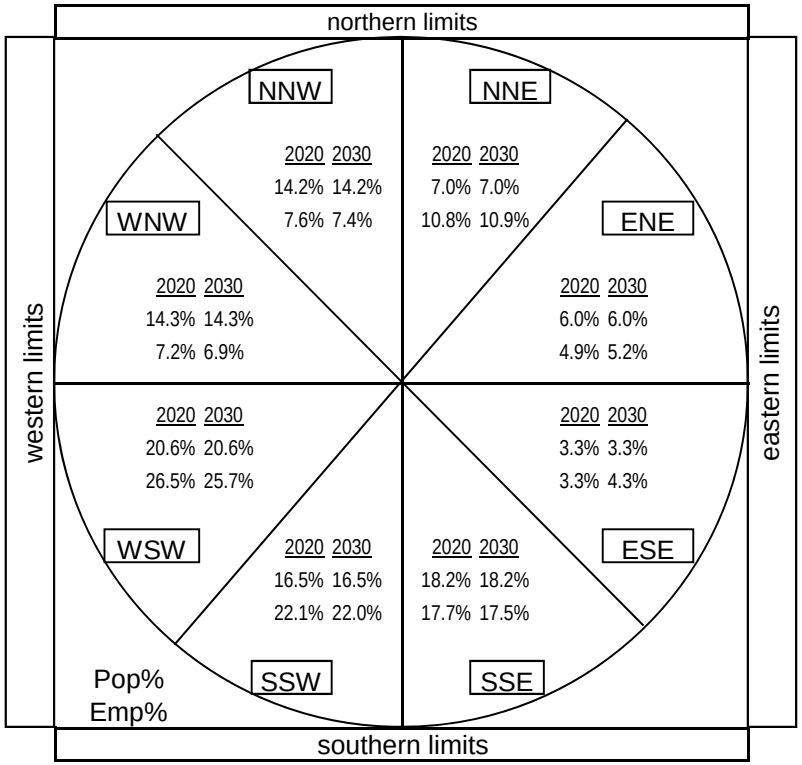
Ritz-Carlton

Trip Distribution - Summaries

	2020				2030			
Quadrant	**Population**	**Percent**	**Employment**	**Percent**	**Population**	**Percent**	**Employment**	**Percent**
North Northwest	151,760	14.2%	68,119	7.6%	151,760	14.2%	73,664	7.4%
North Northeast	74,408	7.0%	96,569	10.8%	74,408	7.0%	107,701	10.9%
North	226,168	21.2%	164,688	18.4%	226,168	**21.2%**	181,365	**18.3%**
East Northeast	63,704	6.0%	43,636	4.9%	63,704	6.0%	51,788	5.2%
East Southeast	34,942	3.3%	29,525	3.3%	34,942	3.3%	42,449	4.3%
East	98,646	9.3%	73,161	8.2%	98,646	**9.3%**	94,237	**9.5%**
South Southeast	194,635	18.2%	158,456	17.7%	194,635	18.2%	173,613	17.5%
South Southwest	176,374	16.5%	198,590	22.1%	176,374	16.5%	218,249	22.0%
South	371,009	34.7%	357,046	39.8%	371,009	**34.7%**	391,863	**39.6%**
West Southwest	219,912	20.6%	237,714	26.5%	219,912	20.6%	254,589	25.7%
West Northwest	153,121	14.3%	64,519	7.2%	153,121	14.3%	68,093	6.9%
West	373,033	34.9%	302,234	33.7%	373,033	**34.9%**	322,682	**32.6%**
Totals	1,068,855	100.1%	897,128	100.1%	1,068,855	100.1%	990,147	100.0%

Radii

Population (Applied to Office Trips): 10-mile
Employment (Applied to Residential): 10-mile



Ritz-Carlton

Trip Distribution - Pop from North

10-mile

RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted
NNW							**NNE**						
226	PH	72,964	72,964	15%	10,945	10,945	228	PH	43,702	43,702	10%	4,370	4,370
227	PH	66,288	66,288	50%	33,144	33,144	230	SC	35,670	35,670	60%	21,402	21,402
228	PH	43,702	43,702	45%	19,666	19,666	246	PH	61,815	61,815	5%	3,091	3,091
242	PH	30,883	30,883	15%	4,632	4,632	247	SC	14,007	14,007	95%	13,307	13,307
245	PH	59,725	59,725	35%	20,904	20,904	248	SC	41,120	41,120	50%	20,560	20,560
246	PH	61,815	61,815	95%	58,724	58,724	262	PA	15,224	15,224	5%	761	761
247	SC	14,007	14,007	5%	700	700	263	SC	36,390	36,390	30%	10,917	10,917
262	PA	15,224	15,224	20%	3,045	3,045		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
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From North					151,760	151,760						74,408	74,408
												226,168	226,168

Ritz-Carlton

Trip Distribution - Pop from East

10-mile

RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted
ENE							**ESE**						
230	SC	35,670	35,670	20%	7,134	7,134	263	SC	36,390	36,390	30%	10,917	10,917
248	SC	41,120	41,120	50%	20,560	20,560	264	SA	7,308	7,308	50%	3,654	3,654
249	SC	26,257	26,257	90%	23,631	23,631	290	ME	90,250	90,250	10%	9,025	9,025
263	SC	36,390	36,390	30%	10,917	10,917	291	ME	56,729	56,729	20%	11,346	11,346
264	SA	7,308	7,308	20%	1,462	1,462		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
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From East					63,704	63,704						34,942	34,942
												98,646	98,646

Ritz-Carlton

Trip Distribution - Pop from South

10-mile

RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted
SSE							**SSW**						
262	PA	15,224	15,224	5%	761	761	262	PA	15,224	15,224	10%	1,522	1,522
263	SC	36,390	36,390	10%	3,639	3,639	271	PH	65,950	65,950	35%	23,083	23,083
264	SA	7,308	7,308	30%	2,192	2,192	272	SC	72,196	72,196	15%	10,829	10,829
272	SC	72,196	72,196	85%	61,367	61,367	276	PH	54,236	54,236	80%	43,389	43,389
288	TE	80,881	80,881	50%	40,441	40,441	286	PH	24,040	24,040	5%	1,202	1,202
289	ME	72,270	72,270	70%	50,589	50,589	287	PH	35,438	35,438	80%	28,350	28,350
290	ME	90,250	90,250	25%	22,563	22,563	288	TE	80,881	80,881	50%	40,441	40,441
297	TE	52,336	52,336	25%	13,084	13,084	296	PH	48,246	48,246	30%	14,474	14,474
	-	-	-		-	-	297	TE	52,336	52,336	25%	13,084	13,084
	-	-	-		-	-		-	-	-		-	-
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From South					194,635	194,635						176,374	176,374
												371,009	371,009

Ritz-Carlton

Trip Distribution - Pop from West

10-mile

RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted
WSW							**WNW**						
260	PH	61,089	61,089	60%	36,653	36,653	242	PH	30,883	30,883	50%	15,442	15,442
261	PH	33,390	33,390	55%	18,365	18,365	243	PH	72,963	72,963	5%	3,648	3,648
262	PA	15,224	15,224	30%	4,567	4,567	244	PH	60,306	60,306	95%	57,291	57,291
270	PH	89,683	89,683	80%	71,746	71,746	245	PH	59,725	59,725	65%	38,821	38,821
271	PH	65,950	65,950	65%	42,868	42,868	260	PH	61,089	61,089	30%	18,327	18,327
275	PH	60,239	60,239	50%	30,120	30,120	261	PH	33,390	33,390	45%	15,026	15,026
276	PH	54,236	54,236	20%	10,847	10,847	262	PA	15,224	15,224	30%	4,567	4,567
286	PH	24,040	24,040	5%	1,202	1,202		-	-	-		-	-
287	PH	35,438	35,438	10%	3,544	3,544		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
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From West					219,912	219,912						153,121	153,121
												373,033	373,033

Ritz-Carlton

Trip Distribution - Emp from North

10-mile

RAZ	MPA	2020 Employment	2030 Employment	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Employment	2030 Employment	% of TAZ	2020 Adjusted	2030 Adjusted
NNW							**NNE**						
226	PH	22,773	23,681	15%	3,416	3,552	228	PH	33,621	42,763	10%	3,362	4,276
227	PH	16,077	18,036	50%	8,039	9,018	230	SC	36,850	49,197	60%	22,110	29,518
228	PH	33,621	42,763	45%	15,129	19,243	246	PH	31,742	31,757	5%	1,587	1,588
242	PH	9,341	9,284	15%	1,401	1,393	247	SC	48,204	50,778	95%	45,794	48,239
245	PH	17,221	17,152	35%	6,027	6,003	248	SC	27,822	28,456	50%	13,911	14,228
246	PH	31,742	31,757	95%	30,155	30,169	262	PA	7,707	8,734	5%	385	437
247	SC	48,204	50,778	5%	2,410	2,539	263	SC	31,399	31,383	30%	9,420	9,415
262	PA	7,707	8,734	20%	1,541	1,747		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
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From North					68,119	73,664						96,569	107,701
												164,688	181,365

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Trip Distribution - Emp from East

10-mile

RAZ	MPA	2020 Employment	2030 Employment	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Employment	2030 Employment	% of TAZ	2020 Adjusted	2030 Adjusted
ENE							**ESE**						
230	SC	36,850	49,197	20%	7,370	9,839	263	SC	31,399	31,383	30%	9,420	9,415
248	SC	27,822	28,456	50%	13,911	14,228	264	SA	25,587	49,905	50%	12,794	24,953
249	SC	8,687	9,250	90%	7,818	8,325	290	ME	38,852	39,199	10%	3,885	3,920
263	SC	31,399	31,383	30%	9,420	9,415	291	ME	17,131	20,806	20%	3,426	4,161
264	SA	25,587	49,905	20%	5,117	9,981		-	-	-		-	-
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From East					43,636	51,788						29,525	42,449
												73,161	94,237

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Trip Distribution - Emp from South

10-mile

RAZ	MPA	2020 Employment	2030 Employment	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Employment	2030 Employment	% of TAZ	2020 Adjusted	2030 Adjusted
SSE							**SSW**						
262	PA	7,707	8,734	5%	385	437	262	PA	7,707	8,734	10%	771	873
263	SC	31,399	31,383	10%	3,140	3,138	271	PH	50,862	50,850	35%	17,802	17,798
264	SA	25,587	49,905	30%	7,676	14,972	272	SC	56,988	56,913	15%	8,548	8,537
272	SC	56,988	56,913	85%	48,440	48,376	276	PH	26,422	27,288	80%	21,138	21,830
288	TE	105,832	120,280	50%	52,916	60,140	286	PH	21,000	21,455	5%	1,050	1,073
289	ME	32,873	33,713	70%	23,011	23,599	287	PH	82,722	96,393	80%	66,178	77,114
290	ME	38,852	39,199	25%	9,713	9,800	288	TE	105,832	120,280	50%	52,916	60,140
297	TE	52,700	52,608	25%	13,175	13,152	296	PH	56,709	59,106	30%	17,013	17,732
	-	-	-		-	-	297	TE	52,700	52,608	25%	13,175	13,152
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From South					158,456	173,613						198,590	218,249
												357,046	391,863

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Trip Distribution - Emp from West

10-mile

RAZ	MPA	2020 Em-ployment	2030 Em-ployment	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Em-ployment	2030 Em-ployment	% of TAZ	2020 Adjusted	2030 Adjusted
WSW							**WNW**						
260	PH	39,927	48,280	60%	23,956	28,968	242	PH	9,341	9,284	50%	4,671	4,642
261	PH	35,618	35,610	55%	19,590	19,586	243	PH	52,268	71,341	5%	2,613	3,567
262	PA	7,707	8,734	30%	2,312	2,620	244	PH	16,551	16,428	95%	15,723	15,607
270	PH	107,042	117,712	80%	85,634	94,170	245	PH	17,221	17,152	65%	11,194	11,149
271	PH	50,862	50,850	65%	33,060	33,053	260	PH	39,927	48,280	30%	11,978	14,484
275	PH	117,111	120,047	50%	58,556	60,024	261	PH	35,618	35,610	45%	16,028	16,025
276	PH	26,422	27,288	20%	5,284	5,458	262	PA	7,707	8,734	30%	2,312	2,620
286	PH	21,000	21,455	5%	1,050	1,073		-	-	-		-	-
287	PH	82,722	96,393	10%	8,272	9,639		-	-	-		-	-
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From West					237,714	254,589						64,519	68,093
												302,234	322,682

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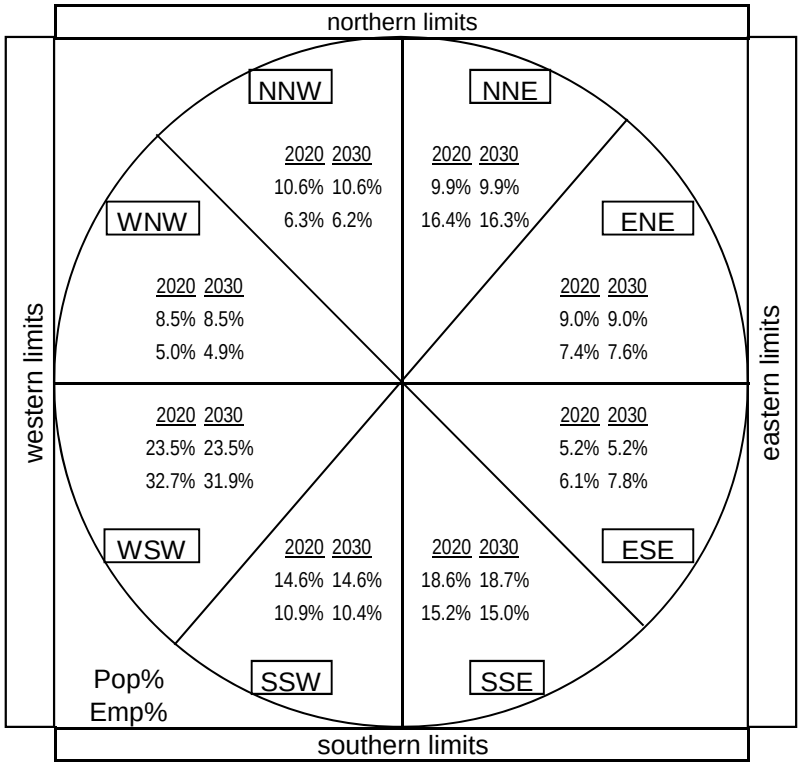
Trip Distribution - Summaries

	2020				2030			
Quadrant	**Population**	**Percent**	**Employment**	**Percent**	**Population**	**Percent**	**Employment**	**Percent**
North Northwest	25,380	10.6%	15,061	6.3%	25,380	10.6%	15,401	6.2%
North Northeast	23,494	9.9%	39,099	16.4%	23,494	9.9%	40,625	16.3%
North	48,874	20.5%	54,161	22.7%	48,874	**20.5%**	56,026	**22.4%**
East Northeast	21,562	9.0%	17,655	7.4%	21,562	9.0%	19,024	7.6%
East Southeast	12,379	5.2%	14,537	6.1%	12,379	5.2%	19,396	7.8%
East	33,941	14.2%	32,192	13.5%	33,941	**14.2%**	38,420	**15.4%**
South Southeast	44,473	18.6%	36,148	15.2%	44,473	18.7%	37,372	15.0%
South Southwest	34,849	14.6%	25,899	10.9%	34,849	14.6%	26,030	10.4%
South	79,322	33.2%	62,047	26.1%	79,322	**33.3%**	63,402	**25.4%**
West Southwest	56,141	23.5%	77,907	32.7%	56,141	23.5%	79,679	31.9%
West Northwest	20,204	8.5%	12,019	5.0%	20,204	8.5%	12,315	4.9%
West	76,345	32.0%	89,926	37.7%	76,345	**32.0%**	91,994	**36.8%**
Totals	238,483	99.9%	238,325	100.0%	238,483	100.0%	249,842	100.0%

Radii

Population (Applied to Retail Trips): 5-mile
Employment (Not Used): 5-mile



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Trip Distribution - Pop from North

5-mile

RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted
NNW							**NNE**						
	-	-	-		-	-		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
	-	-	-		-	-	247	SC	14,007	14,007	55%	7,704	7,704
	-	-	-		-	-	248	SC	41,120	41,120	10%	4,112	4,112
246	PH	61,815	61,815	35%	21,635	21,635	262	PA	15,224	15,224	5%	761	761
247	SC	14,007	14,007	5%	700	700	263	SC	36,390	36,390	30%	10,917	10,917
262	PA	15,224	15,224	20%	3,045	3,045		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
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From North					25,380	25,380						23,494	23,494
												48,874	48,874

Ritz-Carlton

Trip Distribution - Pop from East

5-mile

RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted
ENE							**ESE**						
	-	-	-		-	-	263	SC	36,390	36,390	30%	10,917	10,917
248	SC	41,120	41,120	25%	10,280	10,280	264	SA	7,308	7,308	20%	1,462	1,462
	-	-	-	90%	-	-		-	-	-		-	-
263	SC	36,390	36,390	30%	10,917	10,917		-	-	-		-	-
264	SA	7,308	7,308	5%	365	365		-	-	-		-	-
	-	-	-		-	-		-	-	-		-	-
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From East					21,562	21,562						12,379	12,379
												33,941	33,941

Ritz-Carlton

Trip Distribution - Pop from South

5-mile

RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted
SSE							**SSW**						
262	PA	15,224	15,224	5%	761	761	262	PA	15,224	15,224	10%	1,522	1,522
263	SC	36,390	36,390	10%	3,639	3,639	271	PH	65,950	65,950	30%	19,785	19,785
264	SA	7,308	7,308	5%	365	365	272	SC	72,196	72,196	15%	10,829	10,829
272	SC	72,196	72,196	55%	39,708	39,708	276	PH	54,236	54,236	5%	2,712	2,712
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From South					44,473	44,473						34,849	34,849
												79,322	79,322

Ritz-Carlton

Trip Distribution - Pop from West

5-mile

RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted	RAZ	MPA	2020 Population	2030 Population	% of TAZ	2020 Adjusted	2030 Adjusted
WSW							**WNW**						
	-	-	-		-	-		-	-	-		-	-
261	PH	33,390	33,390	5%	1,670	1,670		-	-	-		-	-
262	PA	15,224	15,224	30%	4,567	4,567		-	-	-		-	-
	-	-	-		-	-	245	PH	59,725	59,725	15%	8,959	8,959
271	PH	65,950	65,950	30%	19,785	19,785		-	-	-		-	-
275	PH	60,239	60,239	50%	30,120	30,120	261	PH	33,390	33,390	20%	6,678	6,678
	-	-	-		-	-	262	PA	15,224	15,224	30%	4,567	4,567
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From West					56,141	56,141						20,204	20,204
												76,345	76,345

APPENDIX G

BACKGROUND TRAFFIC CALCULATIONS AND EXCERPTS FROM BACKGROUND DEVELOPMENTS

CivTech

Mountain Shadows Resort

Columbia, MD Area 24, Lot 7 Site Plan

Traffic
Impact
Study

Division of Section 6
[illegible] Phase 2 Part 2 Part

August 2007
[illegible]

Prepared for:

Crown Realty and Development
[illegible] Van Karman Avenue, Suite 850
[illegible]
[illegible]

By:

CivTech

[illegible]
[illegible]
[illegible]

MOUNTAIN SHADOWS RESORT
TRAFFIC IMPACT ANALYSIS
Submittal for June 26, 2007 Site Plan

Portion of Southeast Section 8, and Southwest Section 9
Township 2 North, Range 4 East

Prepared for:
Crown Realty and Development
18201 Von Karman Avenue
Suite 950
Irvine, California 92612
(949) 476-2200

By:

CivTech, Inc.
8590 East Shea Boulevard
Suite 130
Scottsdale, Arizona 85260
(480) 659-4250

Registered Professional Engineer (Civil)
CERTIFICATE NO.
35679
DAWN D.
CARTIER
Date Signed 8/30/07
ARIZONA, U.S.A.

August 2007
CivTech Project No. 05-380

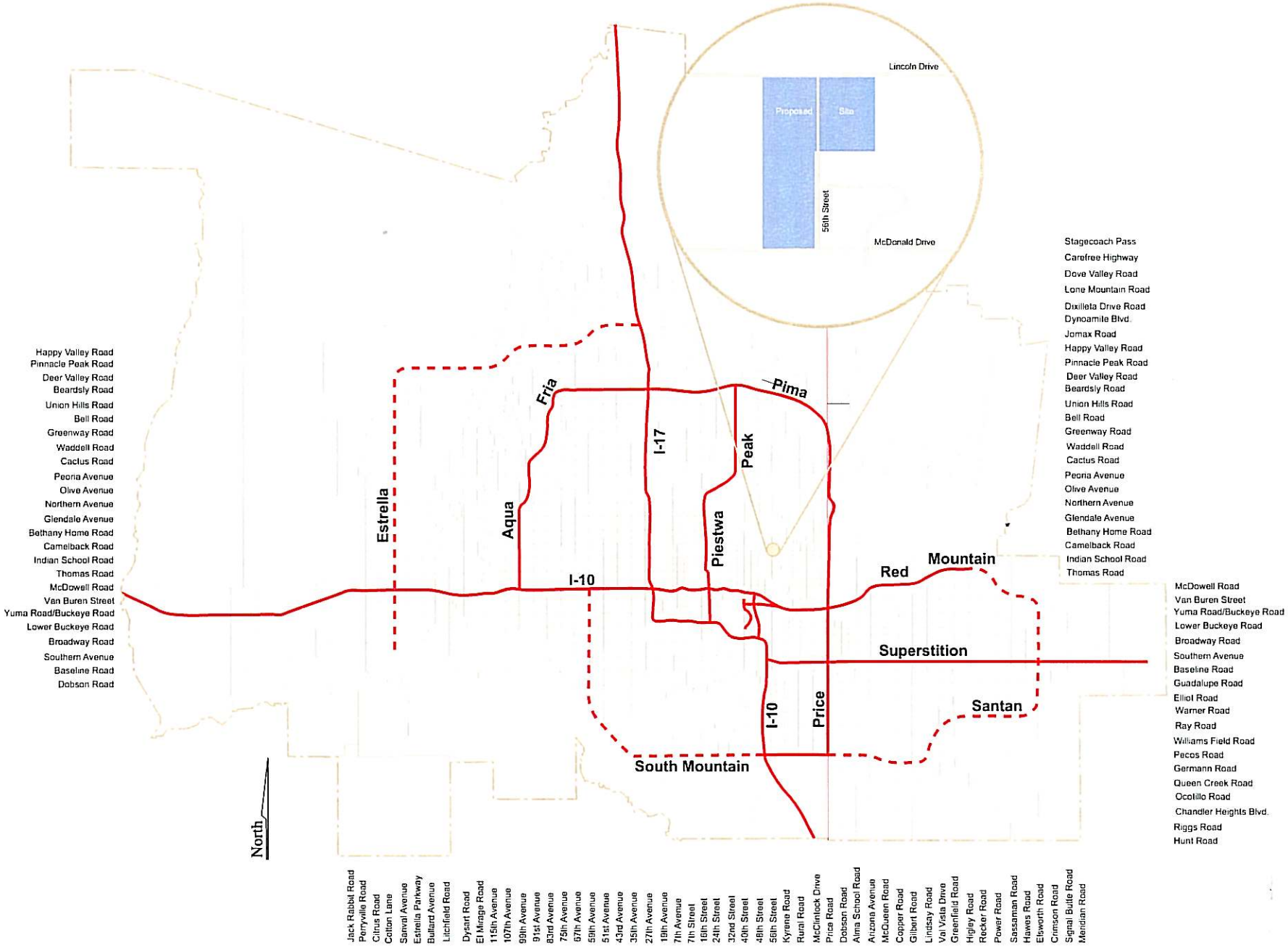

Figure 1:
Location Map

Mountain Shadows

CivTech

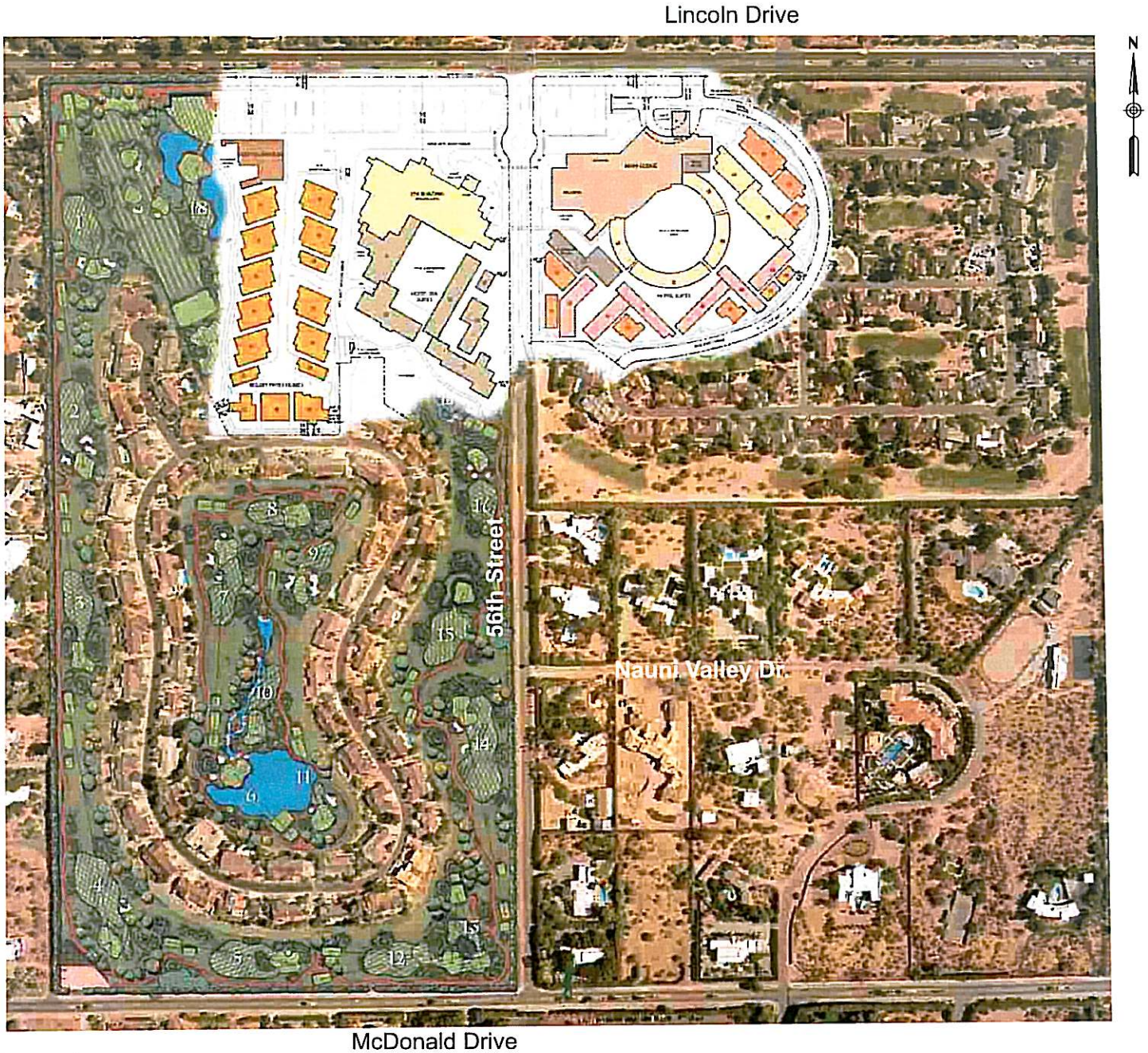

Figure 4:
Site Plan

Mountain Shadows

CivTech

TRIP GENERATION

The average daily traffic (ADT), AM peak hour and PM peak hour volumes have been estimated by trip rates given in the Institute of Transportation Engineers (ITE) *Trip Generation, 7th Edition.* Table 2 shows the trip generation established for this redevelopment. Detailed trip generation calculations for both the existing and planned redevelopment have been included in Appendix D. Average trip rates from ITE's *Trip Generation* were used in the calculation of site generated traffic.

To obtain a conservative estimate of the number of external trips generated by the site, interaction between the uses at the site was not considered.

Table 2 – Trip Generation

Proposed Use	ITE LUC	Land Use	Units	Total	AM Distribution In	AM Distribution Out	PM Distribution In	PM Distribution Out
East Side of 56th St	330	Resort Hotel	Rooms	200	72%	28%	43%	57%
West Side of 56th St								
Hotel Spa Suites	330	Resort Hotel	Rooms	120	72%	28%	43%	57%
Resort Patio Homes	233	Attached Residential	Dwelling Units	26	23%	77%	63%	37%

Proposed Use	ADT Avg Rate	ADT Total	AM Peak Hour Avg Rate	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Avg Rate	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out
East Side of 56th St	6.24[1]	1,248	0.37	74	53	21	0.49	98	42	56
West Side of 56th St										
Hotel Spa Suites	6.24[1]	750	0.37	45	32	13	0.49	59	24	34
Resort Patio Homes	5.86[2]	154	0.56	15	3	12	0.55	15	9	6
TOTALS		2,152		134	88	46		172	76	96

Notes: *1. In the absence of a published rate, this trip generation rate was taken from "All Suites Hotel" (LUC 311), a use considered in Trip Generation as related to a "Resort Hotel".*

2. In the absence of a published rate, this trip generation rate was taken from "Residential Condominiums/Townhouses" (LUC 230) since these will be privately-owned units.

The resort patio homes have been studied herein as a residential land use, Luxury Condominium/Townhouse (ITE Land Use Code 233), with the daily rate taken from Residential Condominium/Townhouse (ITE LUC 230).

The hotel spa suites on the west side of 56th Street will be 90 units with a total of 120 keys. Although they will be privately-owned, they will be made available for rental through the hotel. Thus, for the purposes of this analysis, they are considered as being included in the hotel rental pool and are treated as 120 individual resort hotel rooms. This is a conservative approach as the multiple-key units will often operate as single-key units. Since there is no published ITE daily trip generation rate for a Resort Hotel, the daily trip generation rate for an "All Suites Hotel" (ITE LUC 311) was used. This rate was updated in the most recent version of the Trip Generation manual and varies from the value used in previous versions of this study.

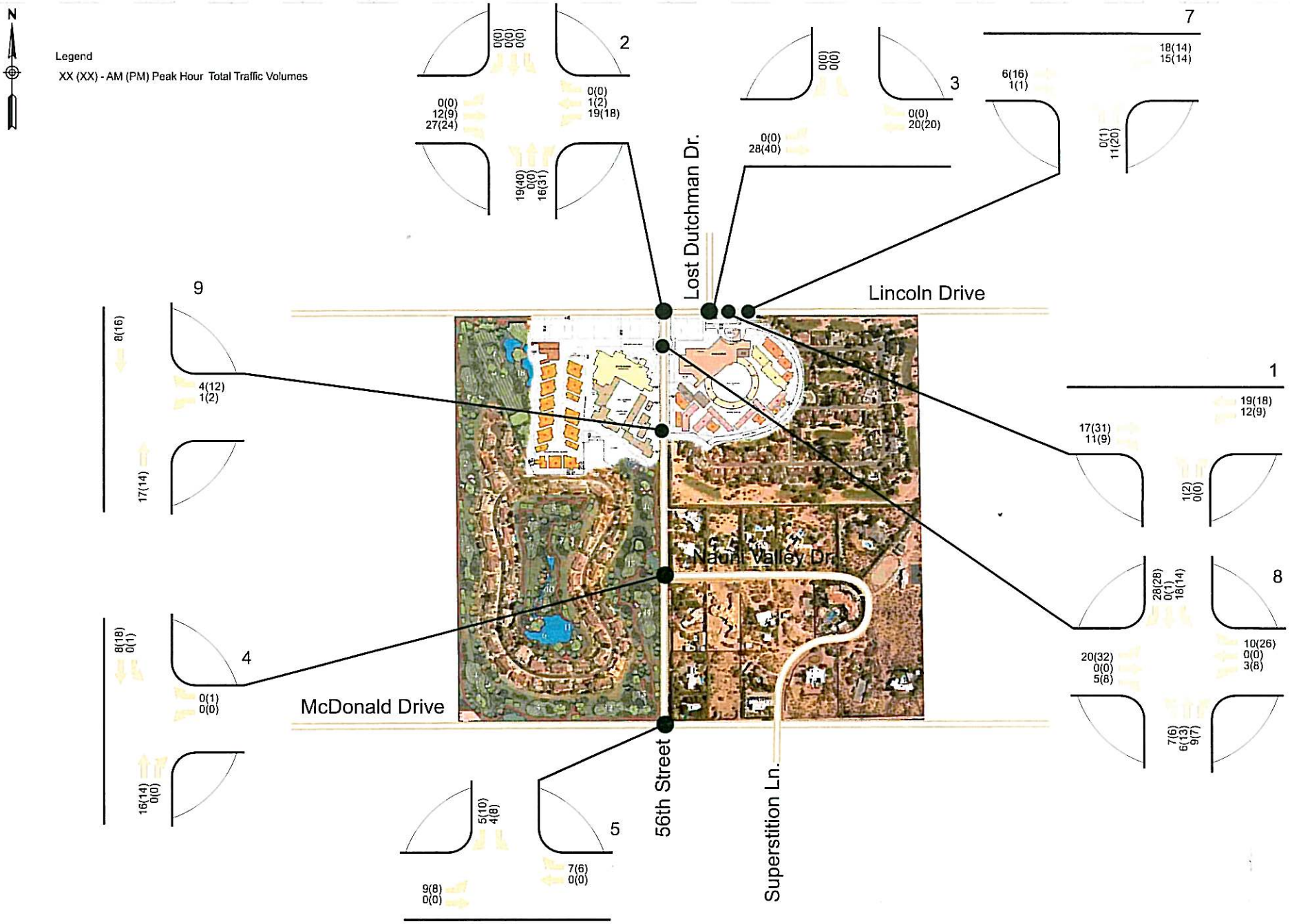

Figure 6:
Buildout Site Generated Traffic

Mountain Shadows

CivTech

Palmeraie

Traffic
Impact
and
Mitigation
Analysis

SWC Scottsdale Road and Indian Bend
Scottsdale, Arizona

April 2009
Project No. 07-180B

Prepared For:
City of Scottsdale
7900 East Indian School Road
Scottsdale, Arizona
(480) 312-7696

Prepared By:

CivTech

10605 North Hayden Road
Suite 140
Scottsdale, Arizona 85260
480-659-4250

PALMERAIE
TRAFFIC IMPACT AND MITIGATION ANALYSIS

1048-PA-2008

SWC Scottsdale Road and Indian Bend Road
Scottsdale, Arizona

Prepared for:

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Registered Professional Engineer (Civil)
CERTIFICATE No. 16255
JOSEPH F. SPADAFINO
Date Signed 4-20-09
ARIZONA, U.S.A.
Expires 6/30/2010

Prepared: February 2009
Updated: April 2009
CivTech Project No. 07-180B

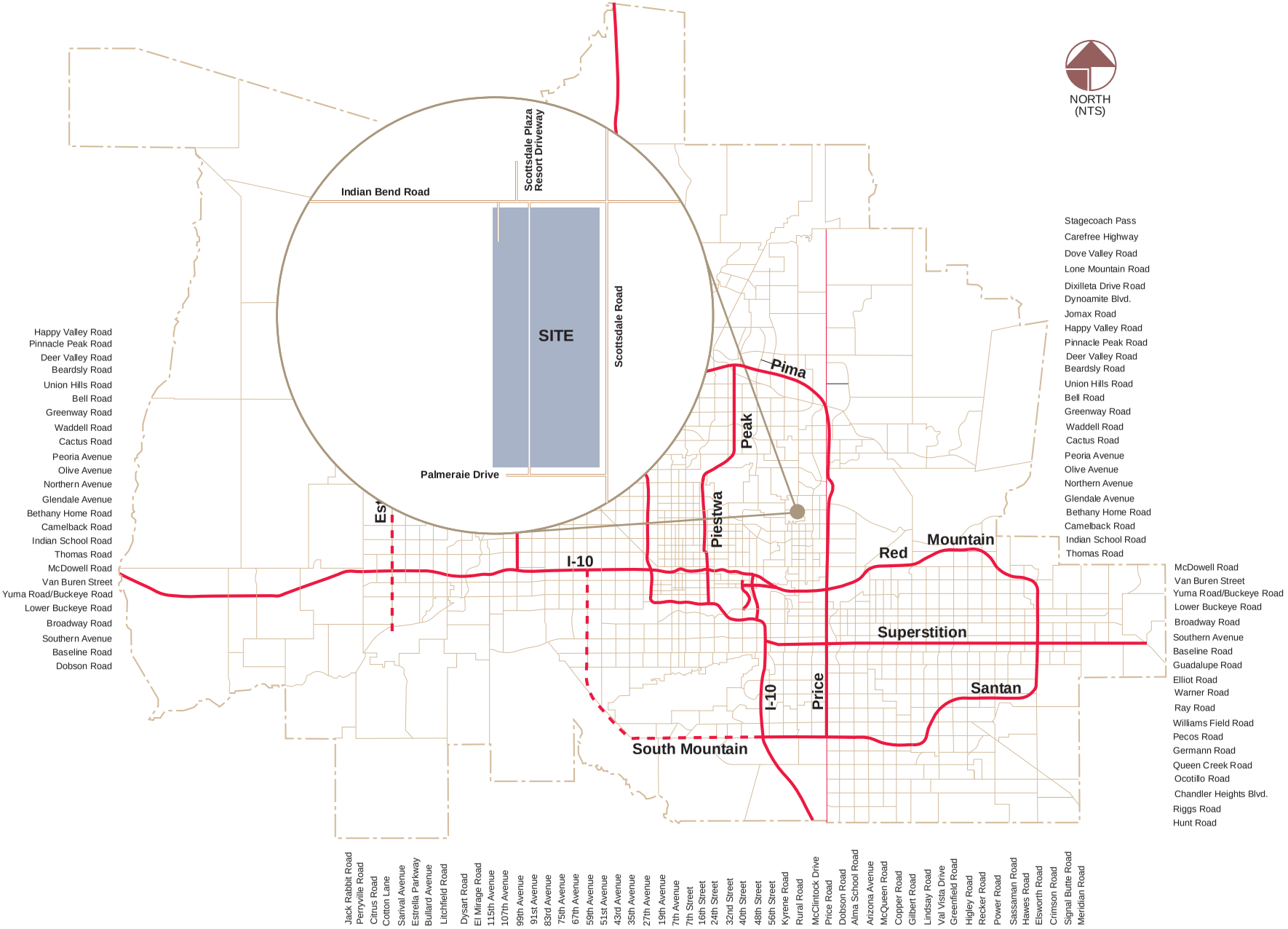


Figure 1: Vicinity Map

PROPOSED DEVELOPMENT

LOCATION AND ACCESS

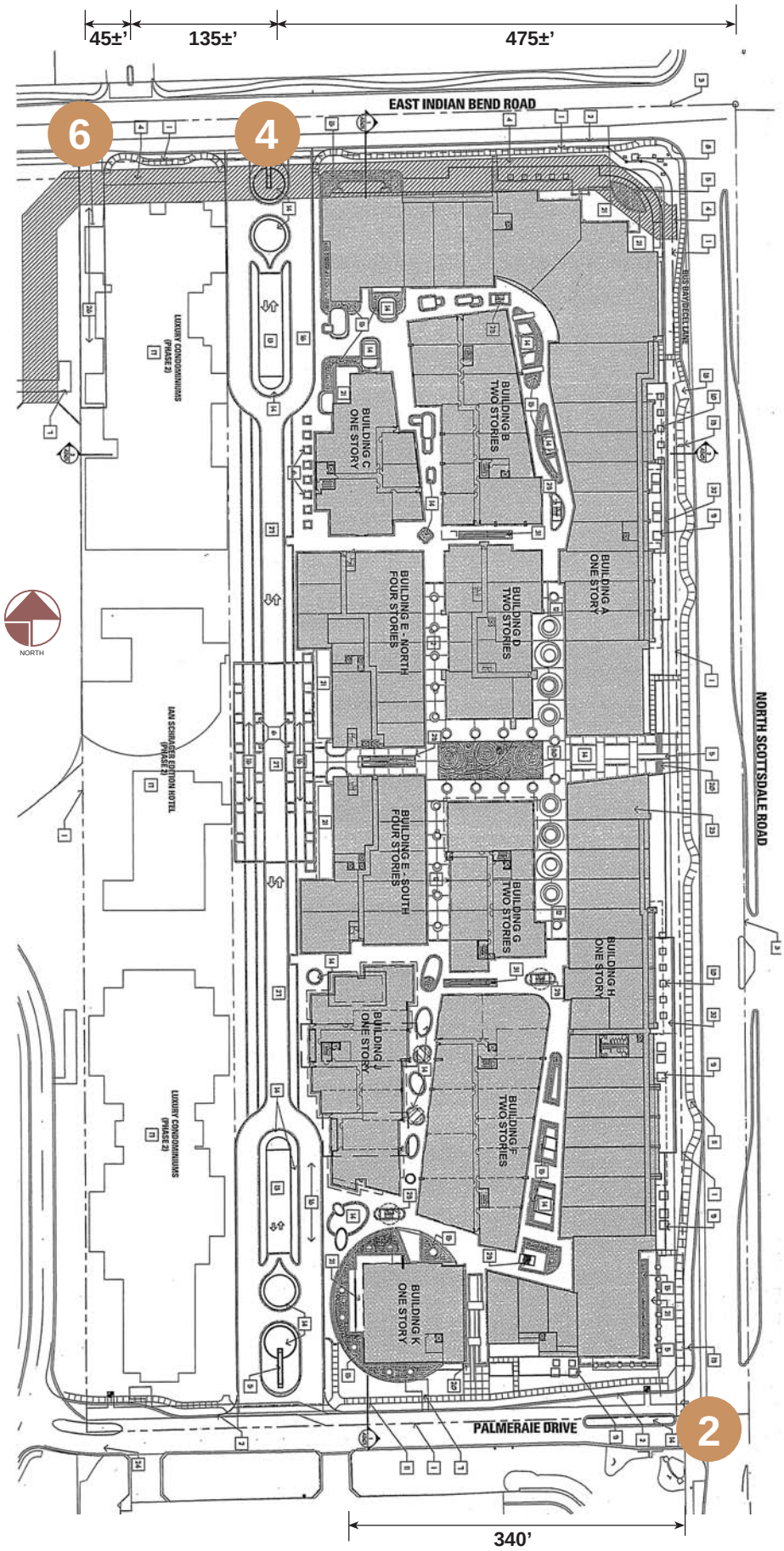
The proposed development site is located on the southwest corner of Scottsdale Road and Indian Bend Road. With reference to **Figure 4**, three driveways will provide direct access to and from the site. In the northwest corner of the site, there will be a full-access (i.e., no movements restricted) service driveway to Indian Bend Road. The second driveway is a full access driveway at Indian Bend Road, from which a main drive will run the length of the site south to 6750 North, dividing the residential and hotel uses from the retail uses. The third driveway is along 6750 North and will be located between two driveways approaching 6750 North from the south. This driveway is considered an internal driveway because 6750 North is privately owned; therefore, the level of service is not considered at issue in this analysis.

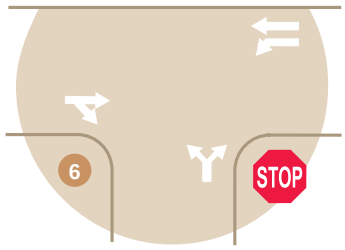
- Access A will be the eastern of the two proposed driveways for Indian Bend Road. It will be a full access driveway approximately 475 feet (on center) west of Scottsdale Road. This driveway will provide two outbound lanes for separate left- and right-turn lanes.
- Access B will be the western of the two proposed driveways for Indian Bend Road. It will be a truck entrance configured to provide full access without restriction, although truck drivers will be directed to enter from and exit to Scottsdale Road and the movements thus limited to left in and right out. It will provide be located approximately 180 feet west of Access A and 45 feet west of the Scottsdale Plaza Resort Driveway. Access B will provide one inbound and one outbound lane at Indian Bend Road.

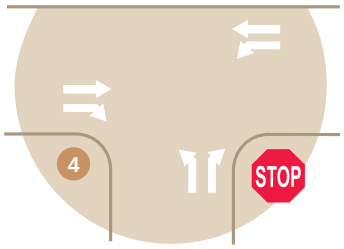
PROPOSED LAND USE AND INTENSITY

Subject to the approval of a request to rezone the property from its current R-4R, Resort Residential, zoning to PRC, the subject property will be allowed to develop into approximately 300,000 square feet of retail and restaurant land uses, a 175 room hotel, and 235 resort/hotel condominium dwelling units. The site plan is shown in **Figure 4**.

Build-out of the retail component is expected to be reached by the end of 2010, the first analysis year, with full build-out of the project by the second analysis year, 2015. To ensure that the estimate of traffic impacts is conservatively calculated, it will be assumed that the development will attract 100 percent of its trips upon opening in 2010.







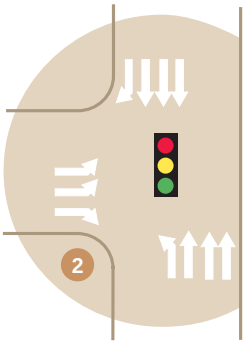


Figure 4: Site Plan and Access

with there not being a published ITE pass-by factor for the AM peak hour. The pass-by trips for the proposed development are presented in **Figure 7**.

Table 7 – Trip Generation

Proposed Use	ITE LUC	ITE Land Use Name	Total	Units	AM Distribution In	AM Distribution Out	PM Distribution In	PM Distribution Out
Under Current R-4R Zoning, no further permitting required								
Hotel or motel	310	Hotel	180	Rooms	58%	42%	49%	51%
Under Proposed PRC Zoning								
Luxury Condo/Townhouse	233	Luxury Condominium/Townhouse	235	Dwelling Units	23%	77%	63%	37%
Hotel or motel	310	Hotel	175	Rooms	58%	42%	49%	51%
Shopping Center	820	Shopping Center	300.000	KSF	61%	39%	48%	52%

Proposed Use	ADT Avg Rate	ADT Total	AM Peak Hour Avg Rate	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Avg Rate	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out
Under Current R-4R Zoning, no further permitting required										
Hotel or motel	8.92	1,606	0.67	121	70	51	0.70	126	62	64
Under Proposed PRC Zoning										
Luxury Condo/Townhouse	5.86	1,378	0.56	132	30	102	0.55	130	82	48
Hotel or motel	8.92	1,562	0.67	118	68	50	0.70	123	60	63
Shopping Center (5% reduction for other modes applied)	42.94	12,238	1.03	294	179	115	3.75	1,069	513	556
Totals		15,178		544	277	267		1,322	655	667
Additional Trips		13,572		423	207	216		1,196	593	603

Note: *1. This trip generation calculation is provided for the entire development without applied volume reductions taken as part of this study. If applicable, trips net of interaction and pass-by trips are shown below.*

		Daily Per-centage	Daily Trips	AM Peak Hour Per-centage	AM Peak Hour Trips	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Per-centage	PM Peak Hour Trips	PM Peak Hour In	PM Peak Hour Out
Interaction/Internal Capture	Factor	9%						12%			
	Differences		1,368						159	79	80
	Net Trips		13,810		544	277	267		1,163	576	587
Pass-By Trips											
Under Proposed PRC Zoning											
Shopping Center		5%	556					34%	330	165	165
Total Pass-By Trips			**556**						**330**	**165**	**165**
NET "NEW" TRIPS			**13,254**		**544**	**277**	**267**		**833**	**411**	**422**
(After interaction/internal capture & net of pass-by trips)											

TRIP GENERATION COMPARISON – APPROVED USES VS. PROPOSED USES

Had the entire 17-acre site been developed into a 180-room hotel, it would have added approximately 1,606 trips per day to the adjacent roadway, 121 of which would have been added during the AM peak hour and 126 of which would have been added during the PM peak hour. The rezoned development could generate 15,178 trips per day, 544 during the AM peak hour and 1,196 during the PM peak hour.

SITE TRAFFIC DISTRIBUTION

There are two major factors to consider when estimating the direction from which site traffic will be arriving when entering the development and where it will be headed when

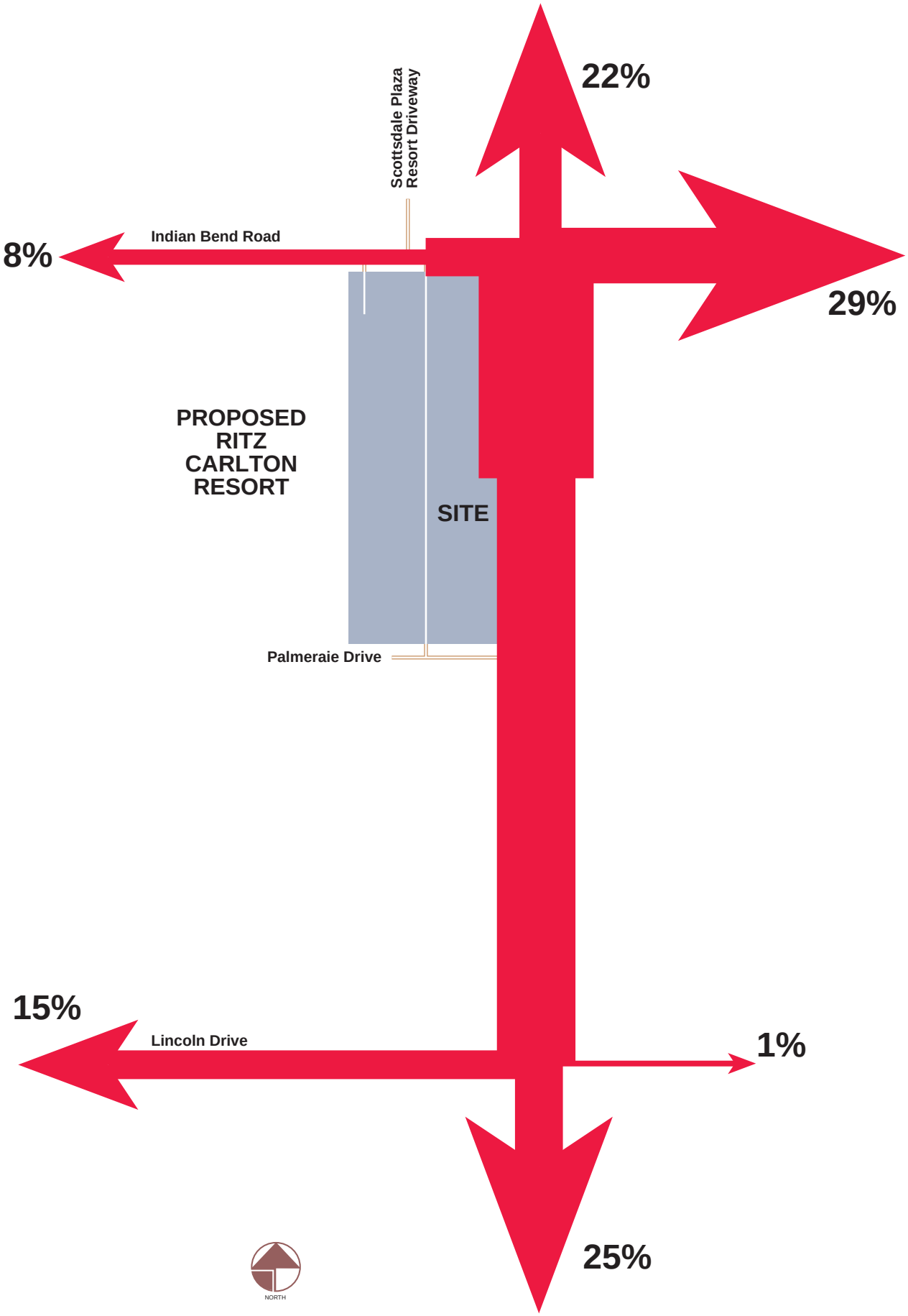


Figure 5: Trip Distribution

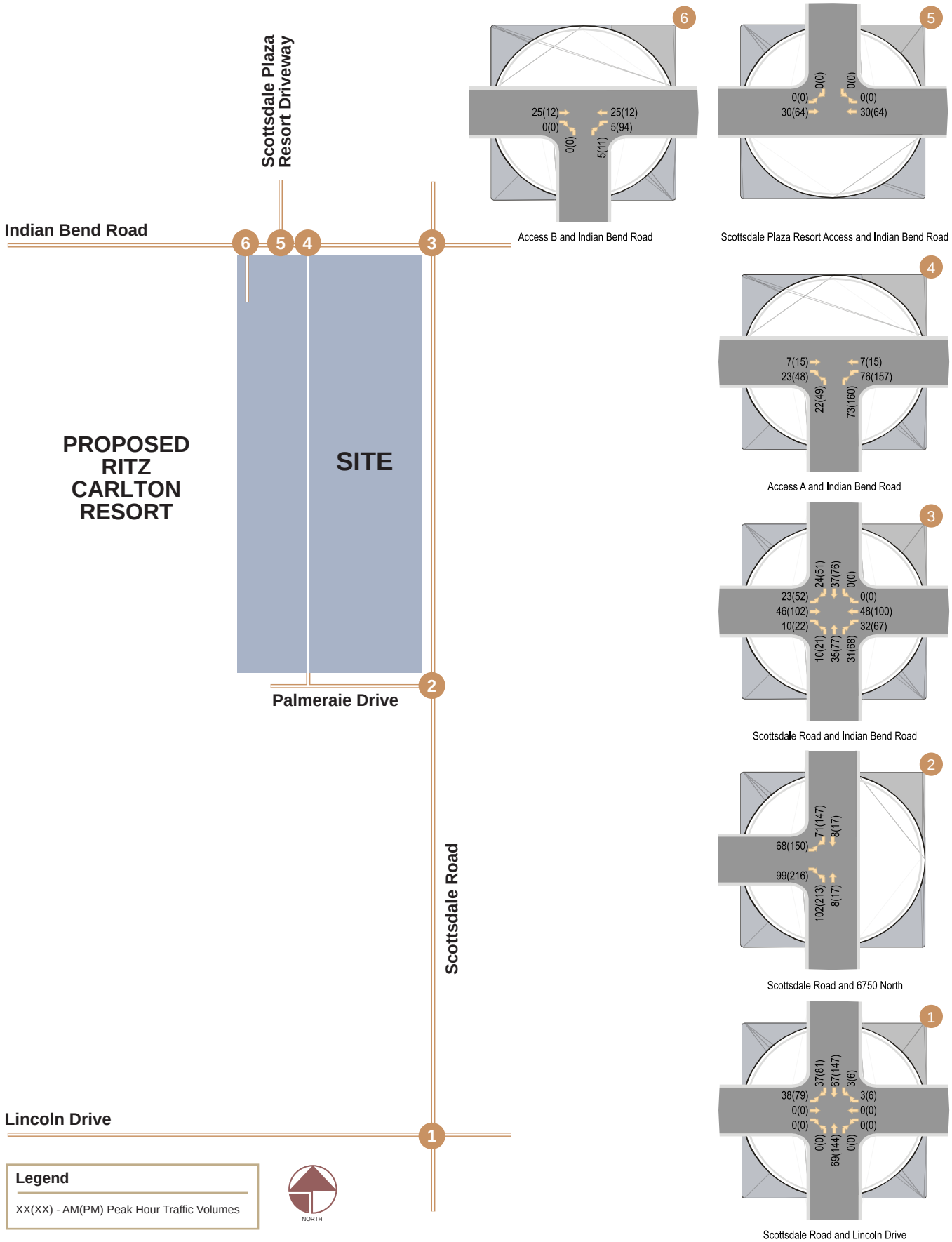
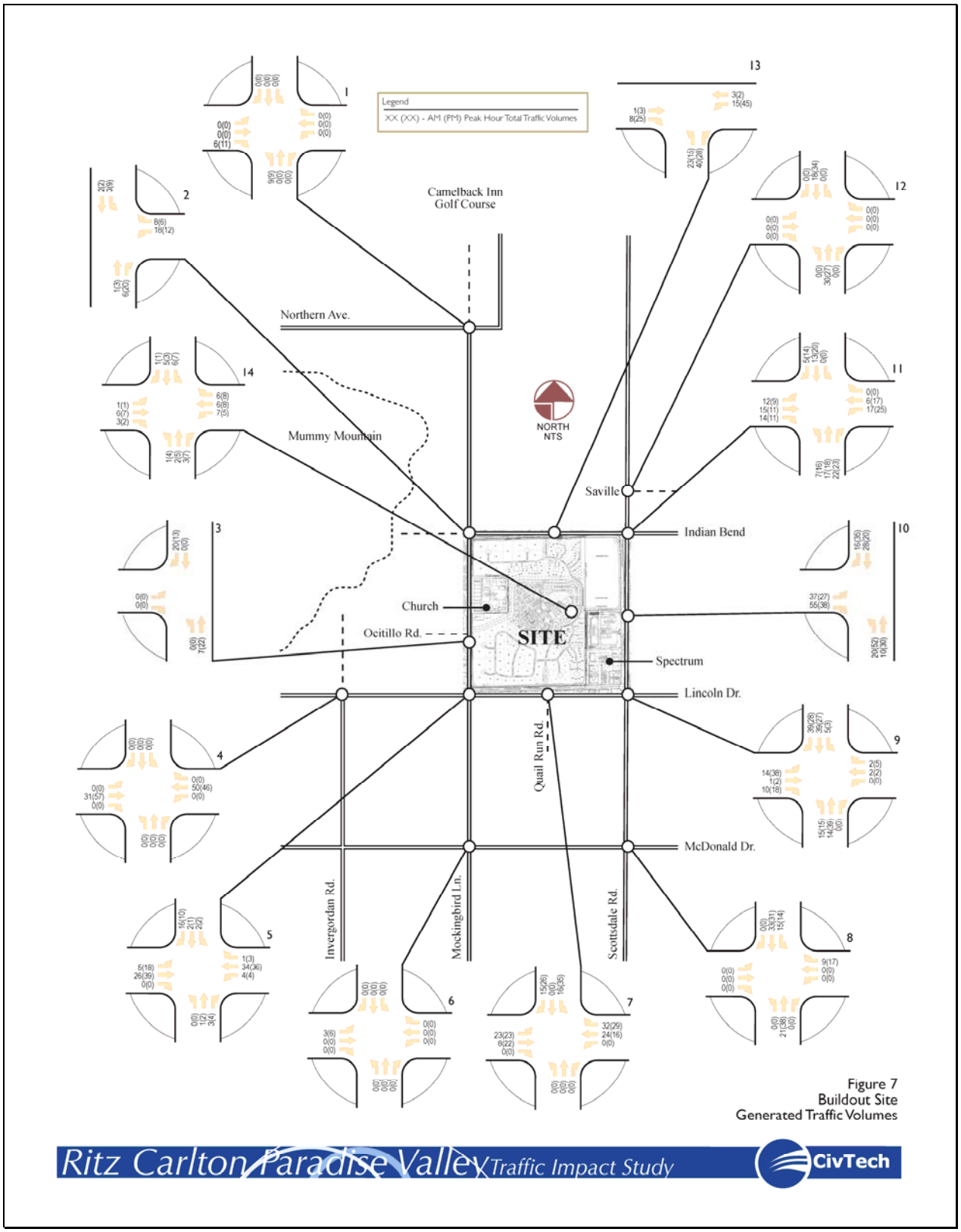


Figure 6: Site Traffic Volumes

Figure 10 – 2015 Trips from Other Developments



APPENDIX H

2018 PEAK HOUR ANALYSIS

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Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	6	288	0	33	4	0	0	128	12	28
Future Vol, veh/h	0	4	6	288	0	33	4	0	0	128	12	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	7	313	0	36	4	0	0	139	13	30
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	10.2	9.1	9.8
HCM LOS	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	89%	3%
Vol Thru, %	0%	30%	0%	2%	11%	91%
Vol Right, %	0%	70%	0%	98%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	40	4	294	37	32
LT Vol	128	0	4	0	33	1
Through Vol	0	12	0	6	4	29
RT Vol	0	28	0	288	0	2
Lane Flow Rate	139	43	4	320	40	35
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.229	0.06	0.007	0.4	0.064	0.054
Departure Headway (Hd)	5.924	4.928	5.696	4.505	5.697	5.628
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	604	723	629	799	627	633
Service Time	3.681	2.684	3.427	2.235	3.75	3.696
HCM Lane V/C Ratio	0.23	0.059	0.006	0.401	0.064	0.055
HCM Control Delay	10.4	8	8.5	10.2	9.1	9
HCM Lane LOS	B	A	A	B	A	A
HCM 95th-tile Q	0.9	0.2	0	1.9	0.2	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	29	2
Future Vol, veh/h	0	1	29	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	32	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	130	36	217	84	59	359
Future Vol, veh/h	130	36	217	84	59	359
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	141	39	236	91	64	390

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	800	282	0	0	327	0
Stage 1	282	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	354	757	-	-	1233	-
Stage 1	766	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	336	757	-	-	1233	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	567	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	444	757	1233	-
HCM Lane V/C Ratio	-	-	0.318	0.052	0.052	-
HCM Control Delay (s)	-	-	16.8	10	8.1	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.4	0.2	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	4	160	164	1	6	1
Future Vol, veh/h	4	160	164	1	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	174	178	1	7	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	179	0	-	0	362	179
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1397	-	-	-	637	864
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1397	-	-	-	635	864
Mov Cap-2 Maneuver	-	-	-	-	677	-
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	845	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1397	-	-	-	699
HCM Lane V/C Ratio	0.003	-	-	-	0.011
HCM Control Delay (s)	7.6	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	95	28	558	129	144	19	1223	399	150	1525	27
Future Volume (veh/h)	34	95	28	558	129	144	19	1223	399	150	1525	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	37	103	30	607	140	157	21	1329	434	163	1658	29
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	133	113	670	493	618	320	2076	955	337	2102	37
Arrive On Green	0.03	0.07	0.07	0.19	0.26	0.26	0.13	0.41	0.41	0.13	0.41	0.41
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	5085	1583	1774	5147	90
Grp Volume(v), veh/h	37	103	30	607	140	157	21	1329	434	163	1092	595
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1847
Q Serve(g_s), s	2.5	6.5	2.2	20.7	7.2	0.8	0.0	25.1	0.0	2.1	33.7	33.7
Cycle Q Clear(g_c), s	2.5	6.5	2.2	20.7	7.2	0.8	0.0	25.1	0.0	2.1	33.7	33.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	47	133	113	670	493	618	320	2076	955	337	1384	754
V/C Ratio(X)	0.79	0.78	0.27	0.91	0.28	0.25	0.07	0.64	0.45	0.48	0.79	0.79
Avail Cap(c_a), veh/h	177	155	132	803	493	618	320	2076	955	337	1384	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.1	54.8	52.8	47.2	35.1	14.2	36.1	28.4	13.0	42.1	31.0	31.0
Incr Delay (d2), s/veh	10.2	15.5	0.5	11.2	0.1	0.1	0.0	1.5	1.6	0.4	4.6	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.9	1.0	10.9	3.7	2.6	0.6	12.0	8.2	4.9	16.7	18.9
LnGrp Delay(d),s/veh	68.2	70.3	53.2	58.5	35.2	14.3	36.1	30.0	14.6	42.5	35.6	39.2
LnGrp LOS	E	E	D	E	D	B	D	C	B	D	D	D
Approach Vol, veh/h		170			904			1784			1850	
Approach Delay, s/veh		66.8			47.2			26.3			37.4	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.1	55.0	30.4	15.6	19.1	55.0	7.2	38.7
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 12	49.0	* 28	* 10	* 12	49.0	12.0	* 26
Max Q Clear Time (g_c+I1), s	4.1	27.1	22.7	8.5	2.0	35.7	4.5	9.2
Green Ext Time (p_c), s	0.1	2.1	0.7	0.0	0.1	2.4	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	36.1
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

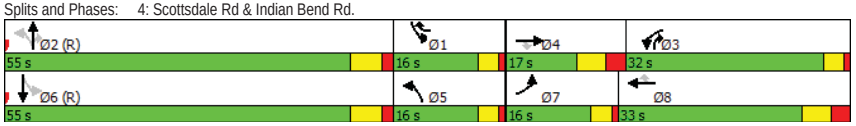
Timing Report, Sorted By Phase
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	16	55	32	17	16	55	16	33
Maximum Split (%)	13.3%	45.8%	26.7%	14.2%	13.3%	45.8%	13.3%	27.5%
Minimum Split (s)	9.4	29.4	8.5	13	8.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	85	30	118	101	85	30	101	117
End Time (s)	101	85	30	118	101	85	117	30
Yield/Force Off (s)	97	79	26	111	97	79	113	23
Yield/Force Off 170(s)	97	63	26	80	97	63	113	112
Local Start Time (s)	55	0	88	71	55	0	71	87
Local Yield (s)	67	49	116	81	67	49	83	113
Local Yield 170(s)	67	33	116	50	67	33	83	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	75
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



HCM 2010 TWSC
5: Scottsdale Rd & Joshua Tree Ln

11/5/2015

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	8	1614	4	1	1999
Future Vol, veh/h	0	8	1614	4	1	1999
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	1754	4	1	2173

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2628	879	0	0	1759	0
Stage 1	1757	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Critical Hdwy	5.74	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	42	250	-	-	165	-
Stage 1	81	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	42	250	-	-	165	-
Mov Cap-2 Maneuver	42	-	-	-	-	-
Stage 1	81	-	-	-	-	-
Stage 2	333	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	250	165	-
HCM Lane V/C Ratio	-	-	0.035	0.007	-
HCM Control Delay (s)	-	-	19.9	27	-
HCM Lane LOS	-	-	C	D	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	18	0	45	1563	2062	90		
Future Volume (veh/h)	18	0	45	1563	2062	90		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	20	0	49	1699	2241	98		
Adj No. of Lanes	1	1	1	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	35	540	645	4511	2641	822		
Arrive On Green	0.02	0.00	0.32	0.89	0.52	0.52		
Sat Flow, veh/h	1774	1583	1774	5253	5253	1583		
Grp Volume(v), veh/h	20	0	49	1699	2241	98		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1583		
Q Serve(g_s), s	1.4	0.0	0.0	7.3	48.8	4.1		
Cycle Q Clear(g_c), s	1.4	0.0	0.0	7.3	48.8	4.1		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	35	540	645	4511	2641	822		
V/C Ratio(X)	0.57	0.00	0.08	0.38	0.85	0.12		
Avail Cap(c_a), veh/h	415	879	645	4511	2641	822		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.79	0.79	1.00	1.00		
Uniform Delay (d), s/veh	62.7	0.0	26.5	1.2	26.6	15.9		
Incr Delay (d2), s/veh	13.6	0.0	0.0	0.2	3.6	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.2	3.4	23.7	1.9		
LnGrp Delay(d),s/veh	76.3	0.0	26.6	1.4	30.3	16.2		
LnGrp LOS	E		C	A	C	B		
Approach Vol, veh/h	20			1748	2339			
Approach Delay, s/veh	76.3			2.1	29.7			
Approach LOS	E			A	C			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		120.4		8.6	47.4	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		30.2	* 16	* 67		
Max Q Clear Time (g_c+I1), s		9.3		3.4	2.0	50.8		
Green Ext Time (p_c), s		23.8		0.0	9.9	13.6		

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

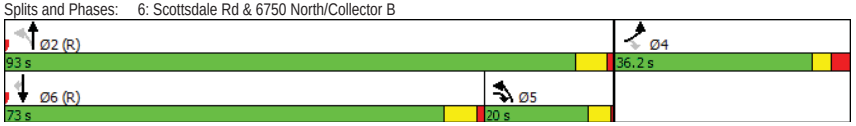
Timing Report, Sorted By Phase
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	36.2	20	73
Maximum Split (%)	72.0%	28.0%	15.5%	56.5%
Minimum Split (s)	36	36.2	8	36.9
Yellow Time (s)	4.9	3	3.5	4.9
All-Red Time (s)	1.1	3	0.5	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	65	28.8	8.8	65
End Time (s)	28.8	65	28.8	8.8
Yield/Force Off (s)	22.8	59	24.8	2.8
Yield/Force Off 170(s)	0.8	40	24.8	110
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	123.2	89	67
Local Yield 170(s)	65	104.2	89	45

Intersection Summary		
Cycle Length		129.2
Control Type	Actuated-Coordinated	
Natural Cycle		85
Offset: 65 (50%), Referenced to phase 2:NBTL and 6:SBT, Start of Green		

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



HCM 2010 Signalized Intersection Summary
7: Tatum Blvd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	745	67	246	694	91	48	541	372	293	918	394
Future Volume (veh/h)	166	745	67	246	694	91	48	541	372	293	918	394
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	180	810	73	267	754	99	52	588	404	318	998	428
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	884	80	265	1096	490	178	1102	493	393	1473	659
Arrive On Green	0.07	0.27	0.27	0.11	0.31	0.31	0.03	0.31	0.31	0.13	0.42	0.42
Sat Flow, veh/h	3442	3284	296	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	180	436	447	267	754	99	52	588	404	318	998	428
Grp Sat Flow(s),veh/h/ln	1721	1770	1811	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.7	31.1	31.1	14.0	24.3	6.0	2.6	17.8	30.7	15.3	29.8	28.1
Cycle Q Clear(g_c), s	6.7	31.1	31.1	14.0	24.3	6.0	2.6	17.8	30.7	15.3	29.8	28.1
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	232	476	487	265	1096	490	178	1102	493	393	1473	659
V/C Ratio(X)	0.78	0.92	0.92	1.01	0.69	0.20	0.29	0.53	0.82	0.81	0.68	0.65
Avail Cap(c_a), veh/h	318	476	487	265	1096	490	180	1102	493	536	1473	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.7	46.1	46.1	33.8	39.4	33.0	30.2	37.0	41.4	26.4	30.8	30.4
Incr Delay (d2), s/veh	5.2	24.9	24.5	54.4	3.2	0.8	0.3	1.9	14.1	4.6	2.5	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	18.4	18.8	13.5	12.3	2.7	1.3	9.0	15.3	7.9	15.1	13.1
LnGrp Delay(d),s/veh	64.9	70.9	70.6	88.2	42.6	33.9	30.6	38.8	55.5	31.0	33.4	35.3
LnGrp LOS	E	E	E	F	D	C	C	D	E	C	C	D
Approach Vol, veh/h		1063			1120			1044			1744	
Approach Delay, s/veh		69.7			52.7			44.9			33.4	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	47.3	21.5	47.5	19.0	42.0	7.9	61.1
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	12.0	37.0	28.0	30.0	14.0	35.0	4.0	54.0
Max Q Clear Time (g_c+I1), s	8.7	26.3	17.3	32.7	16.0	33.1	4.6	31.8
Green Ext Time (p_c), s	0.1	9.7	0.2	0.0	0.0	1.8	0.0	20.9

Intersection Summary	
HCM 2010 Ctrl Delay	47.9
HCM 2010 LOS	D

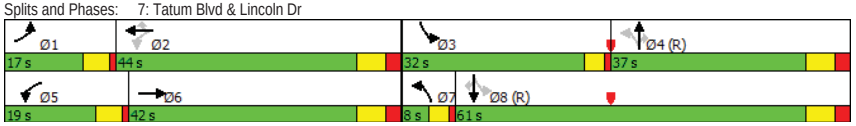
Timing Report, Sorted By Phase
7: Tatum Blvd & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBT	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	17	44	32	37	19	42	8	61
Maximum Split (%)	13.1%	33.8%	24.6%	28.5%	14.6%	32.3%	6.2%	46.9%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	101	15	47	84	103	15	23
End Time (s)	101	15	47	84	103	15	23	84
Yield/Force Off (s)	96	8	43	77	98	8	19	77
Yield/Force Off 170(s)	96	115	43	53	98	115	19	53
Local Start Time (s)	37	54	98	0	37	56	98	106
Local Yield (s)	49	91	126	30	51	91	102	30
Local Yield 170(s)	49	68	126	6	51	68	102	6

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 47 (36%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
8: Invergordon Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1000	200	56	934	21	105	4	94	18	11	5
Future Volume (veh/h)	10	1000	200	56	934	21	105	4	94	18	11	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	1087	217	61	1015	23	114	4	102	20	12	5
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	391	1951	388	301	2345	53	327	9	224	149	79	23
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	541	2944	585	420	3538	80	1390	60	1532	462	541	157
Grp Volume(v), veh/h	11	652	652	61	508	530	114	0	106	37	0	0
Grp Sat Flow(s),veh/h/ln	541	1770	1759	420	1770	1849	1390	0	1592	1161	0	0
Q Serve(g_s), s	0.7	13.4	13.5	6.2	9.2	9.2	0.0	0.0	4.1	0.1	0.0	0.0
Cycle Q Clear(g_c), s	9.9	13.4	13.5	19.7	9.2	9.2	4.2	0.0	4.1	4.2	0.0	0.0
Prop In Lane	1.00		0.33	1.00		0.04	1.00		0.96	0.54		0.14
Lane Grp Cap(c), veh/h	391	1173	1166	301	1173	1225	327	0	232	251	0	0
V/C Ratio(X)	0.03	0.56	0.56	0.20	0.43	0.43	0.35	0.00	0.46	0.15	0.00	0.00
Avail Cap(c_a), veh/h	391	1173	1166	301	1173	1225	615	0	562	555	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.84	0.84	0.84	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.8	6.1	6.1	11.4	5.4	5.4	26.6	0.0	26.6	25.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.9	0.9	1.3	1.0	0.9	0.6	0.0	1.4	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.6	6.6	0.8	4.7	4.9	2.0	0.0	1.9	0.6	0.0	0.0
LnGrp Delay(d),s/veh	7.8	7.0	7.1	12.7	6.4	6.4	27.2	0.0	28.0	25.6	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C		C	C		
Approach Vol, veh/h		1315			1099			220			37	
Approach Delay, s/veh		7.1			6.7			27.6			25.6	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.1		16.9		51.1		16.9
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		31.0		24.0		31.0		24.0
Max Q Clear Time (g_c+I1), s		21.7		6.2		15.5		6.2
Green Ext Time (p_c), s		8.2		1.0		12.9		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.9
HCM 2010 LOS	A

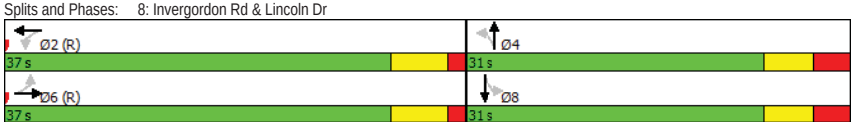
Timing Report, Sorted By Phase
8: Invergordon Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	37	31	37	31
Maximum Split (%)	54.4%	45.6%	54.4%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	28	59	28
End Time (s)	28	59	28	59
Yield/Force Off (s)	22	52	22	52
Yield/Force Off 170(s)	11	35	11	52
Local Start Time (s)	0	37	0	37
Local Yield (s)	31	61	31	61
Local Yield 170(s)	20	44	20	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	1053	35	20	885	23	16	56	25	91	114	285
Future Volume (veh/h)	235	1053	35	20	885	23	16	56	25	91	114	285
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	255	1145	38	22	962	25	17	61	27	99	124	310
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	646	2379	79	149	1247	32	180	160	71	276	416	353
Arrive On Green	0.28	0.68	0.68	0.71	0.71	0.71	0.13	0.13	0.13	0.06	0.22	0.22
Sat Flow, veh/h	1774	3496	116	472	3525	92	951	1225	542	1774	1863	1583
Grp Volume(v), veh/h	255	579	604	22	483	504	17	0	88	99	124	310
Grp Sat Flow(s),veh/h/ln	1774	1770	1842	472	1770	1847	951	0	1767	1774	1863	1583
Q Serve(g_s), s	3.0	20.2	20.2	4.0	22.8	22.8	2.1	0.0	5.9	6.1	7.2	24.6
Cycle Q Clear(g_c), s	3.0	20.2	20.2	24.3	22.8	22.8	2.1	0.0	5.9	6.1	7.2	24.6
Prop In Lane	1.00		0.06	1.00		0.05	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	646	1204	1254	149	626	653	180	0	232	276	416	353
V/C Ratio(X)	0.39	0.48	0.48	0.15	0.77	0.77	0.09	0.00	0.38	0.36	0.30	0.88
Avail Cap(c_a), veh/h	646	1204	1254	149	626	653	278	0	415	399	738	627
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	0.86	0.86	0.86	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	9.9	9.9	22.6	15.6	15.6	50.0	0.0	51.7	43.5	42.0	48.8
Incr Delay (d2), s/veh	0.3	1.1	1.1	1.8	7.8	7.5	0.2	0.0	1.0	0.8	0.4	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	10.2	10.6	0.6	12.1	12.6	0.6	0.0	3.0	3.0	3.8	11.4
LnGrp Delay(d),s/veh	30.3	11.0	11.0	24.4	23.4	23.1	50.2	0.0	52.7	44.2	42.4	55.7
LnGrp LOS	C	B	B	C	C	C	D		D	D	D	E
Approach Vol, veh/h		1438			1009			105			533	
Approach Delay, s/veh		14.4			23.3			52.3			50.5	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	42.5	52.0	12.0	23.5		94.5		35.5
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	16.0	* 46	17.0	30.5		66.0		51.5
Max Q Clear Time (g_c+I1), s	5.0	26.3	8.1	7.9		22.2		26.6
Green Ext Time (p_c), s	6.3	6.8	0.1	2.4		12.0		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C

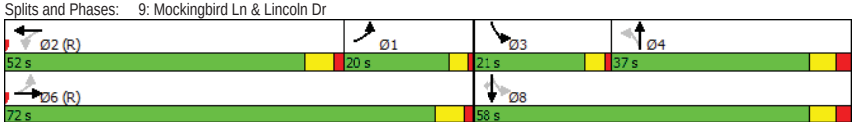
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	20	52	21	37	72	58
Maximum Split (%)	15.4%	40.0%	16.2%	28.5%	55.4%	44.6%
Minimum Split (s)	8	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	50	128	70	91	128	70
End Time (s)	70	50	91	128	70	128
Yield/Force Off (s)	66	44	87	121.5	64	121.5
Yield/Force Off 170(s)	66	30	87	101.5	50	101.5
Local Start Time (s)	52	0	72	93	0	72
Local Yield (s)	68	46	89	123.5	66	123.5
Local Yield 170(s)	68	32	89	103.5	52	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 128 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	1050	5	5	1147	29	5	0	5	61	0	74
Future Volume (veh/h)	135	1050	5	5	1147	29	5	0	5	61	0	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	147	1141	5	5	1247	32	5	0	5	66	0	80
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	3017	13	431	2713	70	56	13	27	148	0	109
Arrive On Green	0.07	1.00	1.00	0.77	0.77	0.77	0.07	0.00	0.07	0.07	0.00	0.07
Sat Flow, veh/h	1774	3614	16	489	3526	90	207	182	389	1341	0	1583
Grp Volume(v), veh/h	147	559	587	5	626	653	10	0	0	66	0	80
Grp Sat Flow(s),veh/h/ln	1774	1770	1860	489	1770	1847	779	0	0	1341	0	1583
Q Serve(g_s), s	2.2	0.0	0.0	0.3	16.4	16.4	0.0	0.0	0.0	0.0	0.0	6.4
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.3	16.4	16.4	6.4	0.0	0.0	6.4	0.0	6.4
Prop In Lane	1.00		0.01	1.00		0.05	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	394	1477	1553	431	1362	1421	95	0	0	148	0	109
V/C Ratio(X)	0.37	0.38	0.38	0.01	0.46	0.46	0.10	0.00	0.00	0.45	0.00	0.73
Avail Cap(c_a), veh/h	551	1477	1553	431	1362	1421	294	0	0	343	0	329
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	0.77	0.77	0.77	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.1	0.0	0.0	3.5	5.3	5.3	56.8	0.0	0.0	59.3	0.0	59.3
Incr Delay (d2), s/veh	0.5	0.7	0.6	0.0	0.9	0.8	0.5	0.0	0.0	2.1	0.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.3	0.3	0.0	8.1	8.5	0.3	0.0	0.0	2.4	0.0	3.1
LnGrp Delay(d),s/veh	4.6	0.7	0.6	3.5	6.2	6.2	57.2	0.0	0.0	61.4	0.0	68.4
LnGrp LOS	A	A	A	A	A	A	E			E		E
Approach Vol, veh/h		1293			1284			10			146	
Approach Delay, s/veh		1.1			6.2			57.2			65.3	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		15.0		115.0		15.0	8.5	106.5
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		27.0		90.5		27.0	16.0	70.5
Max Q Clear Time (g_c+I1), s		8.4		2.0		8.4	4.2	18.4
Green Ext Time (p_c), s		0.6		39.3		0.6	0.3	30.8

Intersection Summary	
HCM 2010 Ctrl Delay	7.1
HCM 2010 LOS	A

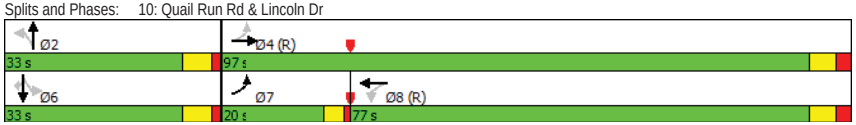
Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	33	97	33	20	77
Maximum Split (%)	25.4%	74.6%	25.4%	15.4%	59.2%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	54	87	54	87	107
End Time (s)	87	54	87	107	54
Yield/Force Off (s)	81	47.5	81	103	47.5
Yield/Force Off 170(s)	61	33.5	61	103	33.5
Local Start Time (s)	77	110	77	110	0
Local Yield (s)	104	70.5	104	126	70.5
Local Yield 170(s)	84	56.5	84	126	56.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	75
Offset: 107 (82%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	599	45	406	24	32	40	294	1102	28	27	1619	604
Future Volume (veh/h)	599	45	406	24	32	40	294	1102	28	27	1619	604
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	686	0	441	26	35	43	320	1198	30	29	1760	657
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	562	0	473	76	76	68	626	2339	59	249	2119	728
Arrive On Green	0.16	0.00	0.16	0.04	0.04	0.04	0.36	0.92	0.92	0.14	0.42	0.42
Sat Flow, veh/h	3548	0	1583	1774	1770	1583	3442	5103	128	1774	5085	1583
Grp Volume(v), veh/h	686	0	441	26	35	43	320	796	432	29	1760	657
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1583	1721	1695	1840	1774	1695	1583
Q Serve(g_s), s	19.0	0.0	15.7	1.7	2.3	3.2	8.7	4.4	4.4	1.7	37.0	46.0
Cycle Q Clear(g_c), s	19.0	0.0	15.7	1.7	2.3	3.2	8.7	4.4	4.4	1.7	37.0	46.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	562	0	473	76	76	68	626	1554	843	249	2119	728
V/C Ratio(X)	1.22	0.00	0.93	0.34	0.46	0.63	0.51	0.51	0.51	0.12	0.83	0.90
Avail Cap(c_a), veh/h	562	0	473	177	177	158	626	1554	843	249	2119	728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.00	0.92	1.00	1.00	1.00	0.85	0.85	0.85	0.81	0.81	0.81
Uniform Delay (d), s/veh	50.5	0.0	40.9	55.8	56.1	56.5	34.0	2.9	2.9	45.1	31.2	29.9
Incr Delay (d2), s/veh	113.8	0.0	23.9	1.0	1.6	3.5	0.3	1.0	1.9	0.1	3.2	14.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.2	0.0	9.9	0.9	1.2	1.5	4.1	2.0	2.4	0.8	17.9	24.4
LnGrp Delay(d),s/veh	164.3	0.0	64.8	56.7	57.7	60.0	34.3	3.9	4.8	45.1	34.5	44.0
LnGrp LOS	F		E	E	E	E	C	A	A	D	C	D
Approach Vol, veh/h		1127			104			1548			2446	
Approach Delay, s/veh		125.3			58.4			10.4			37.2	
Approach LOS		F			E			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.8	61.0		12.2	25.8	56.0		26.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	10.0	55.0		12.0	15.0	50.0		19.0
Max Q Clear Time (g_c+I1), s	3.7	6.4		5.2	10.7	48.0		21.0
Green Ext Time (p_c), s	0.2	1.7		0.1	0.1	1.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

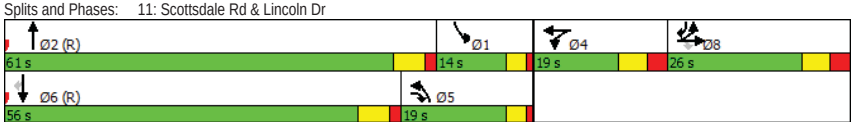
Timing Report, Sorted By Phase
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	14	61	19	19	56	26
Maximum Split (%)	11.7%	50.8%	15.8%	15.8%	46.7%	21.7%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	5	20	5	5	20	8
Vehicle Extension (s)	1	0.2	2	1	0.2	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	31	90	45	26	90	64
End Time (s)	45	31	64	45	26	90
Yield/Force Off (s)	41	25	57	41	20	83
Yield/Force Off 170(s)	41	10	31	41	5	57
Local Start Time (s)	61	0	75	56	0	94
Local Yield (s)	71	55	87	71	50	113
Local Yield 170(s)	71	40	61	71	35	87

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 90 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



HCM 2010 AWSC
12: Mockingbird Ln & McDonald Dr

11/5/2015

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	45	221	9	0	8	277	41	0	5	5	5
Future Vol, veh/h	0	45	221	9	0	8	277	41	0	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	49	240	10	0	9	301	45	0	5	5	5
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	11	13.3	9.6
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	33%	100%	0%	100%	0%	100%	0%
Vol Thru, %	33%	0%	96%	0%	87%	0%	8%
Vol Right, %	33%	0%	4%	0%	13%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	45	230	8	318	80	66
LT Vol	5	45	0	8	0	80	0
Through Vol	5	0	221	0	277	0	5
RT Vol	5	0	9	0	41	0	61
Lane Flow Rate	16	49	250	9	346	87	72
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.029	0.08	0.372	0.014	0.505	0.163	0.111
Departure Headway (Hd)	6.435	5.895	5.363	5.855	5.261	6.753	5.593
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	559	602	663	606	677	535	645
Service Time	4.44	3.688	3.155	3.643	3.047	4.453	3.293
HCM Lane V/C Ratio	0.029	0.081	0.377	0.015	0.511	0.163	0.112
HCM Control Delay	9.6	9.2	11.4	8.7	13.4	10.8	9
HCM Lane LOS	A	A	B	A	B	B	A
HCM 95th-tile Q	0.1	0.3	1.7	0	2.9	0.6	0.4

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	80	5	61
Future Vol, veh/h	0	80	5	61
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	87	5	66
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10
HCM LOS	A

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	236	35	293	339	292	46	1051	139	180	1729	69
Future Volume (veh/h)	120	236	35	293	339	292	46	1051	139	180	1729	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	130	257	38	318	368	317	50	1142	151	196	1879	75
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	336	49	281	485	586	414	1907	594	802	1907	594
Arrive On Green	0.08	0.11	0.11	0.11	0.14	0.14	0.23	0.38	0.38	0.31	0.50	0.50
Sat Flow, veh/h	1774	3100	453	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	130	145	150	318	368	317	50	1142	151	196	1879	75
Grp Sat Flow(s),veh/h/ln	1774	1770	1783	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	3.9	9.6	9.8	13.0	12.0	0.0	2.7	21.7	7.9	5.1	43.7	3.0
Cycle Q Clear(g_c), s	3.9	9.6	9.8	13.0	12.0	0.0	2.7	21.7	7.9	5.1	43.7	3.0
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	192	193	281	485	586	414	1907	594	802	1907	594
V/C Ratio(X)	0.63	0.76	0.77	1.13	0.76	0.54	0.12	0.60	0.25	0.24	0.99	0.13
Avail Cap(c_a), veh/h	259	339	342	281	678	673	414	1907	594	802	1907	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.52	0.52	0.52
Uniform Delay (d), s/veh	51.6	52.0	52.1	51.3	49.9	29.7	36.3	30.2	25.9	33.5	29.7	19.6
Incr Delay (d2), s/veh	3.1	6.0	6.4	93.7	3.2	0.8	0.1	1.4	1.0	0.1	11.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	5.0	5.2	16.6	6.1	8.3	1.3	10.4	3.6	2.4	22.3	1.3
LnGrp Delay(d),s/veh	54.7	57.9	58.5	144.9	53.0	30.5	36.4	31.6	26.9	33.6	41.6	19.8
LnGrp LOS	D	E	E	F	D	C	D	C	C	C	D	B
Approach Vol, veh/h		425			1003			1343			2150	
Approach Delay, s/veh		57.2			75.1			31.3			40.1	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.0	51.0	17.0	20.0	32.0	51.0	13.6	23.5
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	18.0	45.0	* 13	23.0	18.0	45.0	* 13	23.0
Max Q Clear Time (g_c+I1), s	17.1	23.7	15.0	11.8	4.7	45.7	5.9	14.0
Green Ext Time (p_c), s	0.6	9.2	0.0	1.2	0.6	0.0	0.9	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

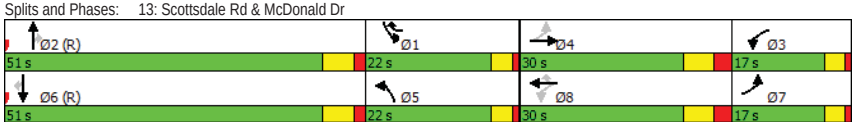
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	22	51	17	30	22	51	17	30
Maximum Split (%)	18.3%	42.5%	14.2%	25.0%	18.3%	42.5%	14.2%	25.0%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	81	30	13	103	81	30	13	103
End Time (s)	103	81	30	13	103	81	30	13
Yield/Force Off (s)	99	75	26	6	99	75	26	6
Yield/Force Off 170(s)	99	59	26	102	99	59	26	102
Local Start Time (s)	51	0	103	73	51	0	103	73
Local Yield (s)	69	45	116	96	69	45	116	96
Local Yield 170(s)	69	29	116	72	69	29	116	72

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	95
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



Intersection	
Intersection Delay, s/veh	4.6
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	147	180	63
Demand Flow Rate, veh/h	150	183	64
Vehicles Circulating, veh/h	22	24	142
Vehicles Exiting, veh/h	185	182	30
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.5	4.8	4.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	150	183	64
Cap Entry Lane, veh/h	1105	1103	980
Entry HV Adj Factor	0.981	0.983	0.984
Flow Entry, veh/h	147	180	63
Cap Entry, veh/h	1085	1084	965
V/C Ratio	0.136	0.166	0.065
Control Delay, s/veh	4.5	4.8	4.3
LOS	A	A	A
95th %tile Queue, veh	0	1	0

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	55	0	0	3	9	18
Future Vol, veh/h	55	0	0	3	9	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	0	0	3	10	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	23	20	29	0	-	0
Stage 1	20	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	993	1058	1584	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	993	1058	1584	-	-	-
Mov Cap-2 Maneuver	993	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1020	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1584	-	993	-	-
HCM Lane V/C Ratio	-	-	0.06	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	9	78	0	3	31
Future Vol, veh/h	0	9	78	0	3	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	85	0	3	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	125	85	0	0	85	0
Stage 1	85	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	870	974	-	-	1512	-
Stage 1	938	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	868	974	-	-	1512	-
Mov Cap-2 Maneuver	868	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	980	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	974	1512	-
HCM Lane V/C Ratio	-	-	0.01	0.002	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Intersection Delay, s/veh	4.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	40	27	168	34
Demand Flow Rate, veh/h	41	28	171	35
Vehicles Circulating, veh/h	63	100	0	41
Vehicles Exiting, veh/h	13	71	104	87
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.8	3.9	4.6	3.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	41	28	171	35
Cap Entry Lane, veh/h	1061	1022	1130	1085
Entry HV Adj Factor	0.976	0.964	0.984	0.980
Flow Entry, veh/h	40	27	168	34
Cap Entry, veh/h	1035	986	1112	1063
V/C Ratio	0.039	0.027	0.151	0.032
Control Delay, s/veh	3.8	3.9	4.6	3.7
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

HCM 2010 TWSC
32: Quail Run Rd & Townhome Access

11/5/2015

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	43	0	154	9	0	93
Future Vol, veh/h	43	0	154	9	0	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	0	167	10	0	101

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	273	172	0	0	177	0
Stage 1	172	-	-	-	-	-
Stage 2	101	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	716	872	-	-	1399	-
Stage 1	858	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	716	872	-	-	1399	-
Mov Cap-2 Maneuver	716	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	923	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	716	1399	-
HCM Lane V/C Ratio	-	-	0.065	-	-
HCM Control Delay (s)	-	-	10.4	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

HCM 2010 AWSC
1: Mockingbird Ln & Northern Avenue & 68th Street

11/5/2015

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	31	183	0	18	16	4	0	256	39	46
Future Vol, veh/h	0	4	31	183	0	18	16	4	0	256	39	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	34	199	0	20	17	4	0	278	42	50
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	10.3	9.5	12
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	47%	4%
Vol Thru, %	0%	46%	0%	14%	42%	81%
Vol Right, %	0%	54%	0%	86%	11%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	85	4	214	38	27
LT Vol	256	0	4	0	18	1
Through Vol	0	39	0	31	16	22
RT Vol	0	46	0	183	4	4
Lane Flow Rate	278	92	4	233	41	29
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.446	0.125	0.007	0.327	0.068	0.046
Departure Headway (Hd)	5.772	4.888	6.166	5.058	5.939	5.657
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	621	728	579	707	599	626
Service Time	3.539	2.655	3.919	2.812	4.018	3.751
HCM Lane V/C Ratio	0.448	0.126	0.007	0.33	0.068	0.046
HCM Control Delay	13.2	8.4	9	10.3	9.5	9
HCM Lane LOS	B	A	A	B	A	A
HCM 95th-tile Q	2.3	0.4	0	1.4	0.2	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	22	4
Future Vol, veh/h	0	1	22	4
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	24	4
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	103	45	319	123	37	193
Future Vol, veh/h	103	45	319	123	37	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	112	49	347	134	40	210

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	704	414	0	0	480	0
Stage 1	414	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	403	638	-	-	1082	-
Stage 1	667	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	388	638	-	-	1082	-
Mov Cap-2 Maneuver	495	-	-	-	-	-
Stage 1	667	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.4	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	495	638	1082	-
HCM Lane V/C Ratio	-	-	0.226	0.077	0.037	-
HCM Control Delay (s)	-	-	14.4	11.1	8.5	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.2	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	4	146	194	14	4	4
Future Vol, veh/h	4	146	194	14	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	159	211	15	4	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	226	0	-	0	385	218
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	167	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1342	-	-	-	618	822
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1342	-	-	-	616	822
Mov Cap-2 Maneuver	-	-	-	-	616	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	860	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1342	-	-	-	704
HCM Lane V/C Ratio	0.003	-	-	-	0.012
HCM Control Delay (s)	7.7	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	106	18	441	151	129	53	1758	486	178	1458	46
Future Volume (veh/h)	53	106	18	441	151	129	53	1758	486	178	1458	46
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	58	115	20	479	164	140	58	1911	528	193	1585	50
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	145	123	541	406	567	359	2161	922	320	2153	68
Arrive On Green	0.04	0.08	0.08	0.16	0.22	0.22	0.14	0.43	0.43	0.14	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	5085	1583	1774	5065	160
Grp Volume(v), veh/h	58	115	20	479	164	140	58	1911	528	193	1061	574
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1835
Q Serve(g_s), s	3.9	7.3	1.4	16.4	9.1	0.9	0.0	41.5	6.2	7.2	31.4	31.4
Cycle Q Clear(g_c), s	3.9	7.3	1.4	16.4	9.1	0.9	0.0	41.5	6.2	7.2	31.4	31.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	75	145	123	541	406	567	359	2161	922	320	1441	780
V/C Ratio(X)	0.78	0.80	0.16	0.89	0.40	0.25	0.16	0.88	0.57	0.60	0.74	0.74
Avail Cap(c_a), veh/h	207	171	145	660	406	567	359	2161	922	320	1441	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.9	54.4	51.7	49.5	40.3	15.2	35.9	31.8	15.7	45.9	28.9	28.9
Incr Delay (d2), s/veh	6.4	16.4	0.2	10.6	0.2	0.1	0.1	5.7	2.6	2.3	3.4	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.4	0.6	8.6	4.7	2.4	1.7	20.4	3.2	6.1	15.3	17.1
LnGrp Delay(d),s/veh	63.3	70.8	51.9	60.1	40.5	15.3	36.0	37.5	18.3	48.2	32.3	35.0
LnGrp LOS	E	E	D	E	D	B	D	D	B	D	C	D
Approach Vol, veh/h		193			783			2497			1828	
Approach Delay, s/veh		66.6			48.0			33.4			34.8	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	57.0	25.9	16.3	20.8	57.0	9.0	33.1
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 14	51.0	* 23	* 11	* 14	51.0	14.0	* 20
Max Q Clear Time (g_c+I1), s	9.2	43.5	18.4	9.3	2.0	33.4	5.9	11.1
Green Ext Time (p_c), s	0.1	2.7	0.5	0.0	0.1	2.4	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

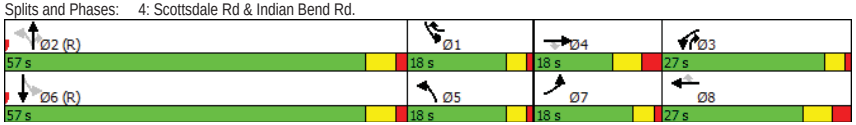
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	18	57	27	18	18	57	18	27
Maximum Split (%)	15.0%	47.5%	22.5%	15.0%	15.0%	47.5%	15.0%	22.5%
Minimum Split (s)	9.4	29.4	8.5	13	9.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	87	30	3	105	87	30	105	3
End Time (s)	105	87	30	3	105	87	3	30
Yield/Force Off (s)	101	81	26	116	101	81	119	23
Yield/Force Off 170(s)	101	65	26	85	101	65	119	112
Local Start Time (s)	57	0	93	75	57	0	75	93
Local Yield (s)	71	51	116	86	71	51	89	113
Local Yield 170(s)	71	35	116	55	71	35	89	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	10	2267	6	9	2001
Future Vol, veh/h	0	10	2267	6	9	2001
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	2464	7	10	2175

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3357	1235	0	0	2471	0
Stage 1	2467	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Critical Hdwy	5.74	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	16	144	-	-	72	-
Stage 1	28	-	-	-	-	-
Stage 2	327	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	14	144	-	-	72	-
Mov Cap-2 Maneuver	14	-	-	-	-	-
Stage 1	28	-	-	-	-	-
Stage 2	282	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	144	72	-
HCM Lane V/C Ratio	-	-	0.075	0.136	-
HCM Control Delay (s)	-	-	32	62.7	-
HCM Lane LOS	-	-	D	F	-
HCM 95th %tile Q(veh)	-	-	0.2	0.4	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	37	3	2207	2059	11
Future Volume (veh/h)	62	37	3	2207	2059	11
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	67	40	3	2399	2238	12
Adj No. of Lanes	1	1	1	3	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	95	540	587	4340	2641	822
Arrive On Green	0.05	0.05	0.29	0.85	0.52	0.52
Sat Flow, veh/h	1774	1583	1774	5253	5253	1583
Grp Volume(v), veh/h	67	40	3	2399	2238	12
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1583
Q Serve(g_s), s	4.8	0.0	0.0	16.9	48.7	0.5
Cycle Q Clear(g_c), s	4.8	0.0	0.0	16.9	48.7	0.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	95	540	587	4340	2641	822
V/C Ratio(X)	0.71	0.07	0.01	0.55	0.85	0.01
Avail Cap(c_a), veh/h	415	826	587	4340	2641	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.52	0.52	1.00	1.00
Uniform Delay (d), s/veh	60.0	28.7	22.6	2.6	26.6	15.0
Incr Delay (d2), s/veh	9.2	0.1	0.0	0.3	3.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	1.4	0.1	7.9	23.5	0.2
LnGrp Delay(d),s/veh	69.2	28.8	22.6	2.9	30.2	15.0
LnGrp LOS	E	C	C	A	C	B
Approach Vol, veh/h	107			2402	2250	
Approach Delay, s/veh	54.1			2.9	30.1	
Approach LOS	D			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		116.1		12.9	43.1	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		30.2	* 16	* 67		
Max Q Clear Time (g_c+I1), s		18.9		6.8	2.0	50.7		
Green Ext Time (p_c), s		43.0		0.3	12.4	13.6		

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

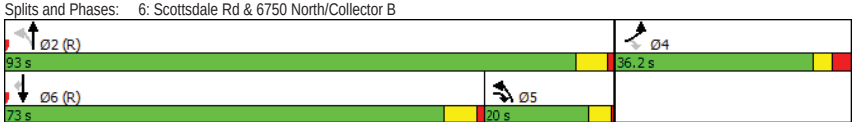
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	36.2	20	73
Maximum Split (%)	72.0%	28.0%	15.5%	56.5%
Minimum Split (s)	36	36.2	8	36.9
Yellow Time (s)	4.9	3	3.5	4.9
All-Red Time (s)	1.1	3	0.5	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	65	28.8	8.8	65
End Time (s)	28.8	65	28.8	8.8
Yield/Force Off (s)	22.8	59	24.8	2.8
Yield/Force Off 170(s)	0.8	40	24.8	110
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	123.2	89	67
Local Yield 170(s)	65	104.2	89	45

Intersection Summary	
Cycle Length	129.2
Control Type	Actuated-Coordinated
Natural Cycle	85
Offset: 65 (50%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



HCM 2010 Signalized Intersection Summary
7: Tatum Blvd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	352	710	39	317	807	254	87	1032	273	192	625	170
Future Volume (veh/h)	352	710	39	317	807	254	87	1032	273	192	625	170
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	383	772	42	345	877	276	95	1122	297	209	679	185
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	454	840	46	236	845	378	324	1422	636	249	1579	706
Arrive On Green	0.10	0.25	0.25	0.09	0.24	0.24	0.04	0.40	0.40	0.08	0.45	0.45
Sat Flow, veh/h	3442	3414	186	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	383	400	414	345	877	276	95	1122	297	209	679	185
Grp Sat Flow(s),veh/h/ln	1721	1770	1830	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	10.8	28.6	28.6	12.0	31.0	20.9	4.1	36.1	18.0	8.7	17.1	9.5
Cycle Q Clear(g_c), s	10.8	28.6	28.6	12.0	31.0	20.9	4.1	36.1	18.0	8.7	17.1	9.5
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	436	450	236	845	378	324	1422	636	249	1579	706
V/C Ratio(X)	0.84	0.92	0.92	1.46	1.04	0.73	0.29	0.79	0.47	0.84	0.43	0.26
Avail Cap(c_a), veh/h	534	436	450	236	845	378	324	1422	636	320	1579	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	47.7	47.7	39.2	49.5	45.6	22.1	34.1	28.6	27.9	24.7	22.6
Incr Delay (d2), s/veh	9.1	26.9	26.3	223.0	36.8	8.7	0.2	4.5	2.5	11.7	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	17.3	17.8	17.3	19.5	10.0	2.0	18.5	8.3	5.0	8.5	4.3
LnGrp Delay(d),s/veh	44.8	74.6	74.0	262.3	86.3	54.4	22.3	38.6	31.1	39.6	25.5	23.5
LnGrp LOS	D	E	E	F	F	D	C	D	C	D	C	C
Approach Vol, veh/h		1197			1498			1514			1073	
Approach Delay, s/veh		64.9			120.9			36.1			27.9	
Approach LOS		E			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	38.0	14.8	59.2	17.0	39.0	9.0	65.0
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	16.0	28.0	16.0	47.0	12.0	32.0	5.0	58.0
Max Q Clear Time (g_c+I1), s	12.8	33.0	10.7	38.1	14.0	30.6	6.1	19.1
Green Ext Time (p_c), s	0.2	0.0	0.1	8.6	0.0	1.3	0.0	35.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.0
HCM 2010 LOS	E

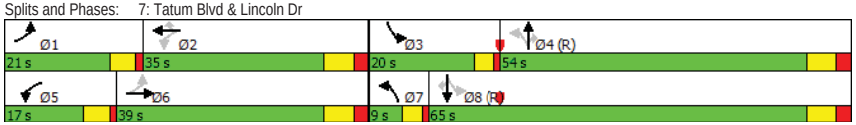
Timing Report, Sorted By Phase
7: Tatum Blvd & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBTL	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	21	35	20	54	17	39	9	65
Maximum Split (%)	16.2%	26.9%	15.4%	41.5%	13.1%	30.0%	6.9%	50.0%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	64	85	120	10	64	81	120	129
End Time (s)	85	120	10	64	81	120	129	64
Yield/Force Off (s)	80	113	6	57	76	113	125	57
Yield/Force Off 170(s)	80	90	6	33	76	90	125	33
Local Start Time (s)	54	75	110	0	54	71	110	119
Local Yield (s)	70	103	126	47	66	103	115	47
Local Yield 170(s)	70	80	126	23	66	80	115	23

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 10 (8%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1054	147	62	1036	25	249	21	85	25	17	10
Future Volume (veh/h)	5	1054	147	62	1036	25	249	21	85	25	17	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	1146	160	67	1126	27	271	23	92	27	18	11
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	1824	254	250	2065	49	435	73	293	197	124	59
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	485	3121	435	420	3533	85	1375	326	1306	527	553	264
Grp Volume(v), veh/h	5	648	658	67	564	589	271	0	115	56	0	0
Grp Sat Flow(s),veh/h/ln	485	1770	1786	420	1770	1848	1375	0	1632	1344	0	0
Q Serve(g_s), s	0.4	16.3	16.5	8.5	13.2	13.2	7.6	0.0	4.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	13.7	16.3	16.5	25.0	13.2	13.2	11.7	0.0	4.0	4.1	0.0	0.0
Prop In Lane	1.00		0.24	1.00		0.05	1.00		0.80	0.48		0.20
Lane Grp Cap(c), veh/h	295	1034	1044	250	1034	1080	435	0	366	380	0	0
V/C Ratio(X)	0.02	0.63	0.63	0.27	0.55	0.55	0.62	0.00	0.31	0.15	0.00	0.00
Avail Cap(c_a), veh/h	295	1034	1044	250	1034	1080	672	0	648	570	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.50	0.50	0.50	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.8	9.3	9.3	17.5	8.6	8.6	24.7	0.0	22.0	21.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.5	1.5	2.1	1.7	1.6	1.5	0.0	0.5	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	8.3	8.5	1.1	6.9	7.2	5.0	0.0	1.8	0.9	0.0	0.0
LnGrp Delay(d),s/veh	12.8	10.7	10.8	19.6	10.3	10.2	26.2	0.0	22.5	21.3	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	C		C	C		
Approach Vol, veh/h		1311			1220			386			56	
Approach Delay, s/veh		10.8			10.8			25.1			21.3	
Approach LOS		B			B			C			C	

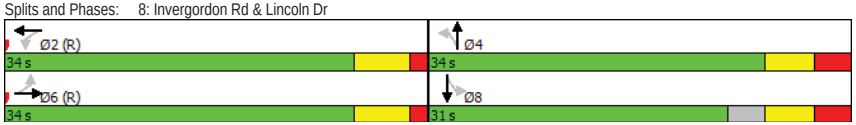
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		45.7		22.3		45.7		22.3
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		28.0		27.0		28.0		24.0
Max Q Clear Time (g_c+I1), s		27.0		13.7		18.5		6.1
Green Ext Time (p_c), s		1.0		1.6		8.5		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	34	34	34	31
Maximum Split (%)	50.0%	50.0%	50.0%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	25	59	25
End Time (s)	25	59	25	59
Yield/Force Off (s)	19	52	19	52
Yield/Force Off 170(s)	8	35	8	52
Local Start Time (s)	0	34	0	34
Local Yield (s)	28	61	28	61
Local Yield 170(s)	17	44	17	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	984	17	13	953	89	12	111	23	57	92	172
Future Volume (veh/h)	274	984	17	13	953	89	12	111	23	57	92	172
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	298	1070	18	14	1036	97	13	121	25	62	100	187
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	642	2616	44	199	1388	621	173	162	33	147	316	268
Arrive On Green	0.30	0.73	0.73	0.39	0.39	0.39	0.11	0.11	0.11	0.03	0.17	0.17
Sat Flow, veh/h	1774	3562	60	516	3539	1583	1088	1499	310	1774	1863	1583
Grp Volume(v), veh/h	298	532	556	14	1036	97	13	0	146	62	100	187
Grp Sat Flow(s),veh/h/ln	1774	1770	1852	516	1770	1583	1088	0	1808	1774	1863	1583
Q Serve(g_s), s	8.1	14.8	14.8	2.6	32.7	4.2	1.4	0.0	10.2	4.0	6.1	14.5
Cycle Q Clear(g_c), s	8.1	14.8	14.8	17.4	32.7	4.2	1.4	0.0	10.2	4.0	6.1	14.5
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	642	1299	1360	199	1388	621	173	0	195	147	316	268
V/C Ratio(X)	0.46	0.41	0.41	0.07	0.75	0.16	0.08	0.00	0.75	0.42	0.32	0.70
Avail Cap(c_a), veh/h	642	1299	1360	199	1388	621	285	0	382	147	509	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.64	0.94	0.94	0.94	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	6.6	6.6	34.8	33.9	17.3	52.3	0.0	56.3	48.8	47.4	50.8
Incr Delay (d2), s/veh	0.3	0.6	0.6	0.6	3.5	0.5	0.2	0.0	5.6	1.9	0.6	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	7.5	7.8	0.4	16.6	1.9	0.4	0.0	5.4	2.0	3.2	6.6
LnGrp Delay(d),s/veh	32.1	7.2	7.1	35.4	37.4	17.8	52.5	0.0	61.9	50.7	47.9	54.1
LnGrp LOS	C	A	A	D	D	B	D		E	D	D	D
Approach Vol, veh/h		1386			1147			159			349	
Approach Delay, s/veh		12.5			35.7			61.1			51.7	
Approach LOS		B			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	44.5	57.0	8.0	20.5		101.5		28.5
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	27.0	* 51	4.0	27.5		82.0		35.5
Max Q Clear Time (g_c+I1), s	10.1	34.7	6.0	12.2		16.8		16.5
Green Ext Time (p_c), s	7.7	7.3	0.0	1.8		11.2		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.3
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

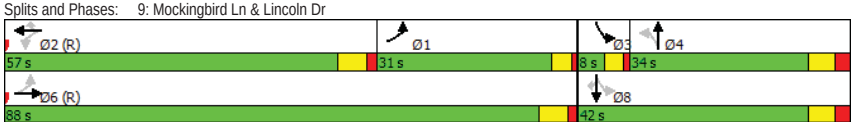
Timing Report, Sorted By Phase
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	31	57	8	34	88	42
Maximum Split (%)	23.8%	43.8%	6.2%	26.2%	67.7%	32.3%
Minimum Split (s)	9	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	73	16	104	112	16	104
End Time (s)	104	73	112	16	104	16
Yield/Force Off (s)	100	67	108	9.5	98	9.5
Yield/Force Off 170(s)	100	53	108	119.5	84	119.5
Local Start Time (s)	57	0	88	96	0	88
Local Yield (s)	84	51	92	123.5	82	123.5
Local Yield 170(s)	84	37	92	103.5	68	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 16 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	528	5	5	901	61	5	0	5	37	0	78
Future Volume (veh/h)	73	528	5	5	901	61	5	0	5	37	0	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	79	574	5	5	979	66	5	0	5	40	0	85
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	476	2994	26	698	2736	1224	77	13	48	163	0	113
Arrive On Green	0.06	1.00	1.00	0.77	0.77	0.77	0.07	0.00	0.07	0.07	0.00	0.07
Sat Flow, veh/h	1774	3596	31	831	3539	1583	500	178	678	1517	0	1583
Grp Volume(v), veh/h	79	282	297	5	979	66	10	0	0	40	0	85
Grp Sat Flow(s),veh/h/ln	1774	1770	1857	831	1770	1583	1356	0	0	1517	0	1583
Q Serve(g_s), s	1.1	0.0	0.0	0.2	11.3	1.3	0.0	0.0	0.0	0.0	0.0	6.9
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.2	11.3	1.3	2.8	0.0	0.0	2.8	0.0	6.9
Prop In Lane	1.00		0.02	1.00		1.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	476	1474	1547	698	2736	1224	138	0	0	163	0	113
V/C Ratio(X)	0.17	0.19	0.19	0.01	0.36	0.05	0.07	0.00	0.00	0.25	0.00	0.76
Avail Cap(c_a), veh/h	643	1474	1547	698	2736	1224	367	0	0	388	0	365
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	0.78	0.78	0.78	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.0	0.0	0.0	3.4	4.6	3.5	56.4	0.0	0.0	57.4	0.0	59.3
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.0	0.3	0.1	0.2	0.0	0.0	0.8	0.0	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.1	0.0	5.5	0.6	0.3	0.0	0.0	1.4	0.0	3.3
LnGrp Delay(d),s/veh	3.1	0.3	0.3	3.4	4.9	3.6	56.6	0.0	0.0	58.2	0.0	69.0
LnGrp LOS	A	A	A	A	A	A	E			E		E
Approach Vol, veh/h		658			1050			10			125	
Approach Delay, s/veh		0.6			4.8			56.6			65.6	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		15.2		114.8		15.2	7.8	107.0
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		30.0		87.5		30.0	16.0	67.5
Max Q Clear Time (g_c+I1), s		4.8		2.0		8.9	3.1	13.3
Green Ext Time (p_c), s		0.5		17.8		0.5	0.1	16.7

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A

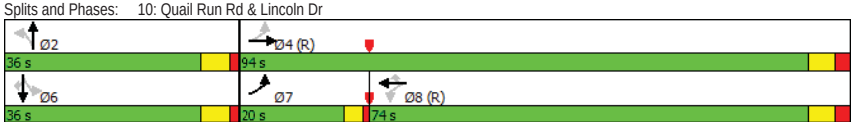
Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	36	94	36	20	74
Maximum Split (%)	27.7%	72.3%	27.7%	15.4%	56.9%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	74	110	74	110	0
End Time (s)	110	74	110	0	74
Yield/Force Off (s)	104	67.5	104	126	67.5
Yield/Force Off 170(s)	84	53.5	84	126	53.5
Local Start Time (s)	74	110	74	110	0
Local Yield (s)	104	67.5	104	126	67.5
Local Yield 170(s)	84	53.5	84	126	53.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	579	46	391	42	55	53	369	1558	37	55	1468	447
Future Volume (veh/h)	579	46	391	42	55	53	369	1558	37	55	1468	447
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	665	0	425	46	60	58	401	1693	40	60	1596	486
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	591	0	506	98	100	86	814	2172	51	272	1737	628
Arrive On Green	0.17	0.00	0.17	0.06	0.06	0.06	0.47	0.85	0.85	0.15	0.34	0.34
Sat Flow, veh/h	3548	0	1583	1774	1806	1552	3442	5111	121	1774	5085	1583
Grp Volume(v), veh/h	665	0	425	46	59	59	401	1123	610	60	1596	486
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1589	1721	1695	1841	1774	1695	1583
Q Serve(g_s), s	20.0	0.0	11.6	3.0	3.9	4.4	9.6	17.7	17.7	3.6	36.1	32.1
Cycle Q Clear(g_c), s	20.0	0.0	11.6	3.0	3.9	4.4	9.6	17.7	17.7	3.6	36.1	32.1
Prop In Lane	1.00		1.00	1.00		0.98	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	591	0	506	98	98	88	814	1441	783	272	1737	628
V/C Ratio(X)	1.12	0.00	0.84	0.47	0.60	0.68	0.49	0.78	0.78	0.22	0.92	0.77
Avail Cap(c_a), veh/h	591	0	506	207	206	185	814	1441	783	272	1737	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	1.00	1.00	1.00	0.62	0.62	0.62	0.78	0.78	0.78
Uniform Delay (d), s/veh	50.0	0.0	38.0	55.0	55.4	55.6	26.7	6.5	6.5	44.5	37.9	31.5
Incr Delay (d2), s/veh	76.1	0.0	11.2	1.3	2.2	3.4	0.1	2.7	4.8	0.1	7.5	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	0.0	6.6	1.5	2.0	2.0	4.6	8.0	9.2	1.8	18.1	16.5
LnGrp Delay(d),s/veh	126.1	0.0	49.2	56.3	57.6	59.0	26.8	9.2	11.3	44.7	45.4	38.6
LnGrp LOS	F		D	E	E	E	C	A	B	D	D	D
Approach Vol, veh/h		1090			164			2134			2142	
Approach Delay, s/veh		96.1			57.7			13.1			43.8	
Approach LOS		F			E			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.4	57.0		13.6	32.4	47.0		27.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	11.0	51.0		14.0	21.0	41.0		20.0
Max Q Clear Time (g_c+I1), s	5.6	19.7		6.4	11.6	38.1		22.0
Green Ext Time (p_c), s	0.2	2.7		0.3	0.3	1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.7
HCM 2010 LOS	D

Notes

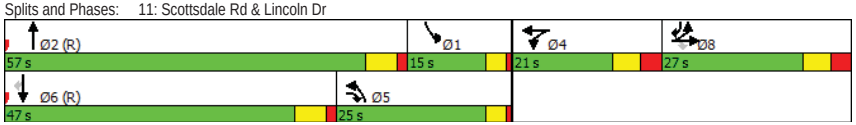
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	57	21	25	47	27
Maximum Split (%)	12.5%	47.5%	17.5%	20.8%	39.2%	22.5%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	4.5	20	5	4.5	20	8
Vehicle Extension (s)	1	0.2	2	1	0.2	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	12	75	27	2	75	48
End Time (s)	27	12	48	27	2	75
Yield/Force Off (s)	23	6	41	23	116	68
Yield/Force Off 170(s)	23	111	15	23	101	42
Local Start Time (s)	57	0	72	47	0	93
Local Yield (s)	68	51	86	68	41	113
Local Yield 170(s)	68	36	60	68	26	87

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150

Offset: 75 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	66	195	4	0	22	241	77	0	13	11	13
Future Vol, veh/h	0	66	195	4	0	22	241	77	0	13	11	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	72	212	4	0	24	262	84	0	14	12	14
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	10.7	13.1	9.9
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	100%	0%	100%	0%	100%	0%
Vol Thru, %	30%	0%	98%	0%	76%	0%	10%
Vol Right, %	35%	0%	2%	0%	24%	0%	90%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	66	199	22	318	56	93
LT Vol	13	66	0	22	0	56	0
Through Vol	11	0	195	0	241	0	9
RT Vol	13	0	4	0	77	0	84
Lane Flow Rate	40	72	216	24	346	61	101
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.072	0.119	0.329	0.039	0.504	0.115	0.159
Departure Headway (Hd)	6.423	6.102	5.583	6.031	5.355	6.815	5.669
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	561	591	649	597	677	529	636
Service Time	4.429	3.802	3.283	3.731	3.055	4.517	3.371
HCM Lane V/C Ratio	0.071	0.122	0.333	0.04	0.511	0.115	0.159
HCM Control Delay	9.9	9.6	11	9	13.4	10.4	9.4
HCM Lane LOS	A	A	B	A	B	B	A
HCM 95th-tile Q	0.2	0.4	1.4	0.1	2.9	0.4	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	56	9	84
Future Vol, veh/h	0	56	9	84
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	61	10	91
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.8
HCM LOS	A

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	210	36	230	214	194	36	1759	235	300	1558	91
Future Volume (veh/h)	78	210	36	230	214	194	36	1759	235	300	1558	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	85	228	39	250	233	211	39	1912	255	326	1693	99
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	276	306	52	261	340	507	398	2034	633	771	2034	633
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.22	0.40	0.40	0.15	0.27	0.27
Sat Flow, veh/h	1774	3031	511	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	85	132	135	250	233	211	39	1912	255	326	1693	99
Grp Sat Flow(s),veh/h/ln	1774	1770	1773	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	8.7	8.9	11.1	7.6	0.0	2.1	43.4	13.8	10.3	37.6	5.7
Cycle Q Clear(g_c), s	0.0	8.7	8.9	11.1	7.6	0.0	2.1	43.4	13.8	10.3	37.6	5.7
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	276	178	179	261	340	507	398	2034	633	771	2034	633
V/C Ratio(X)	0.31	0.74	0.76	0.96	0.69	0.42	0.10	0.94	0.40	0.42	0.83	0.16
Avail Cap(c_a), veh/h	276	354	355	261	708	672	398	2034	633	771	2034	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.44	0.44	0.44
Uniform Delay (d), s/veh	47.4	52.4	52.5	51.6	52.5	32.0	36.9	34.6	25.7	43.9	40.1	28.5
Incr Delay (d2), s/veh	0.6	5.8	6.4	43.5	2.4	0.5	0.1	10.1	1.9	0.2	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	4.5	4.7	11.1	3.9	5.5	1.0	22.1	6.4	4.9	18.0	2.5
LnGrp Delay(d),s/veh	48.0	58.3	58.9	95.1	54.9	32.5	37.0	44.7	27.6	44.1	42.0	28.7
LnGrp LOS	D	E	E	F	D	C	D	D	C	D	D	C
Approach Vol, veh/h		352			694			2206			2118	
Approach Delay, s/veh		56.0			62.6			42.6			41.7	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.9	54.0	16.0	19.1	30.9	54.0	16.6	18.5
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	15.0	48.0	* 12	24.0	15.0	48.0	* 12	24.0
Max Q Clear Time (g_c+I1), s	12.3	45.4	13.1	10.9	4.1	39.6	2.0	9.6
Green Ext Time (p_c), s	0.4	2.4	0.0	1.2	1.0	6.5	0.7	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	45.7
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

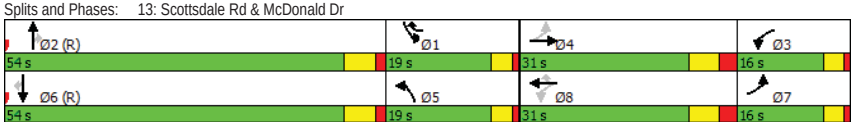
Timing Report, Sorted By Phase
13: Scottsdale Rd & McDonald Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	19	54	16	31	19	54	16	31
Maximum Split (%)	15.8%	45.0%	13.3%	25.8%	15.8%	45.0%	13.3%	25.8%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	1	0.2	1	2	1	0.2	1	2
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	30	14	103	84	30	14	103
End Time (s)	103	84	30	14	103	84	30	14
Yield/Force Off (s)	99	78	26	7	99	78	26	7
Yield/Force Off 170(s)	99	62	26	103	99	62	26	103
Local Start Time (s)	54	0	104	73	54	0	104	73
Local Yield (s)	69	48	116	97	69	48	116	97
Local Yield 170(s)	69	32	116	73	69	32	116	73

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	105
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



HCM 2010 Roundabout
21: Collector A & Indian Bend Rd.

11/5/2015

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	161	215	43
Demand Flow Rate, veh/h	165	219	44
Vehicles Circulating, veh/h	44	15	138
Vehicles Exiting, veh/h	190	167	71
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.8	5.1	4.1
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	165	219	44
Cap Entry Lane, veh/h	1081	1113	984
Entry HV Adj Factor	0.978	0.980	0.977
Flow Entry, veh/h	161	215	43
Cap Entry, veh/h	1057	1091	962
V/C Ratio	0.153	0.197	0.045
Control Delay, s/veh	4.8	5.1	4.1
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	35	0	0	5	4	60
Future Vol, veh/h	35	0	0	5	4	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	0	0	5	4	65

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	42	37	70	0	-	0
Stage 1	37	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	969	1035	1531	-	-	-
Stage 1	985	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	969	1035	1531	-	-	-
Mov Cap-2 Maneuver	969	-	-	-	-	-
Stage 1	985	-	-	-	-	-
Stage 2	1018	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1531	-	969	-	-
HCM Lane V/C Ratio	-	-	0.039	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	4	32	0	5	43
Future Vol, veh/h	0	4	32	0	5	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	35	0	5	47

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	93	35	0	0	35	0
Stage 1	35	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	907	1038	-	-	1576	-
Stage 1	987	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	904	1038	-	-	1576	-
Mov Cap-2 Maneuver	904	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	962	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1038	1576	-
HCM Lane V/C Ratio	-	-	0.004	0.003	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

HCM 2010 Roundabout
31: Quail Run Rd & South Residential Access

11/5/2015

Intersection	
Intersection Delay, s/veh	3.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	25	32	101	47
Demand Flow Rate, veh/h	26	33	103	48
Vehicles Circulating, veh/h	81	79	0	76
Vehicles Exiting, veh/h	43	24	106	36
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.8	3.8	4.0	3.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	26	33	103	48
Cap Entry Lane, veh/h	1042	1044	1130	1047
Entry HV Adj Factor	0.962	0.970	0.983	0.980
Flow Entry, veh/h	25	32	101	47
Cap Entry, veh/h	1002	1012	1111	1027
V/C Ratio	0.025	0.032	0.091	0.046
Control Delay, s/veh	3.8	3.8	4.0	3.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

HCM 2010 TWSC
32: Quail Run Rd & Townhome Access

11/5/2015

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	20	0	93	41	0	95
Future Vol, veh/h	20	0	93	41	0	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	101	45	0	103

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	226	123	0	0	146	0
Stage 1	123	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	762	928	-	-	1436	-
Stage 1	902	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	762	928	-	-	1436	-
Mov Cap-2 Maneuver	762	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	762	1436	-
HCM Lane V/C Ratio	-	-	0.029	-	-
HCM Control Delay (s)	-	-	9.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

APPENDIX I

2023 PEAK HOUR ANALYSIS

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	6	308	0	34	4	0	0	140	12	29
Future Vol, veh/h	0	4	6	308	0	34	4	0	0	140	12	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	7	335	0	37	4	0	0	152	13	32
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	10.7	9.3	10.2
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	89%	3%
Vol Thru, %	0%	29%	0%	2%	11%	91%
Vol Right, %	0%	71%	0%	98%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	41	4	314	38	33
LT Vol	140	0	4	0	34	1
Through Vol	0	12	0	6	4	30
RT Vol	0	29	0	308	0	2
Lane Flow Rate	152	45	4	341	41	36
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.253	0.062	0.007	0.432	0.066	0.057
Departure Headway (Hd)	5.984	4.982	5.745	4.552	5.775	5.713
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	598	714	623	788	617	622
Service Time	3.749	2.746	3.483	2.289	3.84	3.793
HCM Lane V/C Ratio	0.254	0.063	0.006	0.433	0.066	0.058
HCM Control Delay	10.8	8.1	8.5	10.7	9.3	9.1
HCM Lane LOS	B	A	A	B	A	A
HCM 95th-tile Q	1	0.2	0	2.2	0.2	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	30	2
Future Vol, veh/h	0	1	30	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	33	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.1
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	161	45	222	102	73	369
Future Vol, veh/h	161	45	222	102	73	369
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	175	49	241	111	79	401

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	857	297	0	0	352	0
Stage 1	297	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	328	742	-	-	1207	-
Stage 1	754	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	307	742	-	-	1207	-
Mov Cap-2 Maneuver	418	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	535	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	418	742	1207	-
HCM Lane V/C Ratio	-	-	0.419	0.066	0.066	-
HCM Control Delay (s)	-	-	19.7	10.2	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2	0.2	0.2	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	4	206	2	36	197	1	1	0	47	6	0	1
Future Vol, veh/h	4	206	2	36	197	1	1	0	47	6	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	224	2	39	214	1	1	0	51	7	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	215	0	0	226	0	0	527	527	225	552	528	215
Stage 1	-	-	-	-	-	-	234	234	-	293	293	-
Stage 2	-	-	-	-	-	-	293	293	-	259	235	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1355	-	-	1342	-	-	462	456	814	444	456	825
Stage 1	-	-	-	-	-	-	769	711	-	715	670	-
Stage 2	-	-	-	-	-	-	715	670	-	746	710	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1355	-	-	1342	-	-	450	441	814	406	441	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	450	441	-	406	441	-
Stage 1	-	-	-	-	-	-	767	709	-	713	651	-
Stage 2	-	-	-	-	-	-	693	651	-	697	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.2	9.8	13.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	801	1355	-	-	1342	-	-	438
HCM Lane V/C Ratio	0.065	0.003	-	-	0.029	-	-	0.017
HCM Control Delay (s)	9.8	7.7	-	-	7.8	-	-	13.4
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	157	63	583	180	148	39	1266	408	154	1611	44
Future Volume (veh/h)	68	157	63	583	180	148	39	1266	408	154	1611	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	74	171	68	634	196	161	42	1376	443	167	1751	48
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	155	132	696	480	576	274	2076	967	296	2076	647
Arrive On Green	0.05	0.08	0.08	0.20	0.26	0.26	0.11	0.41	0.41	0.11	0.41	0.41
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	74	171	68	634	196	161	42	1376	443	167	1751	48
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	4.9	10.0	4.9	21.6	10.5	1.2	0.0	26.3	0.0	3.1	37.3	1.7
Cycle Q Clear(g_c), s	4.9	10.0	4.9	21.6	10.5	1.2	0.0	26.3	0.0	3.1	37.3	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	155	132	696	480	576	274	2076	967	296	2076	647
V/C Ratio(X)	0.79	1.10	0.52	0.91	0.41	0.28	0.15	0.66	0.46	0.56	0.84	0.07
Avail Cap(c_a), veh/h	177	155	132	803	480	576	274	2076	967	296	2076	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.1	55.0	52.7	46.8	37.0	14.5	44.4	28.8	12.6	45.0	32.0	12.8
Incr Delay (d2), s/veh	5.3	102.0	1.6	12.3	0.2	0.1	0.1	1.7	1.6	1.5	4.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	9.5	2.2	11.5	5.4	2.7	1.3	12.6	8.3	5.2	18.2	0.8
LnGrp Delay(d),s/veh	61.5	157.0	54.2	59.1	37.2	14.6	44.5	30.5	14.2	46.6	36.4	13.0
LnGrp LOS	E	F	D	E	D	B	D	C	B	D	D	B
Approach Vol, veh/h		313			991			1861			1966	
Approach Delay, s/veh		112.1			47.6			26.9			36.7	
Approach LOS		F			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	55.0	31.3	17.0	16.7	55.0	10.4	37.9
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 12	49.0	* 28	* 10	* 12	49.0	12.0	* 26
Max Q Clear Time (g_c+I1), s	5.1	28.3	23.6	12.0	2.0	39.3	6.9	12.5
Green Ext Time (p_c), s	0.1	2.2	0.7	0.0	0.1	2.8	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	39.9
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

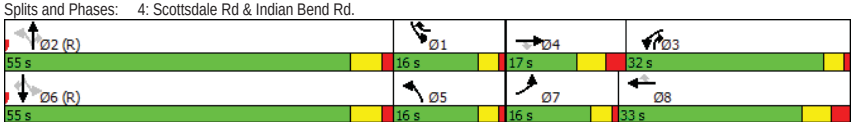
Timing Report, Sorted By Phase
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	16	55	32	17	16	55	16	33
Maximum Split (%)	13.3%	45.8%	26.7%	14.2%	13.3%	45.8%	13.3%	27.5%
Minimum Split (s)	9.4	29.4	8.5	13	8.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	85	30	118	101	85	30	101	117
End Time (s)	101	85	30	118	101	85	117	30
Yield/Force Off (s)	97	79	26	111	97	79	113	23
Yield/Force Off 170(s)	97	63	26	80	97	63	113	112
Local Start Time (s)	55	0	88	71	55	0	71	87
Local Yield (s)	67	49	116	81	67	49	83	113
Local Yield 170(s)	67	33	116	50	67	33	83	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



HCM 2010 TWSC
5: Scottsdale Rd & Joshua Tree Ln

11/5/2015

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	62	0	0	8	0	1683	4	1	2109	28
Future Vol, veh/h	0	0	62	0	0	8	0	1683	4	1	2109	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	150	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	67	0	0	9	0	1829	4	1	2292	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3027	4129	1146	2751	4127	917	2292	0	0	1834	0	0
Stage 1	2295	2295	-	1832	1832	-	-	-	-	-	-	-
Stage 2	732	1834	-	919	2295	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	14	2	166	21	2	236	89	-	-	152	-	-
Stage 1	23	73	-	51	126	-	-	-	-	-	-	-
Stage 2	344	125	-	264	73	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	13	2	166	12	2	236	89	-	-	152	-	-
Mov Cap-2 Maneuver	13	2	-	12	2	-	-	-	-	-	-	-
Stage 1	23	73	-	51	126	-	-	-	-	-	-	-
Stage 2	331	125	-	156	73	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.8	20.8	0	0
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	89	-	-	166	236	152	-	-
HCM Lane V/C Ratio	-	-	-	0.406	0.037	0.007	-	-
HCM Control Delay (s)	0	-	-	40.8	20.8	28.9	-	-
HCM Lane LOS	A	-	-	E	C	D	-	-
HCM 95th %tile Q(veh)	0	-	-	1.8	0.1	0	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	34	43	194	1616	2212	117		
Future Volume (veh/h)	34	43	194	1616	2212	117		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	37	47	211	1757	2404	127		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	127	540	1177	4425	2641	822		
Arrive On Green	0.04	0.04	0.30	0.87	0.52	0.52		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	37	47	211	1757	2404	127		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	1.4	0.0	0.7	8.8	55.6	5.4		
Cycle Q Clear(g_c), s	1.4	0.0	0.7	8.8	55.6	5.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	127	540	1177	4425	2641	822		
V/C Ratio(X)	0.29	0.09	0.18	0.40	0.91	0.15		
Avail Cap(c_a), veh/h	806	852	1177	4425	2641	822		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.74	0.74	1.00	1.00		
Uniform Delay (d), s/veh	60.5	28.9	30.9	1.7	28.3	16.2		
Incr Delay (d2), s/veh	1.3	0.1	0.1	0.2	6.0	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	1.7	2.6	4.1	27.3	2.5		
LnGrp Delay(d),s/veh	61.7	28.9	30.9	1.9	34.3	16.6		
LnGrp LOS	E	C	C	A	C	B		
Approach Vol, veh/h	84			1968	2531			
Approach Delay, s/veh	43.4			5.0	33.4			
Approach LOS	D			A	C			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		118.2		10.8	45.2	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		30.2	* 16	* 67		
Max Q Clear Time (g_c+I1), s		10.8		3.4	2.7	57.6		
Green Ext Time (p_c), s		27.4		0.2	10.1	8.6		

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

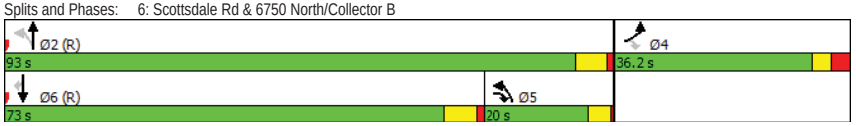
Timing Report, Sorted By Phase
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	36.2	20	73
Maximum Split (%)	72.0%	28.0%	15.5%	56.5%
Minimum Split (s)	36	36.2	8	36.9
Yellow Time (s)	4.9	3	3.5	4.9
All-Red Time (s)	1.1	3	0.5	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	65	28.8	8.8	65
End Time (s)	28.8	65	28.8	8.8
Yield/Force Off (s)	22.8	59	24.8	2.8
Yield/Force Off 170(s)	0.8	40	24.8	110
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	123.2	89	67
Local Yield 170(s)	65	104.2	89	45

Intersection Summary	
Cycle Length	129.2
Control Type	Actuated-Coordinated
Natural Cycle	95
Offset: 65 (50%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



HCM 2010 Signalized Intersection Summary
7: Tatum Blvd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	794	69	296	744	103	49	555	421	314	941	404
Future Volume (veh/h)	171	794	69	296	744	103	49	555	421	314	941	404
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	186	863	75	322	809	112	53	603	458	341	1023	439
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	887	77	252	1090	488	174	1065	476	397	1470	658
Arrive On Green	0.07	0.27	0.27	0.11	0.31	0.31	0.03	0.30	0.30	0.15	0.42	0.42
Sat Flow, veh/h	3442	3295	286	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	186	463	475	322	809	112	53	603	458	341	1023	439
Grp Sat Flow(s),veh/h/ln	1721	1770	1812	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.9	33.7	33.7	14.0	26.7	6.8	2.7	18.7	37.0	16.7	30.9	29.2
Cycle Q Clear(g_c), s	6.9	33.7	33.7	14.0	26.7	6.8	2.7	18.7	37.0	16.7	30.9	29.2
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	476	488	252	1090	488	174	1065	476	397	1471	658
V/C Ratio(X)	0.78	0.97	0.97	1.28	0.74	0.23	0.30	0.57	0.96	0.86	0.70	0.67
Avail Cap(c_a), veh/h	318	476	488	252	1090	488	174	1065	476	521	1471	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	47.0	47.0	37.1	40.4	33.5	31.1	38.3	44.7	27.3	31.2	30.7
Incr Delay (d2), s/veh	6.1	35.0	34.5	148.5	4.0	1.0	0.4	2.2	32.7	8.9	2.7	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	21.1	21.6	19.4	13.6	3.1	1.3	9.5	20.5	9.0	15.6	13.6
LnGrp Delay(d),s/veh	65.7	82.0	81.5	185.6	44.4	34.5	31.5	40.5	77.4	36.2	34.0	36.0
LnGrp LOS	E	F	F	F	D	C	C	D	E	D	C	D
Approach Vol, veh/h		1124			1243			1114			1803	
Approach Delay, s/veh		79.1			80.1			55.2			34.9	
Approach LOS		E			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	47.0	22.9	46.1	19.0	42.0	8.0	61.0
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	12.0	37.0	28.0	30.0	14.0	35.0	4.0	54.0
Max Q Clear Time (g_c+I1), s	8.9	28.7	18.7	39.0	16.0	35.7	4.7	32.9
Green Ext Time (p_c), s	0.1	7.8	0.2	0.0	0.0	0.0	0.0	20.1

Intersection Summary	
HCM 2010 Ctrl Delay	59.2
HCM 2010 LOS	E

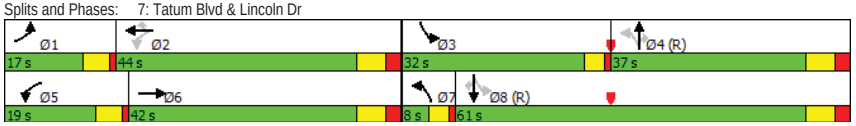
Timing Report, Sorted By Phase
7: Tatum Blvd & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBT	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	17	44	32	37	19	42	8	61
Maximum Split (%)	13.1%	33.8%	24.6%	28.5%	14.6%	32.3%	6.2%	46.9%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	101	15	47	84	103	15	23
End Time (s)	101	15	47	84	103	15	23	84
Yield/Force Off (s)	96	8	43	77	98	8	19	77
Yield/Force Off 170(s)	96	115	43	53	98	115	19	53
Local Start Time (s)	37	54	98	0	37	56	98	106
Local Yield (s)	49	91	126	30	51	91	102	30
Local Yield 170(s)	49	68	126	6	51	68	102	6

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	100
Offset: 47 (36%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
8: Invergordon Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1109	205	57	1042	22	107	4	97	19	11	5
Future Volume (veh/h)	10	1109	205	57	1042	22	107	4	97	19	11	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	1205	223	62	1133	24	116	4	105	21	12	5
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	1979	364	267	2349	50	326	9	224	149	75	22
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	484	2987	549	373	3544	75	1390	58	1534	460	516	148
Grp Volume(v), veh/h	11	711	717	62	566	591	116	0	109	38	0	0
Grp Sat Flow(s),veh/h/ln	484	1770	1766	373	1770	1849	1390	0	1592	1124	0	0
Q Serve(g_s), s	0.8	15.4	15.7	7.7	10.8	10.8	0.0	0.0	4.3	0.1	0.0	0.0
Cycle Q Clear(g_c), s	11.6	15.4	15.7	23.4	10.8	10.8	4.4	0.0	4.3	4.3	0.0	0.0
Prop In Lane	1.00		0.31	1.00		0.04	1.00		0.96	0.55		0.13
Lane Grp Cap(c), veh/h	350	1173	1170	267	1173	1226	326	0	233	246	0	0
V/C Ratio(X)	0.03	0.61	0.61	0.23	0.48	0.48	0.36	0.00	0.47	0.15	0.00	0.00
Avail Cap(c_a), veh/h	350	1173	1170	267	1173	1226	614	0	562	549	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.37	0.37	0.37	0.79	0.79	0.79	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.5	6.5	6.5	13.1	5.7	5.7	26.7	0.0	26.6	25.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.9	0.9	1.6	1.1	1.1	0.7	0.0	1.5	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	7.6	7.9	0.9	5.6	5.8	2.1	0.0	2.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	8.6	7.3	7.4	14.8	6.8	6.8	27.3	0.0	28.1	25.7	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C		C	C		
Approach Vol, veh/h		1439			1219			225			38	
Approach Delay, s/veh		7.4			7.2			27.7			25.7	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.1		16.9		51.1		16.9
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		31.0		24.0		31.0		24.0
Max Q Clear Time (g_c+I1), s		25.4		6.4		17.7		6.3
Green Ext Time (p_c), s		5.3		1.1		11.9		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

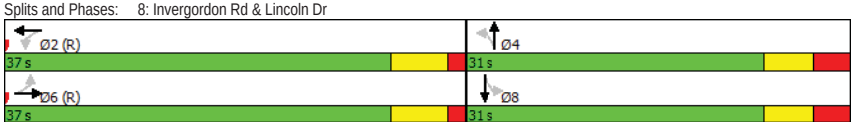
Timing Report, Sorted By Phase
8: Invergordon Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	37	31	37	31
Maximum Split (%)	54.4%	45.6%	54.4%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	28	59	28
End Time (s)	28	59	28	59
Yield/Force Off (s)	22	52	22	52
Yield/Force Off 170(s)	11	35	11	52
Local Start Time (s)	0	37	0	37
Local Yield (s)	31	61	31	61
Local Yield 170(s)	20	44	20	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	65
Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	1149	35	26	962	23	17	57	35	94	115	322
Future Volume (veh/h)	257	1149	35	26	962	23	17	57	35	94	115	322
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	279	1249	38	28	1046	25	18	62	38	102	125	350
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	574	2297	70	125	1250	30	199	169	104	300	464	394
Arrive On Green	0.25	0.65	0.65	0.71	0.71	0.71	0.16	0.16	0.16	0.06	0.25	0.25
Sat Flow, veh/h	1774	3507	107	427	3533	84	915	1082	663	1774	1863	1583
Grp Volume(v), veh/h	279	630	657	28	524	547	18	0	100	102	125	350
Grp Sat Flow(s),veh/h/ln	1774	1770	1844	427	1770	1848	915	0	1746	1774	1863	1583
Q Serve(g_s), s	7.5	24.8	24.8	6.6	27.6	27.6	2.2	0.0	6.7	6.1	7.0	27.7
Cycle Q Clear(g_c), s	7.5	24.8	24.8	31.4	27.6	27.6	2.2	0.0	6.7	6.1	7.0	27.7
Prop In Lane	1.00		0.06	1.00		0.05	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	574	1159	1208	125	626	654	199	0	273	300	464	394
V/C Ratio(X)	0.49	0.54	0.54	0.22	0.84	0.84	0.09	0.00	0.37	0.34	0.27	0.89
Avail Cap(c_a), veh/h	574	1159	1208	125	626	654	270	0	410	423	738	627
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	0.84	0.84	0.84	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	12.0	12.0	26.5	16.3	16.3	47.2	0.0	49.1	40.8	39.3	47.1
Incr Delay (d2), s/veh	0.5	1.4	1.4	3.5	10.8	10.4	0.2	0.0	0.8	0.7	0.3	9.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	12.5	13.1	0.9	15.0	15.6	0.6	0.0	3.3	3.0	3.7	13.1
LnGrp Delay(d),s/veh	35.8	13.4	13.4	30.0	27.1	26.7	47.4	0.0	49.9	41.5	39.6	56.5
LnGrp LOS	D	B	B	C	C	C	D		D	D	D	E
Approach Vol, veh/h		1566			1099			118			577	
Approach Delay, s/veh		17.4			26.9			49.5			50.2	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	39.1	52.0	12.0	26.8		91.1		38.9
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	16.0	* 46	17.0	30.5		66.0		51.5
Max Q Clear Time (g_c+I1), s	9.5	33.4	8.1	8.7		26.8		29.7
Green Ext Time (p_c), s	4.5	6.0	0.1	2.6		13.4		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.3
HCM 2010 LOS	C

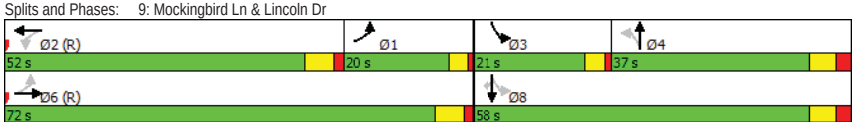
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	20	52	21	37	72	58
Maximum Split (%)	15.4%	40.0%	16.2%	28.5%	55.4%	44.6%
Minimum Split (s)	8	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	50	128	70	91	128	70
End Time (s)	70	50	91	128	70	128
Yield/Force Off (s)	66	44	87	121.5	64	121.5
Yield/Force Off 170(s)	66	30	87	101.5	50	101.5
Local Start Time (s)	52	0	72	93	0	72
Local Yield (s)	68	46	89	123.5	66	123.5
Local Yield 170(s)	68	32	89	103.5	52	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 128 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	1135	5	5	1220	27	5	0	5	50	0	91
Future Volume (veh/h)	157	1135	5	5	1220	27	5	0	5	50	0	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	171	1234	5	5	1326	29	5	0	5	54	0	99
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	2976	12	392	2665	58	78	13	50	179	0	128
Arrive On Green	0.08	1.00	1.00	0.75	0.75	0.75	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1774	3615	15	447	3541	77	457	159	616	1538	0	1583
Grp Volume(v), veh/h	171	604	635	5	662	693	10	0	0	54	0	99
Grp Sat Flow(s),veh/h/ln	1774	1770	1860	447	1770	1849	1231	0	0	1538	0	1583
Q Serve(g_s), s	2.9	0.0	0.0	0.4	19.2	19.3	0.0	0.0	0.0	0.0	0.0	8.0
Cycle Q Clear(g_c), s	2.9	0.0	0.0	0.4	19.2	19.3	3.8	0.0	0.0	3.8	0.0	8.0
Prop In Lane	1.00		0.01	1.00		0.04	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	368	1457	1531	392	1332	1392	141	0	0	179	0	128
V/C Ratio(X)	0.46	0.41	0.41	0.01	0.50	0.50	0.07	0.00	0.00	0.30	0.00	0.78
Avail Cap(c_a), veh/h	516	1457	1531	392	1332	1392	322	0	0	358	0	329
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.71	0.71	0.71	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.4	0.0	0.0	4.0	6.4	6.4	55.3	0.0	0.0	56.7	0.0	58.6
Incr Delay (d2), s/veh	0.8	0.7	0.7	0.0	0.9	0.9	0.2	0.0	0.0	0.9	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.3	0.3	0.0	9.5	10.0	0.3	0.0	0.0	1.9	0.0	3.8
LnGrp Delay(d),s/veh	6.2	0.7	0.7	4.1	7.3	7.3	55.5	0.0	0.0	57.6	0.0	68.2
LnGrp LOS	A	A	A	A	A	A	E			E		E
Approach Vol, veh/h		1410			1360			10			153	
Approach Delay, s/veh		1.4			7.3			55.5			64.5	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		16.5		113.5		16.5	9.2	104.3
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		27.0		90.5		27.0	16.0	70.5
Max Q Clear Time (g_c+I1), s		5.8		2.0		10.0	4.9	21.3
Green Ext Time (p_c), s		0.6		45.4		0.5	0.3	32.8

Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A

Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

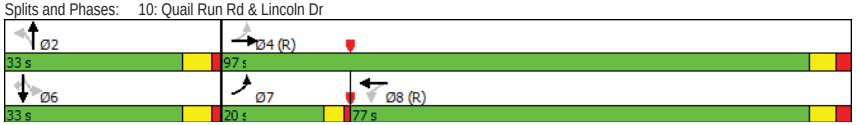
11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	33	97	33	20	77
Maximum Split (%)	25.4%	74.6%	25.4%	15.4%	59.2%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	54	87	54	87	107
End Time (s)	87	54	87	107	54
Yield/Force Off (s)	81	47.5	81	103	47.5
Yield/Force Off 170(s)	61	33.5	61	103	33.5
Local Start Time (s)	77	110	77	110	0
Local Yield (s)	104	70.5	104	126	70.5
Local Yield 170(s)	84	56.5	84	126	56.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 107 (82%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	666	46	410	25	33	45	299	1236	29	30	1752	664
Future Volume (veh/h)	666	46	410	25	33	45	299	1236	29	30	1752	664
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	760	0	446	27	36	49	325	1343	32	33	1904	722
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	0	196	85	85	76	373	3213	77	42	2765	937
Arrive On Green	0.10	0.00	0.10	0.05	0.05	0.05	0.22	1.00	1.00	0.02	0.54	0.54
Sat Flow, veh/h	3548	0	1583	1774	1770	1583	3442	5110	122	1774	5085	1583
Grp Volume(v), veh/h	760	0	446	27	36	49	325	891	484	33	1904	722
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1583	1721	1695	1841	1774	1695	1583
Q Serve(g_s), s	12.0	0.0	12.0	1.8	2.4	3.6	10.9	0.0	0.0	2.2	32.8	41.1
Cycle Q Clear(g_c), s	12.0	0.0	12.0	1.8	2.4	3.6	10.9	0.0	0.0	2.2	32.8	41.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	355	0	196	85	85	76	373	2131	1158	42	2765	937
V/C Ratio(X)	2.14	0.00	2.28	0.32	0.43	0.65	0.87	0.42	0.42	0.79	0.69	0.77
Avail Cap(c_a), veh/h	355	0	196	281	280	251	430	2131	1158	148	2765	937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	1.00	1.00	1.00	0.80	0.80	0.80	0.73	0.73	0.73
Uniform Delay (d), s/veh	54.0	0.0	52.6	55.2	55.5	56.1	46.2	0.0	0.0	58.3	20.0	18.4
Incr Delay (d2), s/veh	522.4	0.0	591.0	0.8	1.3	3.4	11.9	0.5	0.9	8.8	1.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.6	0.0	38.6	0.9	1.2	1.7	5.8	0.1	0.3	1.2	15.4	21.0
LnGrp Delay(d),s/veh	576.4	0.0	643.6	56.0	56.8	59.6	58.1	0.5	0.9	67.1	21.0	22.9
LnGrp LOS	F		F	E	E	E	E	A	A	E	C	C
Approach Vol, veh/h		1206			112			1700			2659	
Approach Delay, s/veh		601.3			57.8			11.6			22.1	
Approach LOS		F			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	81.4		12.7	17.0	71.3		19.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	10.0	55.0		19.0	15.0	50.0		12.0
Max Q Clear Time (g_c+I1), s	4.2	2.0		5.6	12.9	43.1		14.0
Green Ext Time (p_c), s	0.0	7.3		0.2	0.1	4.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	142.7
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Timing Report, Sorted By Phase
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	14	61	26	19	56	19
Maximum Split (%)	11.7%	50.8%	21.7%	15.8%	46.7%	15.8%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	4	4	4	4	4	4
Vehicle Extension (s)	1	0.2	2	1	0.2	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	71	85	26	71	90	52
End Time (s)	85	26	52	90	26	71
Yield/Force Off (s)	81	20	45	86	20	64
Yield/Force Off 170(s)	81	5	19	86	5	38
Local Start Time (s)	101	115	56	101	0	82
Local Yield (s)	111	50	75	116	50	94
Local Yield 170(s)	111	35	49	116	35	68

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 90 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr

HCM 2010 AWSC
12: Mockingbird Ln & McDonald Dr

11/5/2015

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	55	229	9	0	8	285	41	0	5	5	5
Future Vol, veh/h	0	55	229	9	0	8	285	41	0	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	60	249	10	0	9	310	45	0	5	5	5
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	11.2	13.8	9.7
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	33%	100%	0%	100%	0%	100%	0%
Vol Thru, %	33%	0%	96%	0%	87%	0%	7%
Vol Right, %	33%	0%	4%	0%	13%	0%	93%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	55	238	8	326	80	72
LT Vol	5	55	0	8	0	80	0
Through Vol	5	0	229	0	285	0	5
RT Vol	5	0	9	0	41	0	67
Lane Flow Rate	16	60	259	9	354	87	78
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.03	0.098	0.388	0.014	0.522	0.165	0.123
Departure Headway (Hd)	6.53	6.031	5.499	5.901	5.308	6.827	5.662
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	551	598	660	600	670	529	637
Service Time	4.537	3.731	3.199	3.699	3.106	4.529	3.363
HCM Lane V/C Ratio	0.029	0.1	0.392	0.015	0.528	0.164	0.122
HCM Control Delay	9.7	9.4	11.6	8.8	13.9	10.9	9.2
HCM Lane LOS	A	A	B	A	B	B	A
HCM 95th-tile Q	0.1	0.3	1.8	0	3	0.6	0.4

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	80	5	67
Future Vol, veh/h	0	80	5	67
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	87	5	73
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.1
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	240	35	301	347	326	47	1152	143	209	1833	72
Future Volume (veh/h)	125	240	35	301	347	326	47	1152	143	209	1833	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	136	261	38	327	377	354	51	1252	155	227	1992	78
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	341	49	281	497	590	412	1907	594	798	1907	594
Arrive On Green	0.08	0.11	0.11	0.11	0.14	0.14	0.23	0.38	0.38	0.31	0.50	0.50
Sat Flow, veh/h	1774	3106	447	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	136	147	152	327	377	354	51	1252	155	227	1992	78
Grp Sat Flow(s),veh/h/ln	1774	1770	1784	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	4.4	9.7	9.9	13.0	12.3	0.0	2.7	24.5	8.1	6.0	45.0	3.2
Cycle Q Clear(g_c), s	4.4	9.7	9.9	13.0	12.3	0.0	2.7	24.5	8.1	6.0	45.0	3.2
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	194	196	281	497	590	412	1907	594	798	1907	594
V/C Ratio(X)	0.67	0.76	0.78	1.16	0.76	0.60	0.12	0.66	0.26	0.28	1.04	0.13
Avail Cap(c_a), veh/h	257	339	342	281	678	671	412	1907	594	798	1907	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.48	0.48	0.48
Uniform Delay (d), s/veh	52.0	51.9	52.0	51.3	49.6	30.4	36.4	31.1	26.0	33.9	30.1	19.6
Incr Delay (d2), s/veh	4.6	6.0	6.4	105.1	3.4	1.2	0.1	1.8	1.1	0.1	27.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	5.1	5.2	17.5	6.3	9.6	1.3	11.8	3.7	2.9	25.8	1.4
LnGrp Delay(d),s/veh	56.6	57.9	58.4	156.4	53.0	31.6	36.6	32.9	27.0	34.0	57.8	19.8
LnGrp LOS	E	E	E	F	D	C	D	C	C	C	F	B
Approach Vol, veh/h		435			1058			1458			2297	
Approach Delay, s/veh		57.7			77.8			32.4			54.1	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.8	51.0	17.0	20.2	31.8	51.0	13.3	23.8
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	18.0	45.0	* 13	23.0	18.0	45.0	* 13	23.0
Max Q Clear Time (g_c+I1), s	19.0	26.5	15.0	11.9	4.7	47.0	6.4	14.3
Green Ext Time (p_c), s	0.7	9.4	0.0	1.2	0.7	0.0	0.9	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	53.2
HCM 2010 LOS	D

Notes

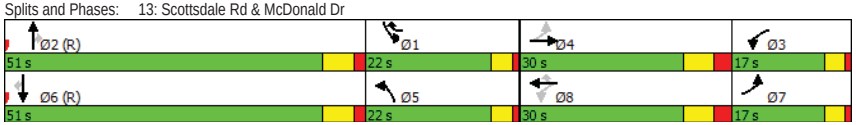
User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	22	51	17	30	22	51	17	30
Maximum Split (%)	18.3%	42.5%	14.2%	25.0%	18.3%	42.5%	14.2%	25.0%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	81	30	13	103	81	30	13	103
End Time (s)	103	81	30	13	103	81	30	13
Yield/Force Off (s)	99	75	26	6	99	75	26	6
Yield/Force Off 170(s)	99	59	26	102	99	59	26	102
Local Start Time (s)	51	0	103	73	51	0	103	73
Local Yield (s)	69	45	116	96	69	45	116	96
Local Yield 170(s)	69	29	116	72	69	29	116	72

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	105

Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



Intersection	
Intersection Delay, s/veh	5.0
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	181	224	61
Demand Flow Rate, veh/h	184	228	63
Vehicles Circulating, veh/h	22	25	168
Vehicles Exiting, veh/h	231	205	38
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.8	5.2	4.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	184	228	63
Cap Entry Lane, veh/h	1105	1102	955
Entry HV Adj Factor	0.982	0.982	0.968
Flow Entry, veh/h	181	224	61
Cap Entry, veh/h	1086	1083	925
V/C Ratio	0.166	0.207	0.066
Control Delay, s/veh	4.8	5.2	4.5
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	183	3	6	193	13	29
Future Vol, veh/h	183	3	6	193	13	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	199	3	7	210	14	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	202	0	424	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	223	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1370	-	587	840
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1370	-	584	840
Mov Cap-2 Maneuver	-	-	-	-	641	-
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	810	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	766	-	-	1370	-
HCM Lane V/C Ratio	0.06	-	-	0.005	-
HCM Control Delay (s)	10	-	-	7.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	239	17	40	215	23	54
Future Vol, veh/h	239	17	40	215	23	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	260	18	43	234	25	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	278	0	473	269
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	204	-
Critical Hdwy	-	-	4.12	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.218	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1285	-	535	769
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	811	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1285	-	517	769
Mov Cap-2 Maneuver	-	-	-	-	592	-
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	784	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	706	-	-	1285	-
HCM Lane V/C Ratio	0.119	-	-	0.034	-
HCM Control Delay (s)	10.8	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	3	1	0	1710	1840	6
Future Vol, veh/h	3	1	0	1710	1840	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1	0	1859	2000	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2743	1000	2000	0	-	0
Stage 1	2000	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	37	207	125	-	-	-
Stage 1	57	-	-	-	-	-
Stage 2	392	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	37	207	125	-	-	-
Mov Cap-2 Maneuver	37	-	-	-	-	-
Stage 1	57	-	-	-	-	-
Stage 2	392	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	125	-	207	-	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	0	-	22.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	44	0	0	13	21	14
Future Vol, veh/h	44	0	0	13	21	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	0	0	14	23	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	44	30	38	0	-	0
Stage 1	30	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	967	1044	1572	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	967	1044	1572	-	-	-
Mov Cap-2 Maneuver	967	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1572	-	967	-	-
HCM Lane V/C Ratio	-	-	0.049	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	10	5	7	22	11	10
Future Vol, veh/h	10	5	7	22	11	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	5	8	24	12	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	55	20	0	0	32	0
Stage 1	20	-	-	-	-	-
Stage 2	35	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	953	1058	-	-	1580	-
Stage 1	1003	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	945	1058	-	-	1580	-
Mov Cap-2 Maneuver	945	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	980	1580	-
HCM Lane V/C Ratio	-	-	0.017	0.008	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	15	5	25	19	8	13
Future Vol, veh/h	15	5	25	19	8	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	5	27	21	9	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	70	38	0	0	48	0
Stage 1	38	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	934	1034	-	-	1559	-
Stage 1	984	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	928	1034	-	-	1559	-
Mov Cap-2 Maneuver	928	-	-	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	985	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	952	1559	-
HCM Lane V/C Ratio	-	-	0.023	0.006	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	15	9	33	18	9	20
Future Vol, veh/h	15	9	33	18	9	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	10	36	20	10	22

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	87	46	0	0	55	0
Stage 1	46	-	-	-	-	-
Stage 2	41	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	914	1023	-	-	1550	-
Stage 1	976	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	908	1023	-	-	1550	-
Mov Cap-2 Maneuver	908	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	948	1550	-
HCM Lane V/C Ratio	-	-	0.028	0.006	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	19	8	12	160	49	13
Future Vol, veh/h	19	8	12	160	49	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	9	13	174	53	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	150	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1387	-	-	-	842	956
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1387	-	-	-	829	956
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	SB
HCM Control Delay, s	5.4	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1387	-	-	-	833
HCM Lane V/C Ratio	0.015	-	-	-	0.081
HCM Control Delay (s)	7.6	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	31	4	67	49	1	26
Future Vol, veh/h	31	4	67	49	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	4	73	53	1	28

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	129	99	0	0	126	0
Stage 1	99	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	865	957	-	-	1460	-
Stage 1	925	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	864	957	-	-	1460	-
Mov Cap-2 Maneuver	864	-	-	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	992	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	874	1460	-
HCM Lane V/C Ratio	-	-	0.044	0.001	-
HCM Control Delay (s)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

HCM 2010 Roundabout
31: Quail Run Rd & South Residential Access

11/5/2015

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	33	22	192	62
Demand Flow Rate, veh/h	34	22	196	63
Vehicles Circulating, veh/h	85	140	0	33
Vehicles Exiting, veh/h	11	56	119	129
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.9	3.9	4.8	3.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	34	22	196	63
Cap Entry Lane, veh/h	1038	982	1130	1093
Entry HV Adj Factor	0.971	1.000	0.982	0.980
Flow Entry, veh/h	33	22	192	62
Cap Entry, veh/h	1007	982	1110	1072
V/C Ratio	0.033	0.022	0.173	0.058
Control Delay, s/veh	3.9	3.9	4.8	3.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

HCM 2010 TWSC
32: Quail Run Rd & Townhome Access

11/5/2015

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	34	0	177	7	0	107
Future Vol, veh/h	34	0	177	7	0	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	0	192	8	0	116

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	312	196	0	0	200	0
Stage 1	196	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	681	845	-	-	1372	-
Stage 1	837	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	681	845	-	-	1372	-
Mov Cap-2 Maneuver	681	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	681	1372	-
HCM Lane V/C Ratio	-	-	0.054	-	-
HCM Control Delay (s)	-	-	10.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	32	222	0	19	17	4	0	297	40	47
Future Vol, veh/h	0	4	32	222	0	19	17	4	0	297	40	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	35	241	0	21	18	4	0	323	43	51
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	11.4	9.8	13.7
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	47%	4%
Vol Thru, %	0%	46%	0%	13%	43%	82%
Vol Right, %	0%	54%	0%	87%	10%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	297	87	4	254	40	28
LT Vol	297	0	4	0	19	1
Through Vol	0	40	0	32	17	23
RT Vol	0	47	0	222	4	4
Lane Flow Rate	323	95	4	276	43	30
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.529	0.132	0.008	0.399	0.076	0.051
Departure Headway (Hd)	5.9	5.017	6.319	5.197	6.271	6.007
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	604	705	563	687	574	599
Service Time	3.698	2.814	4.095	2.973	4.273	4.011
HCM Lane V/C Ratio	0.535	0.135	0.007	0.402	0.075	0.05
HCM Control Delay	15.2	8.6	9.1	11.4	9.8	9.3
HCM Lane LOS	C	A	A	B	A	A
HCM 95th-tile Q	3.1	0.5	0	1.9	0.2	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	23	4
Future Vol, veh/h	0	1	23	4
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	25	4
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.3
HCM LOS	A

Lane

HCM 2010 TWSC
2: Mockingbird Ln & Indian Bend Rd.

11/5/2015

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	149	82	327	175	72	197
Future Vol, veh/h	149	82	327	175	72	197
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	162	89	355	190	78	214

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	822	451	0	0	546	0
Stage 1	451	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	344	608	-	-	1023	-
Stage 1	642	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	318	608	-	-	1023	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	2.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	439	608	1023	-
HCM Lane V/C Ratio	-	-	0.369	0.147	0.077	-
HCM Control Delay (s)	-	-	17.9	11.9	8.8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.7	0.5	0.2	-

HCM 2010 TWSC
3: Indian Bend Rd. & Scottsdale Plaza Resort Dwy

11/5/2015

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	4	221	5	78	268	15	5	0	155	4	0	4
Future Vol, veh/h	4	221	5	78	268	15	5	0	155	4	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	240	5	85	291	16	5	0	168	4	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	308	0	0	246	0	0	723	729	243	805	723	299
Stage 1	-	-	-	-	-	-	252	252	-	469	469	-
Stage 2	-	-	-	-	-	-	471	477	-	336	254	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1253	-	-	1320	-	-	342	350	796	301	352	741
Stage 1	-	-	-	-	-	-	752	698	-	575	561	-
Stage 2	-	-	-	-	-	-	573	556	-	678	697	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1253	-	-	1320	-	-	322	326	796	225	328	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	322	326	-	225	328	-
Stage 1	-	-	-	-	-	-	750	696	-	573	525	-
Stage 2	-	-	-	-	-	-	533	520	-	533	695	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.7	11.1	15.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	761	1253	-	-	1320	-	-	345
HCM Lane V/C Ratio	0.229	0.003	-	-	0.064	-	-	0.025
HCM Control Delay (s)	11.1	7.9	-	-	7.9	-	-	15.7
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0	-	-	0.2	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	241	69	478	281	132	113	1871	515	182	1628	78
Future Volume (veh/h)	156	241	69	478	281	132	113	1871	515	182	1628	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	170	262	75	520	305	143	123	2034	560	198	1770	85
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	196	171	145	580	325	458	293	2161	940	268	2161	673
Arrive On Green	0.11	0.09	0.09	0.17	0.17	0.17	0.11	0.43	0.43	0.11	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	170	262	75	520	305	143	123	2034	560	198	1770	85
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	11.3	11.0	5.4	17.8	19.4	1.7	1.4	46.0	6.4	8.4	36.8	2.6
Cycle Q Clear(g_c), s	11.3	11.0	5.4	17.8	19.4	1.7	1.4	46.0	6.4	8.4	36.8	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	196	171	145	580	325	458	293	2161	940	268	2161	673
V/C Ratio(X)	0.87	1.53	0.52	0.90	0.94	0.31	0.42	0.94	0.60	0.74	0.82	0.13
Avail Cap(c_a), veh/h	207	171	145	660	325	458	296	2161	940	272	2161	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	54.5	52.0	48.8	48.9	16.2	45.5	33.1	15.3	49.3	30.4	9.2
Incr Delay (d2), s/veh	27.4	267.7	1.5	12.8	33.4	0.1	0.4	9.7	2.8	8.8	3.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	18.3	2.4	9.5	13.0	2.5	3.7	23.4	3.3	6.9	17.9	1.2
LnGrp Delay(d),s/veh	79.9	322.2	53.4	61.6	82.3	16.4	45.8	42.8	18.1	58.1	34.0	9.6
LnGrp LOS	E	F	D	E	F	B	D	D	B	E	C	A
Approach Vol, veh/h		507			968			2717			2053	
Approach Delay, s/veh		201.2			61.5			37.8			35.3	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	57.0	27.2	18.0	17.8	57.0	17.3	28.0
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 14	51.0	* 23	* 11	* 14	51.0	14.0	* 20
Max Q Clear Time (g_c+I1), s	10.4	48.0	19.8	13.0	3.4	38.8	13.3	21.4
Green Ext Time (p_c), s	0.1	1.6	0.5	0.0	0.1	3.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.9
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

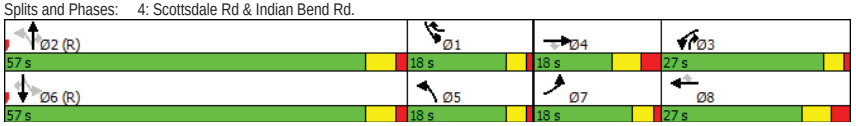
Timing Report, Sorted By Phase
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	18	57	27	18	18	57	18	27
Maximum Split (%)	15.0%	47.5%	22.5%	15.0%	15.0%	47.5%	15.0%	22.5%
Minimum Split (s)	9.4	29.4	8.5	13	9.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	87	30	3	105	87	30	105	3
End Time (s)	105	87	30	3	105	87	3	30
Yield/Force Off (s)	101	81	26	116	101	81	119	23
Yield/Force Off 170(s)	101	65	26	85	101	65	119	112
Local Start Time (s)	57	0	93	75	57	0	75	93
Local Yield (s)	71	51	116	86	71	51	89	113
Local Yield 170(s)	71	35	116	55	71	35	89	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



HCM 2010 TWSC
5: Scottsdale Rd & Joshua Tree Ln

11/5/2015

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	115	0	0	10	0	2455	6	9	2171	79
Future Vol, veh/h	0	0	115	0	0	10	0	2455	6	9	2171	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	150	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	125	0	0	11	0	2668	7	10	2360	86

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3446	5054	1180	3635	5051	1338	2360	0	0	2675	0	0
Stage 1	2379	2379	-	2672	2672	-	-	-	-	-	-	-
Stage 2	1067	2675	-	963	2379	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	7	1	157	6	1	123	82	-	-	56	-	-
Stage 1	20	66	-	12	46	-	-	-	-	-	-	-
Stage 2	214	46	-	248	66	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	6	1	157	1	1	123	82	-	-	56	-	-
Mov Cap-2 Maneuver	6	1	-	1	1	-	-	-	-	-	-	-
Stage 1	20	54	-	12	46	-	-	-	-	-	-	-
Stage 2	195	46	-	42	54	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	83.7	37.1	0	0.3
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	82	-	-	157	123	56	-	-
HCM Lane V/C Ratio	-	-	-	0.796	0.088	0.175	-	-
HCM Control Delay (s)	0	-	-	83.7	37.1	82.4	-	-
HCM Lane LOS	A	-	-	F	E	F	-	-
HCM 95th %tile Q(veh)	0	-	-	5.1	0.3	0.6	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	139	244	316	2318	2276	79		
Future Volume (veh/h)	139	244	316	2318	2276	79		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	151	265	343	2520	2474	86		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	238	540	1059	4260	2641	822		
Arrive On Green	0.07	0.07	0.27	0.84	0.52	0.52		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	151	265	343	2520	2474	86		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	5.5	0.0	5.3	20.6	58.7	3.6		
Cycle Q Clear(g_c), s	5.5	0.0	5.3	20.6	58.7	3.6		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	238	540	1059	4260	2641	822		
V/C Ratio(X)	0.63	0.49	0.32	0.59	0.94	0.10		
Avail Cap(c_a), veh/h	806	801	1059	4260	2641	822		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.22	0.22	1.00	1.00		
Uniform Delay (d), s/veh	58.4	33.6	35.1	3.4	29.0	15.8		
Incr Delay (d2), s/veh	2.8	0.7	0.0	0.1	7.9	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.7	9.5	4.7	9.4	29.2	1.6		
LnGrp Delay(d),s/veh	61.2	34.3	35.1	3.5	36.9	16.0		
LnGrp LOS	E	C	D	A	D	B		
Approach Vol, veh/h	416			2863	2560			
Approach Delay, s/veh	44.1			7.3	36.2			
Approach LOS	D			A	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		114.1		14.9	41.1	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		30.2	* 16	* 67		
Max Q Clear Time (g_c+I1), s		22.6		7.5	7.3	60.7		
Green Ext Time (p_c), s		48.0		1.4	6.9	5.9		
Intersection Summary								
HCM 2010 Ctrl Delay			22.6					
HCM 2010 LOS			C					
Notes								

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

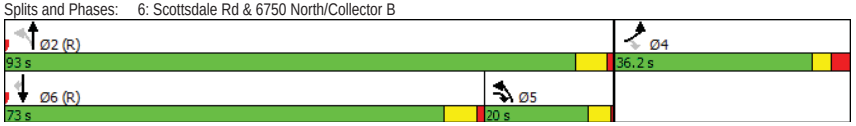
Timing Report, Sorted By Phase
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	36.2	20	73
Maximum Split (%)	72.0%	28.0%	15.5%	56.5%
Minimum Split (s)	36	36.2	8	36.9
Yellow Time (s)	4.9	3	3.5	4.9
All-Red Time (s)	1.1	3	0.5	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	65	28.8	8.8	65
End Time (s)	28.8	65	28.8	8.8
Yield/Force Off (s)	22.8	59	24.8	2.8
Yield/Force Off 170(s)	0.8	40	24.8	110
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	123.2	89	67
Local Yield 170(s)	65	104.2	89	45

Intersection Summary	
Cycle Length	129.2
Control Type	Actuated-Coordinated
Natural Cycle	105
Offset: 65 (50%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



HCM 2010 Signalized Intersection Summary
7: Tatum Blvd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	361	802	40	414	902	297	90	1059	371	233	641	174
Future Volume (veh/h)	361	802	40	414	902	297	90	1059	371	233	641	174
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	392	872	43	450	980	323	98	1151	403	253	697	189
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	462	845	42	219	837	375	317	1320	590	277	1579	706
Arrive On Green	0.10	0.25	0.25	0.09	0.24	0.24	0.04	0.37	0.37	0.11	0.45	0.45
Sat Flow, veh/h	3442	3433	169	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	392	449	466	450	980	323	98	1151	403	253	697	189
Grp Sat Flow(s),veh/h/ln	1721	1770	1833	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.1	32.0	32.0	12.0	30.8	25.4	4.5	39.3	27.8	12.5	17.7	9.8
Cycle Q Clear(g_c), s	11.1	32.0	32.0	12.0	30.8	25.4	4.5	39.3	27.8	12.5	17.7	9.8
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	462	436	451	219	837	375	317	1320	590	277	1579	706
V/C Ratio(X)	0.85	1.03	1.03	2.05	1.17	0.86	0.31	0.87	0.68	0.91	0.44	0.27
Avail Cap(c_a), veh/h	534	436	451	219	837	375	317	1320	590	297	1579	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.57	0.57	0.57	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	49.0	49.0	37.5	49.6	47.6	24.1	37.9	34.3	34.2	24.8	22.6
Incr Delay (d2), s/veh	9.8	51.5	50.8	483.1	84.4	14.1	0.2	8.1	6.3	28.7	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	21.8	22.5	31.4	24.8	12.6	2.2	20.7	13.2	11.1	8.8	4.4
LnGrp Delay(d),s/veh	45.5	100.5	99.8	520.6	134.1	61.7	24.3	46.0	40.6	63.0	25.7	23.6
LnGrp LOS	D	F	F	F	F	E	C	D	D	E	C	C
Approach Vol, veh/h		1307			1753			1652			1139	
Approach Delay, s/veh		83.8			220.0			43.4			33.6	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.2	37.8	18.5	55.5	17.0	39.0	9.0	65.0
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	16.0	28.0	16.0	47.0	12.0	32.0	5.0	58.0
Max Q Clear Time (g_c+I1), s	13.1	32.8	14.5	41.3	14.0	34.0	6.5	19.7
Green Ext Time (p_c), s	0.2	0.0	0.0	5.6	0.0	0.0	0.0	35.4

Intersection Summary	
HCM 2010 Ctrl Delay	103.4
HCM 2010 LOS	F

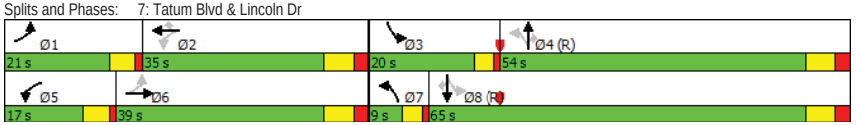
Timing Report, Sorted By Phase
7: Tatum Blvd & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBTL	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	21	35	20	54	17	39	9	65
Maximum Split (%)	16.2%	26.9%	15.4%	41.5%	13.1%	30.0%	6.9%	50.0%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	64	85	120	10	64	81	120	129
End Time (s)	85	120	10	64	81	120	129	64
Yield/Force Off (s)	80	113	6	57	76	113	125	57
Yield/Force Off 170(s)	80	90	6	33	76	90	125	33
Local Start Time (s)	54	75	110	0	54	71	110	119
Local Yield (s)	70	103	126	47	66	103	115	47
Local Yield 170(s)	70	80	126	23	66	80	115	23

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 10 (8%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
8: Invergordon Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1283	151	64	1263	26	255	22	87	26	18	10
Future Volume (veh/h)	5	1283	151	64	1263	26	255	22	87	26	18	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	1395	164	70	1373	28	277	24	95	28	20	11
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	225	1847	216	187	2052	42	441	76	300	198	133	58
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	383	3194	373	329	3547	72	1373	329	1303	519	577	251
Grp Volume(v), veh/h	5	768	791	70	684	717	277	0	119	59	0	0
Grp Sat Flow(s),veh/h/ln	383	1770	1797	329	1770	1850	1373	0	1633	1347	0	0
Q Serve(g_s), s	0.6	22.0	22.5	13.8	18.1	18.1	7.9	0.0	4.1	0.1	0.0	0.0
Cycle Q Clear(g_c), s	18.7	22.0	22.5	36.3	18.1	18.1	12.1	0.0	4.1	4.2	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.04	1.00		0.80	0.47		0.19
Lane Grp Cap(c), veh/h	225	1024	1039	187	1024	1070	441	0	376	388	0	0
V/C Ratio(X)	0.02	0.75	0.76	0.37	0.67	0.67	0.63	0.00	0.32	0.15	0.00	0.00
Avail Cap(c_a), veh/h	225	1024	1039	187	1024	1070	670	0	648	570	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.31	0.31	0.31	0.68	0.68	0.68	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.3	10.7	10.8	24.5	9.9	9.9	24.5	0.0	21.7	20.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.6	1.7	3.8	2.4	2.3	1.5	0.0	0.5	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	10.9	11.5	1.4	9.4	9.8	5.1	0.0	1.9	0.9	0.0	0.0
LnGrp Delay(d),s/veh	16.4	12.3	12.5	28.3	12.2	12.1	26.0	0.0	22.2	21.0	0.0	0.0
LnGrp LOS	B	B	B	C	B	B	C		C	C		
Approach Vol, veh/h		1564			1471			396			59	
Approach Delay, s/veh		12.4			12.9			24.9			21.0	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		45.3		22.7		45.3		22.7
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		28.0		27.0		28.0		24.0
Max Q Clear Time (g_c+I1), s		38.3		14.1		24.5		6.2
Green Ext Time (p_c), s		0.0		1.6		3.4		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

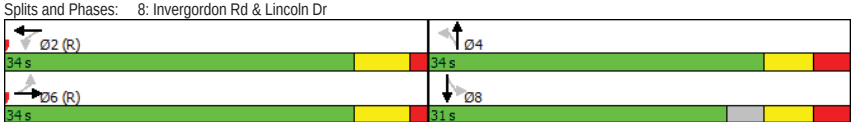
Timing Report, Sorted By Phase
8: Invergordon Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	34	34	34	31
Maximum Split (%)	50.0%	50.0%	50.0%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	25	59	25
End Time (s)	25	59	25	59
Yield/Force Off (s)	19	52	19	52
Yield/Force Off 170(s)	8	35	8	52
Local Start Time (s)	0	34	0	34
Local Yield (s)	28	61	28	61
Local Yield 170(s)	17	44	17	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	1164	18	39	1138	92	12	114	47	57	96	218
Future Volume (veh/h)	328	1164	18	39	1138	92	12	114	47	57	96	218
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	357	1265	20	42	1237	100	13	124	51	62	104	237
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	573	2550	40	156	1388	621	187	160	66	148	352	299
Arrive On Green	0.28	0.72	0.72	0.52	0.52	0.52	0.13	0.13	0.13	0.03	0.19	0.19
Sat Flow, veh/h	1774	3566	56	428	3539	1583	1035	1255	516	1774	1863	1583
Grp Volume(v), veh/h	357	628	657	42	1237	100	13	0	175	62	104	237
Grp Sat Flow(s),veh/h/ln	1774	1770	1853	428	1770	1583	1035	0	1772	1774	1863	1583
Q Serve(g_s), s	16.2	20.4	20.4	10.1	40.6	3.5	1.4	0.0	12.4	3.9	6.2	18.6
Cycle Q Clear(g_c), s	16.2	20.4	20.4	30.4	40.6	3.5	1.4	0.0	12.4	3.9	6.2	18.6
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	573	1265	1325	156	1388	621	187	0	225	148	352	299
V/C Ratio(X)	0.62	0.50	0.50	0.27	0.89	0.16	0.07	0.00	0.78	0.42	0.30	0.79
Avail Cap(c_a), veh/h	573	1265	1325	156	1388	621	274	0	375	148	509	432
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.41	0.41	0.41	0.89	0.89	0.89	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	8.2	8.2	34.2	28.6	13.5	50.1	0.0	54.9	46.9	45.3	50.3
Incr Delay (d2), s/veh	0.9	0.6	0.5	3.7	8.1	0.5	0.2	0.0	5.7	1.9	0.5	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	10.0	10.4	1.4	21.2	1.6	0.4	0.0	6.4	2.0	3.3	8.7
LnGrp Delay(d),s/veh	38.6	8.7	8.7	37.9	36.7	14.0	50.3	0.0	60.6	48.8	45.8	56.6
LnGrp LOS	D	A	A	D	D	B	D		E	D	D	E
Approach Vol, veh/h		1642			1379			188			403	
Approach Delay, s/veh		15.2			35.1			59.9			52.6	
Approach LOS		B			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	42.0	57.0	8.0	23.0		99.0		31.0
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	27.0	* 51	4.0	27.5		82.0		35.5
Max Q Clear Time (g_c+I1), s	18.2	42.6	5.9	14.4		22.4		20.6
Green Ext Time (p_c), s	5.9	5.6	0.0	2.1		15.2		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.3
HCM 2010 LOS	C

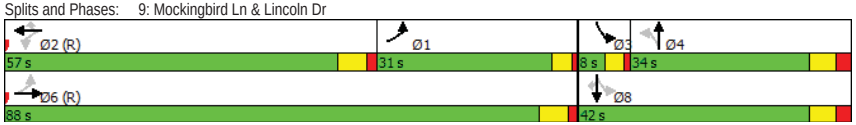
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	31	57	8	34	88	42
Maximum Split (%)	23.8%	43.8%	6.2%	26.2%	67.7%	32.3%
Minimum Split (s)	9	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	73	16	104	112	16	104
End Time (s)	104	73	112	16	104	16
Yield/Force Off (s)	100	67	108	9.5	98	9.5
Yield/Force Off 170(s)	100	53	108	119.5	84	119.5
Local Start Time (s)	57	0	88	96	0	88
Local Yield (s)	84	51	92	123.5	82	123.5
Local Yield 170(s)	84	37	92	103.5	68	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	100
Offset: 16 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	620	5	5	1007	50	5	0	5	31	0	183
Future Volume (veh/h)	174	620	5	5	1007	50	5	0	5	31	0	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	189	674	5	5	1095	54	5	0	5	34	0	199
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	406	2737	20	570	2402	1075	127	13	99	263	0	227
Arrive On Green	0.10	1.00	1.00	0.68	0.68	0.68	0.14	0.00	0.14	0.14	0.00	0.14
Sat Flow, veh/h	1774	3601	27	758	3539	1583	597	92	688	1448	0	1583
Grp Volume(v), veh/h	189	331	348	5	1095	54	10	0	0	34	0	199
Grp Sat Flow(s),veh/h/ln	1774	1770	1858	758	1770	1583	1377	0	0	1448	0	1583
Q Serve(g_s), s	4.3	0.0	0.0	0.3	18.7	1.5	0.0	0.0	0.0	0.0	0.0	16.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	0.3	18.7	1.5	2.2	0.0	0.0	2.2	0.0	16.0
Prop In Lane	1.00		0.01	1.00		1.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	406	1345	1412	570	2402	1075	239	0	0	263	0	227
V/C Ratio(X)	0.47	0.25	0.25	0.01	0.46	0.05	0.04	0.00	0.00	0.13	0.00	0.87
Avail Cap(c_a), veh/h	534	1345	1412	570	2402	1075	357	0	0	386	0	365
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	0.77	0.77	0.77	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.0	0.0	0.0	6.8	9.7	6.9	47.9	0.0	0.0	48.6	0.0	54.5
Incr Delay (d2), s/veh	0.7	0.4	0.4	0.0	0.5	0.1	0.1	0.0	0.0	0.2	0.0	12.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.1	0.1	0.1	9.3	0.7	0.3	0.0	0.0	1.1	0.0	7.8
LnGrp Delay(d),s/veh	7.7	0.4	0.4	6.8	10.2	7.0	48.0	0.0	0.0	48.8	0.0	67.4
LnGrp LOS	A	A	A	A	B	A	D			D		E
Approach Vol, veh/h		868			1154			10			233	
Approach Delay, s/veh		2.0			10.0			48.0			64.7	
Approach LOS		A			B			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		24.7		105.3		24.7	10.6	94.7
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		30.0		87.5		30.0	16.0	67.5
Max Q Clear Time (g_c+I1), s		4.2		2.0		18.0	6.3	20.7
Green Ext Time (p_c), s		0.9		22.7		0.7	0.3	19.6

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

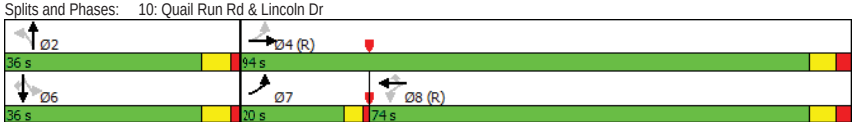
Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	36	94	36	20	74
Maximum Split (%)	27.7%	72.3%	27.7%	15.4%	56.9%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	74	110	74	110	0
End Time (s)	110	74	110	0	74
Yield/Force Off (s)	104	67.5	104	126	67.5
Yield/Force Off 170(s)	84	53.5	84	126	53.5
Local Start Time (s)	74	110	74	110	0
Local Yield (s)	104	67.5	104	126	67.5
Local Yield 170(s)	84	53.5	84	126	53.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	669	47	398	43	56	66	372	1877	37	69	1788	534
Future Volume (veh/h)	669	47	398	43	56	66	372	1877	37	69	1788	534
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	763	0	433	47	61	72	404	2040	40	75	1943	580
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	591	0	492	114	114	102	782	2182	43	255	1737	643
Arrive On Green	0.17	0.00	0.17	0.06	0.06	0.06	0.45	0.85	0.85	0.14	0.34	0.34
Sat Flow, veh/h	3548	0	1583	1774	1770	1583	3442	5135	101	1774	5085	1583
Grp Volume(v), veh/h	763	0	433	47	61	72	404	1346	734	75	1943	580
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1583	1721	1695	1845	1774	1695	1583
Q Serve(g_s), s	20.0	0.0	13.9	3.1	4.0	5.3	10.0	34.7	35.0	4.5	41.0	41.0
Cycle Q Clear(g_c), s	20.0	0.0	13.9	3.1	4.0	5.3	10.0	34.7	35.0	4.5	41.0	41.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	591	0	492	114	114	102	782	1441	784	255	1737	643
V/C Ratio(X)	1.29	0.00	0.88	0.41	0.53	0.71	0.52	0.93	0.94	0.29	1.12	0.90
Avail Cap(c_a), veh/h	591	0	492	207	206	185	782	1441	784	255	1737	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.00	0.98	1.00	1.00	1.00	0.42	0.42	0.42	0.62	0.62	0.62
Uniform Delay (d), s/veh	50.0	0.0	39.3	53.9	54.4	55.0	28.0	7.8	7.8	45.9	39.5	33.3
Incr Delay (d2), s/veh	142.8	0.0	16.5	2.3	3.8	8.6	0.3	6.2	10.4	0.4	58.7	12.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.5	0.0	8.3	1.6	2.1	2.6	4.7	15.8	18.6	2.3	28.6	21.4
LnGrp Delay(d),s/veh	192.8	0.0	55.8	56.3	58.2	63.6	28.3	14.0	18.2	46.3	98.2	45.8
LnGrp LOS	F		E	E	E	E	C	B	B	D	F	D
Approach Vol, veh/h		1196			180			2484			2598	
Approach Delay, s/veh		143.2			59.9			17.5			85.0	
Approach LOS		F			E			B			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.3	57.0		14.7	31.3	47.0		27.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	11.0	51.0		14.0	21.0	41.0		20.0
Max Q Clear Time (g_c+I1), s	6.5	37.0		7.3	12.0	43.0		22.0
Green Ext Time (p_c), s	0.8	11.1		0.4	1.2	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.1
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

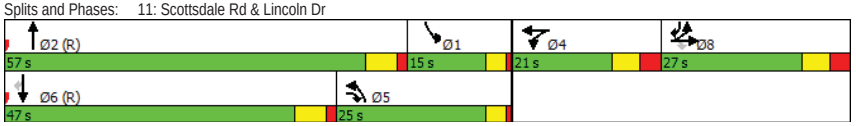
Timing Report, Sorted By Phase
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	57	21	25	47	27
Maximum Split (%)	12.5%	47.5%	17.5%	20.8%	39.2%	22.5%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	4.5	20	5	4.5	20	8
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	12	75	27	2	75	48
End Time (s)	27	12	48	27	2	75
Yield/Force Off (s)	23	6	41	23	116	68
Yield/Force Off 170(s)	23	111	15	23	101	42
Local Start Time (s)	57	0	72	47	0	93
Local Yield (s)	68	51	86	68	41	113
Local Yield 170(s)	68	36	60	68	26	87

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 75 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



HCM 2010 AWSC
12: Mockingbird Ln & McDonald Dr

11/5/2015

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	93	208	4	0	23	255	78	0	14	11	14
Future Vol, veh/h	0	93	208	4	0	23	255	78	0	14	11	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	101	226	4	0	25	277	85	0	15	12	15
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	11.3	14.6	10.3
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	36%	100%	0%	100%	0%	100%	0%
Vol Thru, %	28%	0%	98%	0%	77%	0%	7%
Vol Right, %	36%	0%	2%	0%	23%	0%	93%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	93	212	23	333	56	122
LT Vol	14	93	0	23	0	56	0
Through Vol	11	0	208	0	255	0	9
RT Vol	14	0	4	0	78	0	113
Lane Flow Rate	42	101	230	25	362	61	133
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.079	0.176	0.367	0.043	0.557	0.118	0.215
Departure Headway (Hd)	6.685	6.256	5.736	6.212	5.541	7.003	5.839
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	535	574	627	577	652	512	614
Service Time	4.734	3.987	3.468	3.943	3.271	4.744	3.579
HCM Lane V/C Ratio	0.079	0.176	0.367	0.043	0.555	0.119	0.217
HCM Control Delay	10.3	10.3	11.8	9.2	15	10.7	10.2
HCM Lane LOS	B	B	B	A	B	B	B
HCM 95th-tile Q	0.3	0.6	1.7	0.1	3.4	0.4	0.8

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	56	9	113
Future Vol, veh/h	0	56	9	113
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	61	10	123
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.4
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	214	36	236	218	269	36	2000	242	378	1799	102
Future Volume (veh/h)	88	214	36	236	218	269	36	2000	242	378	1799	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	96	233	39	257	237	292	39	2174	263	411	1955	111
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	311	51	264	353	510	395	2034	633	766	2034	633
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.22	0.40	0.40	0.15	0.27	0.27
Sat Flow, veh/h	1774	3042	502	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	96	134	138	257	237	292	39	2174	263	411	1955	111
Grp Sat Flow(s),veh/h/ln	1774	1770	1774	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	8.8	9.1	11.5	7.8	0.0	2.1	48.0	14.3	13.3	45.5	6.5
Cycle Q Clear(g_c), s	0.0	8.8	9.1	11.5	7.8	0.0	2.1	48.0	14.3	13.3	45.5	6.5
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	181	182	264	353	510	395	2034	633	766	2034	633
V/C Ratio(X)	0.35	0.74	0.76	0.97	0.67	0.57	0.10	1.07	0.42	0.54	0.96	0.18
Avail Cap(c_a), veh/h	273	354	355	264	708	669	395	2034	633	766	2034	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09
Uniform Delay (d), s/veh	47.6	52.3	52.4	51.7	52.1	33.8	37.1	36.0	25.9	45.3	43.0	28.7
Incr Delay (d2), s/veh	0.8	5.8	6.4	48.1	2.2	1.0	0.1	41.3	2.0	0.1	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.6	4.8	12.0	3.9	8.2	1.0	30.2	6.6	6.3	21.7	2.8
LnGrp Delay(d),s/veh	48.4	58.2	58.8	99.7	54.4	34.8	37.2	77.3	27.9	45.4	44.8	28.8
LnGrp LOS	D	E	E	F	D	C	D	F	C	D	D	C
Approach Vol, veh/h		368			786			2476			2477	
Approach Delay, s/veh		55.9			61.9			71.4			44.2	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.7	54.0	16.0	19.3	30.7	54.0	16.3	19.0
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	15.0	48.0	* 12	24.0	15.0	48.0	* 12	24.0
Max Q Clear Time (g_c+I1), s	15.3	50.0	13.5	11.1	4.1	47.5	2.0	9.8
Green Ext Time (p_c), s	0.0	0.0	0.0	1.2	1.2	0.5	0.8	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	58.2
HCM 2010 LOS	E

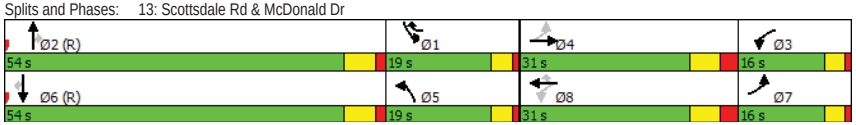
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	19	54	16	31	19	54	16	31
Maximum Split (%)	15.8%	45.0%	13.3%	25.8%	15.8%	45.0%	13.3%	25.8%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	30	14	103	84	30	14	103
End Time (s)	103	84	30	14	103	84	30	14
Yield/Force Off (s)	99	78	26	7	99	78	26	7
Yield/Force Off 170(s)	99	62	26	103	99	62	26	103
Local Start Time (s)	54	0	104	73	54	0	104	73
Local Yield (s)	69	48	116	97	69	48	116	97
Local Yield 170(s)	69	32	116	73	69	32	116	73

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	115
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



Intersection	
Intersection Delay, s/veh	5.7
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	257	277	83
Demand Flow Rate, veh/h	262	283	85
Vehicles Circulating, veh/h	43	43	211
Vehicles Exiting, veh/h	283	253	94
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.7	5.9	4.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	262	283	85
Cap Entry Lane, veh/h	1082	1082	915
Entry HV Adj Factor	0.980	0.980	0.976
Flow Entry, veh/h	257	277	83
Cap Entry, veh/h	1061	1061	893
V/C Ratio	0.242	0.261	0.093
Control Delay, s/veh	5.7	5.9	4.9
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	216	12	29	249	6	14
Future Vol, veh/h	216	12	29	249	6	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	235	13	32	271	7	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	248	0	575	241
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	334	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1318	-	480	798
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1318	-	468	798
Mov Cap-2 Maneuver	-	-	-	-	554	-
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	707	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	705	-	-	1318	-
HCM Lane V/C Ratio	0.031	-	-	0.024	-
HCM Control Delay (s)	10.3	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	349	45	110	338	43	103
Future Vol, veh/h	349	45	110	338	43	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	379	49	120	367	47	112

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	428	0	827	404
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	423	-
Critical Hdwy	-	-	4.12	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.218	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1131	-	325	646
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	630	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1131	-	291	646
Mov Cap-2 Maneuver	-	-	-	-	291	-
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	563	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	475	-	-	1131	-
HCM Lane V/C Ratio	0.334	-	-	0.106	-
HCM Control Delay (s)	16.3	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.5	-	-	0.4	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	13	5	0	2485	1868	17
Future Vol, veh/h	13	5	0	2485	1868	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	5	0	2701	2030	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3110	1015	2030	0	-	0
Stage 1	2030	-	-	-	-	-
Stage 2	1080	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	23	203	121	-	-	-
Stage 1	54	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	203	121	-	-	-
Mov Cap-2 Maneuver	23	-	-	-	-	-
Stage 1	54	-	-	-	-	-
Stage 2	259	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	121	-	203	-	-
HCM Lane V/C Ratio	-	-	0.027	-	-
HCM Control Delay (s)	0	-	23.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	28	0	0	49	37	48
Future Vol, veh/h	28	0	0	49	37	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	0	53	40	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	119	66	92	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	877	998	1503	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	877	998	1503	-	-	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	877	-	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	22	11	37	11	6	31
Future Vol, veh/h	22	11	37	11	6	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	12	40	12	7	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	93	46	0	0	52	0
Stage 1	46	-	-	-	-	-
Stage 2	47	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	907	1023	-	-	1554	-
Stage 1	976	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	902	1023	-	-	1554	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	939	1554	-
HCM Lane V/C Ratio	-	-	0.038	0.004	-
HCM Control Delay (s)	-	-	9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	63	23	25	54	24	30
Future Vol, veh/h	63	23	25	54	24	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	25	27	59	26	33

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	142	57	0	0	86	0
Stage 1	57	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	851	1009	-	-	1510	-
Stage 1	966	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	836	1009	-	-	1510	-
Mov Cap-2 Maneuver	836	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	3.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	876	1510	-
HCM Lane V/C Ratio	-	-	0.107	0.017	-
HCM Control Delay (s)	-	-	9.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	53	10	61	56	33	70
Future Vol, veh/h	53	10	61	56	33	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	11	66	61	36	76

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	245	97	0	0	127	0
Stage 1	97	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	743	959	-	-	1459	-
Stage 1	927	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	724	959	-	-	1459	-
Mov Cap-2 Maneuver	724	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	2.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	753	1459	-
HCM Lane V/C Ratio	-	-	0.091	0.025	-
HCM Control Delay (s)	-	-	10.3	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	61	27	5	375	255	57
Future Vol, veh/h	61	27	5	375	255	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	29	5	408	277	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	413	0	-	0	371	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	162	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1146	-	-	-	630	831
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1146	-	-	-	593	831
Mov Cap-2 Maneuver	-	-	-	-	645	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	816	-

Approach	EB	WB	SB
HCM Control Delay, s	5.8	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1146	-	-	-	672
HCM Lane V/C Ratio	0.058	-	-	-	0.505
HCM Control Delay (s)	8.3	0	-	-	15.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	2.9

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	121	1	28	115	2	36
Future Vol, veh/h	121	1	28	115	2	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	1	30	125	2	39

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	136	93	0	0	155	0
Stage 1	93	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	857	964	-	-	1425	-
Stage 1	931	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	856	964	-	-	1425	-
Mov Cap-2 Maneuver	856	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	857	1425	-
HCM Lane V/C Ratio	-	-	0.155	0.002	-
HCM Control Delay (s)	-	-	10	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	20	25	208	171
Demand Flow Rate, veh/h	20	26	212	174
Vehicles Circulating, veh/h	199	192	0	60
Vehicles Exiting, veh/h	35	20	219	157
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.1	4.3	4.9	4.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	20	26	212	174
Cap Entry Lane, veh/h	926	933	1130	1064
Entry HV Adj Factor	1.000	0.962	0.981	0.980
Flow Entry, veh/h	20	25	208	171
Cap Entry, veh/h	926	897	1108	1043
V/C Ratio	0.022	0.028	0.188	0.164
Control Delay, s/veh	4.1	4.3	4.9	4.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	16	0	191	33	0	198
Future Vol, veh/h	16	0	191	33	0	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	0	208	36	0	215

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	441	226	0	0	243	0
Stage 1	226	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	574	813	-	-	1323	-
Stage 1	812	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	574	813	-	-	1323	-
Mov Cap-2 Maneuver	574	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	821	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	574	1323	-
HCM Lane V/C Ratio	-	-	0.03	-	-
HCM Control Delay (s)	-	-	11.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

APPENDIX J

2028 PEAK HOUR ANALYSIS

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	6	315	0	35	4	0	0	143	13	30
Future Vol, veh/h	0	4	6	315	0	35	4	0	0	143	13	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	7	342	0	38	4	0	0	155	14	33
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	10.9	9.3	10.3
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	90%	3%
Vol Thru, %	0%	30%	0%	2%	10%	91%
Vol Right, %	0%	70%	0%	98%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	143	43	4	321	39	34
LT Vol	143	0	4	0	35	1
Through Vol	0	13	0	6	4	31
RT Vol	0	30	0	315	0	2
Lane Flow Rate	155	47	4	349	42	37
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.259	0.065	0.007	0.443	0.068	0.059
Departure Headway (Hd)	6.009	5.013	5.768	4.575	5.809	5.748
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	595	710	620	785	613	618
Service Time	3.776	2.78	3.504	2.31	3.873	3.829
HCM Lane V/C Ratio	0.261	0.066	0.006	0.445	0.069	0.06
HCM Control Delay	10.9	8.1	8.5	10.9	9.3	9.2
HCM Lane LOS	B	A	A	B	A	A
HCM 95th-tile Q	1	0.2	0	2.3	0.2	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	31	2
Future Vol, veh/h	0	1	31	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	34	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.2
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	164	46	227	104	75	378
Future Vol, veh/h	164	46	227	104	75	378
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	178	50	247	113	82	411

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	877	303	0	0	360	0
Stage 1	303	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	319	737	-	-	1199	-
Stage 1	749	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	297	737	-	-	1199	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	524	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.2	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	409	737	1199	-
HCM Lane V/C Ratio	-	-	0.436	0.068	0.068	-
HCM Control Delay (s)	-	-	20.4	10.2	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2.2	0.2	0.2	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	5	209	2	36	201	5	1	0	47	6	0	5
Future Vol, veh/h	5	209	2	36	201	5	1	0	47	6	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	227	2	39	218	5	1	0	51	7	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	224	0	0	229	0	0	541	541	228	564	539	221
Stage 1	-	-	-	-	-	-	239	239	-	299	299	-
Stage 2	-	-	-	-	-	-	302	302	-	265	240	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1345	-	-	1339	-	-	452	448	811	436	449	819
Stage 1	-	-	-	-	-	-	764	708	-	710	666	-
Stage 2	-	-	-	-	-	-	707	664	-	740	707	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1345	-	-	1339	-	-	438	433	811	398	434	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	438	433	-	398	434	-
Stage 1	-	-	-	-	-	-	761	705	-	707	647	-
Stage 2	-	-	-	-	-	-	682	645	-	691	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.2	9.8	12.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	797	1345	-	-	1339	-	-	519
HCM Lane V/C Ratio	0.065	0.004	-	-	0.029	-	-	0.023
HCM Control Delay (s)	9.8	7.7	-	-	7.8	-	-	12.1
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	159	63	597	183	152	39	1297	418	158	1650	44
Future Volume (veh/h)	69	159	63	597	183	152	39	1297	418	158	1650	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	75	173	68	649	199	165	42	1410	454	172	1793	48
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	155	132	710	486	575	263	2076	973	285	2076	647
Arrive On Green	0.05	0.08	0.08	0.21	0.26	0.26	0.10	0.41	0.41	0.10	0.41	0.41
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	75	173	68	649	199	165	42	1410	454	172	1793	48
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	5.0	10.0	4.9	22.1	10.6	1.2	0.0	27.2	0.0	3.7	38.7	1.7
Cycle Q Clear(g_c), s	5.0	10.0	4.9	22.1	10.6	1.2	0.0	27.2	0.0	3.7	38.7	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	155	132	710	486	575	263	2076	973	285	2076	647
V/C Ratio(X)	0.79	1.11	0.52	0.91	0.41	0.29	0.16	0.68	0.47	0.60	0.86	0.07
Avail Cap(c_a), veh/h	177	155	132	803	486	575	263	2076	973	285	2076	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.1	55.0	52.7	46.6	36.7	14.6	45.7	29.1	12.5	46.1	32.4	12.8
Incr Delay (d2), s/veh	5.3	106.3	1.6	13.0	0.2	0.1	0.1	1.8	1.6	2.5	5.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	9.7	2.2	11.8	5.5	2.8	1.3	13.0	8.5	5.5	19.1	0.8
LnGrp Delay(d),s/veh	61.4	161.3	54.2	59.6	36.9	14.7	45.8	30.9	14.1	48.7	37.5	13.0
LnGrp LOS	E	F	D	E	D	B	D	C	B	D	D	B
Approach Vol, veh/h		316			1013			1906			2013	
Approach Delay, s/veh		114.5			47.8			27.2			37.9	
Approach LOS		F			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	55.0	31.8	17.0	16.2	55.0	10.4	38.3
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 12	49.0	* 28	* 10	* 12	49.0	12.0	* 26
Max Q Clear Time (g_c+I1), s	5.7	29.2	24.1	12.0	2.0	40.7	7.0	12.6
Green Ext Time (p_c), s	0.1	2.3	0.6	0.0	0.1	2.7	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	40.5
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

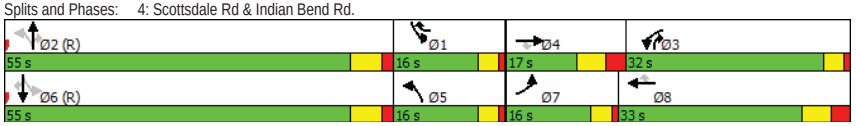
Timing Report, Sorted By Phase
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	16	55	32	17	16	55	16	33
Maximum Split (%)	13.3%	45.8%	26.7%	14.2%	13.3%	45.8%	13.3%	27.5%
Minimum Split (s)	9.4	29.4	8.5	13	8.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	85	30	118	101	85	30	101	117
End Time (s)	101	85	30	118	101	85	117	30
Yield/Force Off (s)	97	79	26	111	97	79	113	23
Yield/Force Off 170(s)	97	63	26	80	97	63	113	112
Local Start Time (s)	55	0	88	71	55	0	71	87
Local Yield (s)	67	49	116	81	67	49	83	113
Local Yield 170(s)	67	33	116	50	67	33	83	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



HCM 2010 TWSC
5: Scottsdale Rd & Joshua Tree Ln

11/5/2015

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	62	5	0	9	0	1724	5	5	2160	28
Future Vol, veh/h	0	0	62	5	0	9	0	1724	5	5	2160	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	150	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	67	5	0	10	0	1874	5	5	2348	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3109	4238	1174	2827	4236	940	2348	0	0	1879	0	0
Stage 1	2359	2359	-	1877	1877	-	-	-	-	-	-	-
Stage 2	750	1879	-	950	2359	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	12	2	159	19	2	227	83	-	-	144	-	-
Stage 1	21	67	-	47	119	-	-	-	-	-	-	-
Stage 2	336	119	-	253	67	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	11	2	159	11	2	227	83	-	-	144	-	-
Mov Cap-2 Maneuver	11	2	-	11	2	-	-	-	-	-	-	-
Stage 1	21	65	-	47	119	-	-	-	-	-	-	-
Stage 2	322	119	-	141	65	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43.3	235.8	0	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	83	-	-	159	28	144	-	-
HCM Lane V/C Ratio	-	-	-	0.424	0.543	0.038	-	-
HCM Control Delay (s)	0	-	-	43.3	235.8	31	-	-
HCM Lane LOS	A	-	-	E	F	D	-	-
HCM 95th %tile Q(veh)	0	-	-	1.9	1.7	0.1	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	34	43	195	1655	2264	119		
Future Volume (veh/h)	34	43	195	1655	2264	119		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	37	47	212	1799	2461	129		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	127	540	1171	4425	2641	822		
Arrive On Green	0.04	0.04	0.30	0.87	0.52	0.52		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	37	47	212	1799	2461	129		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	1.4	0.0	0.9	9.2	58.1	5.5		
Cycle Q Clear(g_c), s	1.4	0.0	0.9	9.2	58.1	5.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	127	540	1171	4425	2641	822		
V/C Ratio(X)	0.29	0.09	0.18	0.41	0.93	0.16		
Avail Cap(c_a), veh/h	806	852	1171	4425	2641	822		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.69	0.69	1.00	1.00		
Uniform Delay (d), s/veh	60.5	28.9	31.1	1.7	28.9	16.2		
Incr Delay (d2), s/veh	1.3	0.1	0.1	0.2	7.5	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	1.7	2.7	4.2	28.9	2.5		
LnGrp Delay(d),s/veh	61.7	28.9	31.1	1.9	36.4	16.6		
LnGrp LOS	E	C	C	A	D	B		
Approach Vol, veh/h	84			2011	2590			
Approach Delay, s/veh	43.4			5.0	35.4			
Approach LOS	D			A	D			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		118.2		10.8	45.2	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		30.2	* 16	* 67		
Max Q Clear Time (g_c+I1), s		11.2		3.4	2.9	60.1		
Green Ext Time (p_c), s		28.7		0.2	10.1	6.4		

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

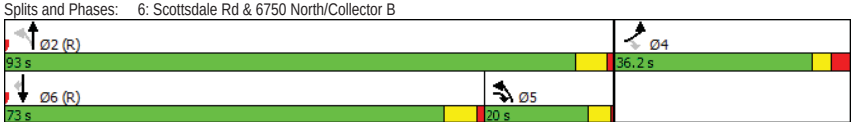
Timing Report, Sorted By Phase
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	36.2	20	73
Maximum Split (%)	72.0%	28.0%	15.5%	56.5%
Minimum Split (s)	36	36.2	8	36.9
Yellow Time (s)	4.9	3	3.5	4.9
All-Red Time (s)	1.1	3	0.5	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	65	28.8	8.8	65
End Time (s)	28.8	65	28.8	8.8
Yield/Force Off (s)	22.8	59	24.8	2.8
Yield/Force Off 170(s)	0.8	40	24.8	110
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	123.2	89	67
Local Yield 170(s)	65	104.2	89	45

Intersection Summary	
Cycle Length	129.2
Control Type	Actuated-Coordinated
Natural Cycle	95
Offset: 65 (50%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



HCM 2010 Signalized Intersection Summary
7: Tatum Blvd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	813	70	300	761	105	50	569	426	321	965	414
Future Volume (veh/h)	175	813	70	300	761	105	50	569	426	321	965	414
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	190	884	76	326	827	114	54	618	463	349	1049	450
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	888	76	247	1086	486	169	1051	470	397	1470	658
Arrive On Green	0.07	0.27	0.27	0.11	0.31	0.31	0.03	0.30	0.30	0.15	0.42	0.42
Sat Flow, veh/h	3442	3299	284	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	190	474	486	326	827	114	54	618	463	349	1049	450
Grp Sat Flow(s),veh/h/ln	1721	1770	1813	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.1	34.8	34.8	14.0	27.5	7.0	2.7	19.3	37.8	17.1	32.0	30.2
Cycle Q Clear(g_c), s	7.1	34.8	34.8	14.0	27.5	7.0	2.7	19.3	37.8	17.1	32.0	30.2
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	241	476	488	247	1086	486	169	1051	470	397	1470	658
V/C Ratio(X)	0.79	1.00	1.00	1.32	0.76	0.23	0.32	0.59	0.98	0.88	0.71	0.68
Avail Cap(c_a), veh/h	318	476	488	247	1086	486	169	1051	470	515	1470	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	47.4	47.4	38.4	40.8	33.7	31.6	38.9	45.4	27.7	31.6	31.0
Incr Delay (d2), s/veh	6.7	40.1	39.6	165.6	4.4	1.0	0.4	2.4	37.8	11.2	3.0	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	22.3	22.8	20.2	14.1	3.2	1.4	9.8	21.5	9.6	16.2	14.2
LnGrp Delay(d),s/veh	66.2	87.5	87.0	204.0	45.2	34.7	31.9	41.3	83.2	38.8	34.6	36.7
LnGrp LOS	E	F	F	F	D	C	C	D	F	D	C	D
Approach Vol, veh/h		1150			1267			1135			1848	
Approach Delay, s/veh		83.8			85.1			58.0			35.9	
Approach LOS		F			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	46.9	23.4	45.6	19.0	42.0	8.0	61.0
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	12.0	37.0	28.0	30.0	14.0	35.0	4.0	54.0
Max Q Clear Time (g_c+I1), s	9.1	29.5	19.1	39.8	16.0	36.8	4.7	34.0
Green Ext Time (p_c), s	0.1	7.1	0.2	0.0	0.0	0.0	0.0	19.2

Intersection Summary	
HCM 2010 Ctrl Delay	62.3
HCM 2010 LOS	E

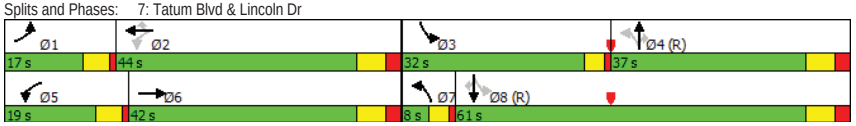
Timing Report, Sorted By Phase
7: Tatum Blvd & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBT	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	17	44	32	37	19	42	8	61
Maximum Split (%)	13.1%	33.8%	24.6%	28.5%	14.6%	32.3%	6.2%	46.9%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	101	15	47	84	103	15	23
End Time (s)	101	15	47	84	103	15	23	84
Yield/Force Off (s)	96	8	43	77	98	8	19	77
Yield/Force Off 170(s)	96	115	43	53	98	115	19	53
Local Start Time (s)	37	54	98	0	37	56	98	106
Local Yield (s)	49	91	126	30	51	91	102	30
Local Yield 170(s)	49	68	126	6	51	68	102	6

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	100
Offset: 47 (36%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
8: Invergordon Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1131	210	59	1063	22	110	4	99	19	12	5
Future Volume (veh/h)	11	1131	210	59	1063	22	110	4	99	19	12	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	12	1229	228	64	1155	24	120	4	108	21	13	5
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	343	1978	364	260	2350	49	324	8	224	146	79	21
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	474	2986	550	363	3546	74	1389	57	1535	441	541	144
Grp Volume(v), veh/h	12	725	732	64	576	603	120	0	112	39	0	0
Grp Sat Flow(s),veh/h/ln	474	1770	1766	363	1770	1850	1389	0	1592	1125	0	0
Q Serve(g_s), s	0.9	15.9	16.3	8.4	11.1	11.1	0.2	0.0	4.4	0.1	0.0	0.0
Cycle Q Clear(g_c), s	12.0	15.9	16.3	24.6	11.1	11.1	4.7	0.0	4.4	4.5	0.0	0.0
Prop In Lane	1.00		0.31	1.00		0.04	1.00		0.96	0.54		0.13
Lane Grp Cap(c), veh/h	343	1173	1170	260	1173	1226	324	0	233	246	0	0
V/C Ratio(X)	0.04	0.62	0.63	0.25	0.49	0.49	0.37	0.00	0.48	0.16	0.00	0.00
Avail Cap(c_a), veh/h	343	1173	1170	260	1173	1226	612	0	562	549	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.32	0.32	0.32	0.78	0.78	0.78	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.7	6.6	6.6	13.7	5.7	5.7	26.8	0.0	26.7	25.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.8	0.8	1.8	1.2	1.1	0.7	0.0	1.5	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	7.9	8.0	1.0	5.7	5.9	2.1	0.0	2.0	0.7	0.0	0.0
LnGrp Delay(d),s/veh	8.8	7.3	7.4	15.5	6.9	6.8	27.5	0.0	28.2	25.7	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C		C	C		
Approach Vol, veh/h		1469			1243			232			39	
Approach Delay, s/veh		7.4			7.3			27.8			25.7	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.1		16.9		51.1		16.9
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		31.0		24.0		31.0		24.0
Max Q Clear Time (g_c+I1), s		26.6		6.7		18.3		6.5
Green Ext Time (p_c), s		4.1		1.1		11.5		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A

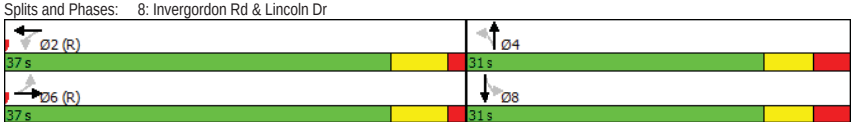
Timing Report, Sorted By Phase
8: Invergordon Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	37	31	37	31
Maximum Split (%)	54.4%	45.6%	54.4%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	28	59	28
End Time (s)	28	59	28	59
Yield/Force Off (s)	22	52	22	52
Yield/Force Off 170(s)	11	35	11	52
Local Start Time (s)	0	37	0	37
Local Yield (s)	31	61	31	61
Local Yield 170(s)	20	44	20	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	65
Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	1172	36	26	982	23	17	59	36	96	118	329
Future Volume (veh/h)	263	1172	36	26	982	23	17	59	36	96	118	329
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	286	1274	39	28	1067	25	18	64	39	104	128	358
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	558	2278	70	119	1251	29	201	175	106	305	473	402
Arrive On Green	0.25	0.65	0.65	0.71	0.71	0.71	0.16	0.16	0.16	0.06	0.25	0.25
Sat Flow, veh/h	1774	3506	107	417	3535	83	906	1085	661	1774	1863	1583
Grp Volume(v), veh/h	286	643	670	28	534	558	18	0	103	104	128	358
Grp Sat Flow(s),veh/h/ln	1774	1770	1844	417	1770	1848	906	0	1746	1774	1863	1583
Q Serve(g_s), s	8.7	26.0	26.0	7.0	28.9	28.9	2.2	0.0	6.8	6.2	7.2	28.3
Cycle Q Clear(g_c), s	8.7	26.0	26.0	33.0	28.9	28.9	2.2	0.0	6.8	6.2	7.2	28.3
Prop In Lane	1.00		0.06	1.00		0.04	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	558	1150	1198	119	626	654	201	0	281	305	473	402
V/C Ratio(X)	0.51	0.56	0.56	0.23	0.85	0.85	0.09	0.00	0.37	0.34	0.27	0.89
Avail Cap(c_a), veh/h	558	1150	1198	119	626	654	268	0	410	427	738	627
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	0.83	0.83	0.83	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	12.5	12.5	27.5	16.5	16.5	46.7	0.0	48.6	40.3	38.8	46.7
Incr Delay (d2), s/veh	0.6	1.5	1.5	3.8	11.7	11.3	0.2	0.0	0.8	0.7	0.3	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	13.2	13.7	0.9	15.7	16.3	0.6	0.0	3.4	3.0	3.7	13.5
LnGrp Delay(d),s/veh	37.1	14.0	14.0	31.3	28.2	27.8	46.9	0.0	49.4	41.0	39.1	56.6
LnGrp LOS	D	B	B	C	C	C	D		D	D	D	E
Approach Vol, veh/h		1599			1120			121			590	
Approach Delay, s/veh		18.1			28.1			49.0			50.1	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	38.5	52.0	12.1	27.4		90.5		39.5
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	16.0	* 46	17.0	30.5		66.0		51.5
Max Q Clear Time (g_c+I1), s	10.7	35.0	8.2	8.8		28.0		30.3
Green Ext Time (p_c), s	3.4	5.6	0.1	2.7		13.7		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

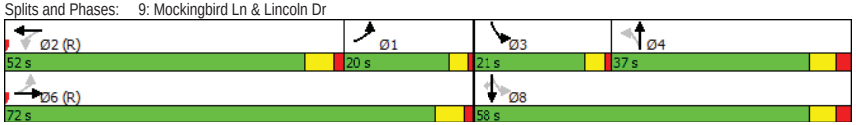
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	20	52	21	37	72	58
Maximum Split (%)	15.4%	40.0%	16.2%	28.5%	55.4%	44.6%
Minimum Split (s)	8	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	50	128	70	91	128	70
End Time (s)	70	50	91	128	70	128
Yield/Force Off (s)	66	44	87	121.5	64	121.5
Yield/Force Off 170(s)	66	30	87	101.5	50	101.5
Local Start Time (s)	52	0	72	93	0	72
Local Yield (s)	68	46	89	123.5	66	123.5
Local Yield 170(s)	68	32	89	103.5	52	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 128 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	1162	5	5	1249	27	5	0	5	50	0	91
Future Volume (veh/h)	157	1162	5	5	1249	27	5	0	5	50	0	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	171	1263	5	5	1358	29	5	0	5	54	0	99
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	2976	12	383	2667	57	78	13	50	179	0	128
Arrive On Green	0.08	1.00	1.00	0.75	0.75	0.75	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1774	3616	14	435	3543	76	457	159	616	1538	0	1583
Grp Volume(v), veh/h	171	618	650	5	678	709	10	0	0	54	0	99
Grp Sat Flow(s),veh/h/ln	1774	1770	1860	435	1770	1849	1231	0	0	1538	0	1583
Q Serve(g_s), s	2.9	0.0	0.0	0.4	20.0	20.0	0.0	0.0	0.0	0.0	0.0	8.0
Cycle Q Clear(g_c), s	2.9	0.0	0.0	0.4	20.0	20.0	3.8	0.0	0.0	3.8	0.0	8.0
Prop In Lane	1.00		0.01	1.00		0.04	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	359	1457	1531	383	1332	1392	141	0	0	179	0	128
V/C Ratio(X)	0.48	0.42	0.42	0.01	0.51	0.51	0.07	0.00	0.00	0.30	0.00	0.78
Avail Cap(c_a), veh/h	506	1457	1531	383	1332	1392	322	0	0	358	0	329
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.68	0.68	0.68	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	0.0	0.0	4.0	6.4	6.5	55.3	0.0	0.0	56.7	0.0	58.6
Incr Delay (d2), s/veh	0.8	0.8	0.7	0.0	1.0	0.9	0.2	0.0	0.0	0.9	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.3	0.3	0.0	10.0	10.4	0.3	0.0	0.0	1.9	0.0	3.8
LnGrp Delay(d),s/veh	6.5	0.8	0.7	4.1	7.4	7.4	55.5	0.0	0.0	57.6	0.0	68.2
LnGrp LOS	A	A	A	A	A	A	E			E		E
Approach Vol, veh/h		1439			1392			10			153	
Approach Delay, s/veh		1.4			7.4			55.5			64.5	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		16.5		113.5		16.5	9.2	104.3
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		27.0		90.5		27.0	16.0	70.5
Max Q Clear Time (g_c+I1), s		5.8		2.0		10.0	4.9	22.0
Green Ext Time (p_c), s		0.6		47.7		0.5	0.3	33.5

Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A

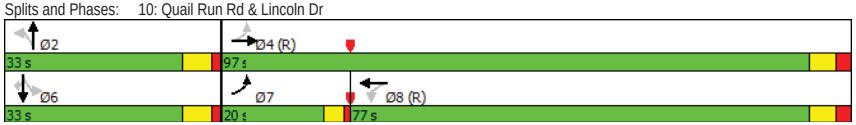
Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	33	97	33	20	77
Maximum Split (%)	25.4%	74.6%	25.4%	15.4%	59.2%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	54	87	54	87	107
End Time (s)	87	54	87	107	54
Yield/Force Off (s)	81	47.5	81	103	47.5
Yield/Force Off 170(s)	61	33.5	61	103	33.5
Local Start Time (s)	77	110	77	110	0
Local Yield (s)	104	70.5	104	126	70.5
Local Yield 170(s)	84	56.5	84	126	56.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 107 (82%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	680	47	420	26	34	46	306	1264	30	31	1793	679
Future Volume (veh/h)	680	47	420	26	34	46	306	1264	30	31	1793	679
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	775	0	457	28	37	50	333	1374	33	34	1949	738
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	0	197	86	86	77	381	3204	77	43	2750	933
Arrive On Green	0.10	0.00	0.10	0.05	0.05	0.05	0.22	1.00	1.00	0.02	0.54	0.54
Sat Flow, veh/h	3548	0	1583	1774	1770	1583	3442	5109	123	1774	5085	1583
Grp Volume(v), veh/h	775	0	457	28	37	50	333	912	495	34	1949	738
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1583	1721	1695	1841	1774	1695	1583
Q Serve(g_s), s	12.0	0.0	12.0	1.8	2.4	3.7	11.2	0.0	0.0	2.3	34.2	43.0
Cycle Q Clear(g_c), s	12.0	0.0	12.0	1.8	2.4	3.7	11.2	0.0	0.0	2.3	34.2	43.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	355	0	197	86	86	77	381	2126	1155	43	2750	933
V/C Ratio(X)	2.18	0.00	2.32	0.32	0.43	0.65	0.87	0.43	0.43	0.79	0.71	0.79
Avail Cap(c_a), veh/h	355	0	197	281	280	251	430	2126	1155	148	2750	933
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.00	0.90	1.00	1.00	1.00	0.78	0.78	0.78	0.72	0.72	0.72
Uniform Delay (d), s/veh	54.0	0.0	52.5	55.2	55.5	56.1	45.9	0.0	0.0	58.2	20.5	19.0
Incr Delay (d2), s/veh	541.2	0.0	609.5	0.8	1.3	3.4	12.3	0.5	0.9	8.3	1.1	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.5	0.0	39.8	0.9	1.2	1.7	5.9	0.1	0.3	1.2	16.2	22.2
LnGrp Delay(d),s/veh	595.2	0.0	662.1	56.0	56.7	59.5	58.3	0.5	0.9	66.5	21.6	23.9
LnGrp LOS	F		F	E	E	E	E	A	A	E	C	C
Approach Vol, veh/h		1232			115			1740			2721	
Approach Delay, s/veh		620.0			57.8			11.7			22.8	
Approach LOS		F			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	81.3		12.8	17.3	70.9		19.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	10.0	55.0		19.0	15.0	50.0		12.0
Max Q Clear Time (g_c+I1), s	4.3	2.0		5.7	13.2	45.0		14.0
Green Ext Time (p_c), s	0.0	7.6		0.2	0.1	3.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	146.9
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

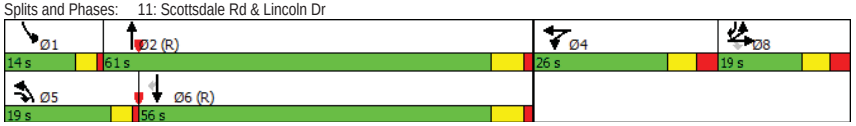
Timing Report, Sorted By Phase
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	14	61	26	19	56	19
Maximum Split (%)	11.7%	50.8%	21.7%	15.8%	46.7%	15.8%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	4	4	4	4	4	4
Vehicle Extension (s)	1	0.2	2	1	0.2	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	71	85	26	71	90	52
End Time (s)	85	26	52	90	26	71
Yield/Force Off (s)	81	20	45	86	20	64
Yield/Force Off 170(s)	81	5	19	86	5	38
Local Start Time (s)	101	115	56	101	0	82
Local Yield (s)	111	50	75	116	50	94
Local Yield 170(s)	111	35	49	116	35	68

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 90 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



HCM 2010 AWSC
12: Mockingbird Ln & McDonald Dr

11/5/2015

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	56	235	10	0	9	292	42	0	5	5	5
Future Vol, veh/h	0	56	235	10	0	9	292	42	0	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	61	255	11	0	10	317	46	0	5	5	5
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	11.4	14.2	9.8
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	33%	100%	0%	100%	0%	100%	0%
Vol Thru, %	33%	0%	96%	0%	87%	0%	7%
Vol Right, %	33%	0%	4%	0%	13%	0%	93%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	56	245	9	334	82	74
LT Vol	5	56	0	9	0	82	0
Through Vol	5	0	235	0	292	0	5
RT Vol	5	0	10	0	42	0	69
Lane Flow Rate	16	61	266	10	363	89	80
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.03	0.101	0.401	0.016	0.538	0.17	0.128
Departure Headway (Hd)	6.599	6.066	5.532	6.032	5.438	6.879	5.712
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	545	594	655	597	668	525	631
Service Time	4.606	3.766	3.232	3.732	3.138	4.58	3.413
HCM Lane V/C Ratio	0.029	0.103	0.406	0.017	0.543	0.17	0.127
HCM Control Delay	9.8	9.4	11.9	8.8	14.3	11	9.2
HCM Lane LOS	A	A	B	A	B	B	A
HCM 95th-tile Q	0.1	0.3	1.9	0	3.2	0.6	0.4

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	82	5	69
Future Vol, veh/h	0	82	5	69
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	89	5	75
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.1
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	246	36	308	355	333	48	1179	146	213	1877	74
Future Volume (veh/h)	128	246	36	308	355	333	48	1179	146	213	1877	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	139	267	39	335	386	362	52	1282	159	232	2040	80
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	347	50	281	506	590	408	1907	594	791	1907	594
Arrive On Green	0.08	0.11	0.11	0.11	0.14	0.14	0.23	0.38	0.38	0.31	0.50	0.50
Sat Flow, veh/h	1774	3105	448	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	139	151	155	335	386	362	52	1282	159	232	2040	80
Grp Sat Flow(s),veh/h/ln	1774	1770	1784	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	4.7	9.9	10.2	13.0	12.6	0.0	2.8	25.3	8.4	6.2	45.0	3.3
Cycle Q Clear(g_c), s	4.7	9.9	10.2	13.0	12.6	0.0	2.8	25.3	8.4	6.2	45.0	3.3
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	198	199	281	506	590	408	1907	594	791	1907	594
V/C Ratio(X)	0.69	0.76	0.78	1.19	0.76	0.61	0.13	0.67	0.27	0.29	1.07	0.13
Avail Cap(c_a), veh/h	257	339	342	281	678	667	408	1907	594	791	1907	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.43	0.43	0.43
Uniform Delay (d), s/veh	52.1	51.7	51.8	51.3	49.5	30.6	36.7	31.3	26.1	34.2	30.1	19.6
Incr Delay (d2), s/veh	5.3	6.0	6.4	115.7	3.6	1.4	0.1	1.9	1.1	0.1	36.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	5.2	5.4	18.3	6.4	9.9	1.4	12.1	3.8	2.9	27.4	1.5
LnGrp Delay(d),s/veh	57.5	57.7	58.3	167.0	53.1	32.0	36.8	33.2	27.2	34.3	66.8	19.8
LnGrp LOS	E	E	E	F	D	C	D	C	C	C	F	B
Approach Vol, veh/h		445			1083			1493			2352	
Approach Delay, s/veh		57.8			81.3			32.7			62.0	
Approach LOS		E			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.6	51.0	17.0	20.4	31.6	51.0	13.3	24.1
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	18.0	45.0	* 13	23.0	18.0	45.0	* 13	23.0
Max Q Clear Time (g_c+I1), s	19.2	27.3	15.0	12.2	4.8	47.0	6.7	14.6
Green Ext Time (p_c), s	0.7	9.4	0.0	1.3	0.8	0.0	0.9	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	57.4
HCM 2010 LOS	E

Notes

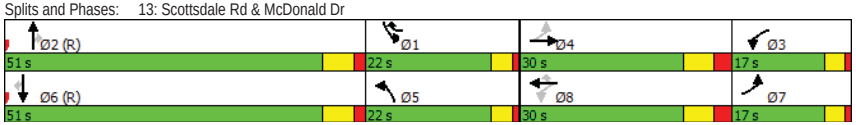
User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	22	51	17	30	22	51	17	30
Maximum Split (%)	18.3%	42.5%	14.2%	25.0%	18.3%	42.5%	14.2%	25.0%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	81	30	13	103	81	30	13	103
End Time (s)	103	81	30	13	103	81	30	13
Yield/Force Off (s)	99	75	26	6	99	75	26	6
Yield/Force Off 170(s)	99	59	26	102	99	59	26	102
Local Start Time (s)	51	0	103	73	51	0	103	73
Local Yield (s)	69	45	116	96	69	45	116	96
Local Yield 170(s)	69	29	116	72	69	29	116	72

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	105

Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



Intersection	
Intersection Delay, s/veh	5.0
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	184	229	61
Demand Flow Rate, veh/h	187	233	63
Vehicles Circulating, veh/h	22	25	171
Vehicles Exiting, veh/h	236	208	38
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.8	5.3	4.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	187	233	63
Cap Entry Lane, veh/h	1105	1102	952
Entry HV Adj Factor	0.982	0.982	0.968
Flow Entry, veh/h	184	229	61
Cap Entry, veh/h	1086	1082	922
V/C Ratio	0.169	0.211	0.066
Control Delay, s/veh	4.8	5.3	4.5
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	186	3	6	197	13	29
Future Vol, veh/h	186	3	6	197	13	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	202	3	7	214	14	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	205	0	431	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	227	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1366	-	581	837
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	811	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1366	-	578	837
Mov Cap-2 Maneuver	-	-	-	-	578	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	735	-	-	1366	-
HCM Lane V/C Ratio	0.062	-	-	0.005	-
HCM Control Delay (s)	10.2	-	-	7.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	242	17	40	219	23	54
Future Vol, veh/h	242	17	40	219	23	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	263	18	43	238	25	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	282	0	478	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	206	-
Critical Hdwy	-	-	4.12	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.218	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1280	-	531	766
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1280	-	513	766
Mov Cap-2 Maneuver	-	-	-	-	589	-
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	782	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	703	-	-	1280	-
HCM Lane V/C Ratio	0.119	-	-	0.034	-
HCM Control Delay (s)	10.8	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	3	1	0	1751	1882	6
Future Vol, veh/h	3	1	0	1751	1882	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1	0	1903	2046	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2807	1023	2046	0	-	0
Stage 1	2046	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	34	200	118	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	34	200	118	-	-	-
Mov Cap-2 Maneuver	34	-	-	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	383	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	118	-	200	-	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	0	-	23.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	44	0	0	13	21	14
Future Vol, veh/h	44	0	0	13	21	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	0	0	14	23	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	44	30	38	0	-	0
Stage 1	30	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	967	1044	1572	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	967	1044	1572	-	-	-
Mov Cap-2 Maneuver	967	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1572	-	967	-	-
HCM Lane V/C Ratio	-	-	0.049	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	10	5	7	22	11	10
Future Vol, veh/h	10	5	7	22	11	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	5	8	24	12	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	55	20	0	0	32	0
Stage 1	20	-	-	-	-	-
Stage 2	35	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	953	1058	-	-	1580	-
Stage 1	1003	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	945	1058	-	-	1580	-
Mov Cap-2 Maneuver	945	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	980	1580	-
HCM Lane V/C Ratio	-	-	0.017	0.008	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	15	5	25	19	8	13
Future Vol, veh/h	15	5	25	19	8	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	5	27	21	9	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	70	38	0	0	48	0
Stage 1	38	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	934	1034	-	-	1559	-
Stage 1	984	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	928	1034	-	-	1559	-
Mov Cap-2 Maneuver	928	-	-	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	985	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	952	1559	-
HCM Lane V/C Ratio	-	-	0.023	0.006	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	15	9	33	18	9	20
Future Vol, veh/h	15	9	33	18	9	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	10	36	20	10	22

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	87	46	0	0	55	0
Stage 1	46	-	-	-	-	-
Stage 2	41	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	914	1023	-	-	1550	-
Stage 1	976	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	908	1023	-	-	1550	-
Mov Cap-2 Maneuver	908	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	948	1550	-
HCM Lane V/C Ratio	-	-	0.028	0.006	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	19	8	12	160	49	13
Future Vol, veh/h	19	8	12	160	49	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	9	13	174	53	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	150	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1387	-	-	-	842	956
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1387	-	-	-	829	956
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	SB
HCM Control Delay, s	5.4	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1387	-	-	-	833
HCM Lane V/C Ratio	0.015	-	-	-	0.081
HCM Control Delay (s)	7.6	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	31	4	67	49	1	26
Future Vol, veh/h	31	4	67	49	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	4	73	53	1	28

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	129	99	0	0	126	0
Stage 1	99	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	865	957	-	-	1460	-
Stage 1	925	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	864	957	-	-	1460	-
Mov Cap-2 Maneuver	864	-	-	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	992	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	874	1460	-
HCM Lane V/C Ratio	-	-	0.044	0.001	-
HCM Control Delay (s)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

HCM 2010 Roundabout
31: Quail Run Rd & South Residential Access

11/5/2015

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	33	22	192	62
Demand Flow Rate, veh/h	34	22	196	63
Vehicles Circulating, veh/h	85	140	0	33
Vehicles Exiting, veh/h	11	56	119	129
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.9	3.9	4.8	3.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	34	22	196	63
Cap Entry Lane, veh/h	1038	982	1130	1093
Entry HV Adj Factor	0.971	1.000	0.982	0.980
Flow Entry, veh/h	33	22	192	62
Cap Entry, veh/h	1007	982	1110	1072
V/C Ratio	0.033	0.022	0.173	0.058
Control Delay, s/veh	3.9	3.9	4.8	3.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

HCM 2010 TWSC
32: Quail Run Rd & Townhome Access

11/5/2015

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	34	0	177	7	0	107
Future Vol, veh/h	34	0	177	7	0	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	0	192	8	0	116

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	312	196	0	0	200	0
Stage 1	196	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	681	845	-	-	1372	-
Stage 1	837	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	681	845	-	-	1372	-
Mov Cap-2 Maneuver	681	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	681	1372	-
HCM Lane V/C Ratio	-	-	0.054	-	-
HCM Control Delay (s)	-	-	10.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	33	227	0	19	17	4	0	304	41	48
Future Vol, veh/h	0	4	33	227	0	19	17	4	0	304	41	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	36	247	0	21	18	4	0	330	45	52
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	11.6	9.8	14
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	47%	4%
Vol Thru, %	0%	46%	0%	13%	43%	82%
Vol Right, %	0%	54%	0%	87%	10%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	304	89	4	260	40	28
LT Vol	304	0	4	0	19	1
Through Vol	0	41	0	33	17	23
RT Vol	0	48	0	227	4	4
Lane Flow Rate	330	97	4	283	43	30
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.543	0.135	0.008	0.41	0.076	0.051
Departure Headway (Hd)	6.019	5.135	6.347	5.225	6.313	6.048
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	605	702	560	684	571	596
Service Time	3.719	2.835	4.125	3.003	4.315	4.05
HCM Lane V/C Ratio	0.545	0.138	0.007	0.414	0.075	0.05
HCM Control Delay	15.6	8.6	9.2	11.6	9.8	9.4
HCM Lane LOS	C	A	A	B	A	A
HCM 95th-tile Q	3.3	0.5	0	2	0.2	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	23	4
Future Vol, veh/h	0	1	23	4
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	25	4
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.4
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	151	83	335	178	73	202
Future Vol, veh/h	151	83	335	178	73	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	164	90	364	193	79	220

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	839	461	0	0	558	0
Stage 1	461	-	-	-	-	-
Stage 2	378	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	336	600	-	-	1013	-
Stage 1	635	-	-	-	-	-
Stage 2	693	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	310	600	-	-	1013	-
Mov Cap-2 Maneuver	432	-	-	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	639	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	2.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	432	600	1013	-
HCM Lane V/C Ratio	-	-	0.38	0.15	0.078	-
HCM Control Delay (s)	-	-	18.3	12.1	8.9	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.7	0.5	0.3	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	5	224	5	78	272	15	5	0	155	5	0	5
Future Vol, veh/h	5	224	5	78	272	15	5	0	155	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	243	5	85	296	16	5	0	168	5	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	312	0	0	249	0	0	733	739	246	814	733	304
Stage 1	-	-	-	-	-	-	257	257	-	473	473	-
Stage 2	-	-	-	-	-	-	476	482	-	341	260	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1248	-	-	1317	-	-	336	345	793	297	348	736
Stage 1	-	-	-	-	-	-	748	695	-	572	558	-
Stage 2	-	-	-	-	-	-	570	553	-	674	693	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1248	-	-	1317	-	-	316	321	793	222	324	736
Mov Cap-2 Maneuver	-	-	-	-	-	-	316	321	-	222	324	-
Stage 1	-	-	-	-	-	-	745	692	-	570	522	-
Stage 2	-	-	-	-	-	-	529	517	-	529	690	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	11.2	15.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	757	1248	-	-	1317	-	-	341
HCM Lane V/C Ratio	0.23	0.004	-	-	0.064	-	-	0.032
HCM Control Delay (s)	11.2	7.9	-	-	7.9	-	-	15.9
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0	-	-	0.2	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	243	70	489	285	136	114	1916	527	187	1665	78
Future Volume (veh/h)	157	243	70	489	285	136	114	1916	527	187	1665	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	171	264	76	532	310	148	124	2083	573	203	1810	85
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	171	145	591	330	457	283	2161	945	261	2161	673
Arrive On Green	0.11	0.09	0.09	0.17	0.18	0.18	0.11	0.43	0.43	0.11	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	171	264	76	532	310	148	124	2083	573	203	1810	85
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	11.4	11.0	5.5	18.2	19.7	1.8	1.8	47.9	6.8	9.0	38.1	2.6
Cycle Q Clear(g_c), s	11.4	11.0	5.5	18.2	19.7	1.8	1.8	47.9	6.8	9.0	38.1	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	171	145	591	330	457	283	2161	945	261	2161	673
V/C Ratio(X)	0.87	1.55	0.52	0.90	0.94	0.32	0.44	0.96	0.61	0.78	0.84	0.13
Avail Cap(c_a), veh/h	207	171	145	660	330	457	292	2161	945	270	2161	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	54.5	52.0	48.7	48.7	16.3	46.2	33.6	15.3	49.9	30.8	9.2
Incr Delay (d2), s/veh	27.7	272.6	1.7	13.5	33.4	0.2	0.4	12.5	2.9	11.8	4.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	18.6	2.5	9.8	13.2	2.6	3.8	24.9	3.6	7.3	18.6	1.2
LnGrp Delay(d),s/veh	80.2	327.1	53.7	62.2	82.1	16.5	46.6	46.1	18.2	61.7	34.9	9.6
LnGrp LOS	F	F	D	E	F	B	D	D	B	E	C	A
Approach Vol, veh/h		511			990			2780			2098	
Approach Delay, s/veh		203.8			61.6			40.4			36.4	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	57.0	27.6	18.0	17.4	57.0	17.3	28.3
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 14	51.0	* 23	* 11	* 14	51.0	14.0	* 20
Max Q Clear Time (g_c+I1), s	11.0	49.9	20.2	13.0	3.8	40.1	13.4	21.7
Green Ext Time (p_c), s	0.1	0.7	0.4	0.0	0.1	3.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	55.5
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Timing Report, Sorted By Phase
4: Scottsdale Rd & Indian Bend Rd.

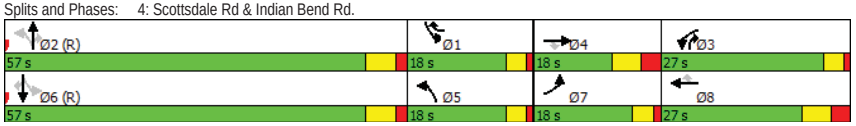
11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	18	57	27	18	18	57	18	27
Maximum Split (%)	15.0%	47.5%	22.5%	15.0%	15.0%	47.5%	15.0%	22.5%
Minimum Split (s)	9.4	29.4	8.5	13	9.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	87	30	3	105	87	30	105	3
End Time (s)	105	87	30	3	105	87	3	30
Yield/Force Off (s)	101	81	26	116	101	81	119	23
Yield/Force Off 170(s)	101	65	26	85	101	65	119	112
Local Start Time (s)	57	0	93	75	57	0	75	93
Local Yield (s)	71	51	116	86	71	51	89	113
Local Yield 170(s)	71	35	116	55	71	35	89	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	100

Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



HCM 2010 TWSC
5: Scottsdale Rd & Joshua Tree Ln

11/5/2015

Intersection	
Int Delay, s/veh	16.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	115	5	0	11	0	2512	6	10	2221	79
Future Vol, veh/h	0	0	115	5	0	11	0	2512	6	10	2221	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	150	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	125	5	0	12	0	2730	7	11	2414	86

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3528	5173	1207	3721	5170	1368	2414	0	0	2737	0	0
Stage 1	2436	2436	-	2734	2734	-	-	-	-	-	-	-
Stage 2	1092	2737	-	987	2436	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	7	0	151	~ 5	0	117	77	-	-	52	-	-
Stage 1	18	61	-	11	43	-	-	-	-	-	-	-
Stage 2	206	43	-	240	61	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	0	151	~ 1	0	117	77	-	-	52	-	-
Mov Cap-2 Maneuver	5	0	-	~ 1	0	-	-	-	-	-	-	-
Stage 1	18	48	-	11	43	-	-	-	-	-	-	-
Stage 2	185	43	-	33	48	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	92	$ 4356.9	0	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	77	-	-	151	3	52	-	-
HCM Lane V/C Ratio	-	-	-	0.828	5.797	0.209	-	-
HCM Control Delay (s)	0	-	-	92	$ 4356.9	91.7	-	-
HCM Lane LOS	A	-	-	F	F	F	-	-
HCM 95th %tile Q(veh)	0	-	-	5.4	3.6	0.7	-	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	140	245	316	2374	2328	80		
Future Volume (veh/h)	140	245	316	2374	2328	80		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	152	266	343	2580	2530	87		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	239	540	1052	4259	2641	822		
Arrive On Green	0.07	0.07	0.27	0.84	0.52	0.52		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	152	266	343	2580	2530	87		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	5.5	0.0	5.5	21.6	61.4	3.6		
Cycle Q Clear(g_c), s	5.5	0.0	5.5	21.6	61.4	3.6		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	239	540	1052	4259	2641	822		
V/C Ratio(X)	0.64	0.49	0.33	0.61	0.96	0.11		
Avail Cap(c_a), veh/h	806	801	1052	4259	2641	822		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.17	0.17	1.00	1.00		
Uniform Delay (d), s/veh	58.4	33.7	35.3	3.5	29.7	15.8		
Incr Delay (d2), s/veh	2.8	0.7	0.0	0.1	10.1	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.7	9.6	4.7	9.8	31.1	1.6		
LnGrp Delay(d),s/veh	61.2	34.4	35.3	3.6	39.8	16.0		
LnGrp LOS	E	C	D	A	D	B		
Approach Vol, veh/h	418			2923	2617			
Approach Delay, s/veh	44.1			7.3	39.0			
Approach LOS	D			A	D			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		114.0		15.0	41.0	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		30.2	* 16	* 67		
Max Q Clear Time (g_c+I1), s		23.6		7.5	7.5	63.4		
Green Ext Time (p_c), s		48.8		1.4	6.7	3.5		

Intersection Summary	
HCM 2010 Ctrl Delay	23.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

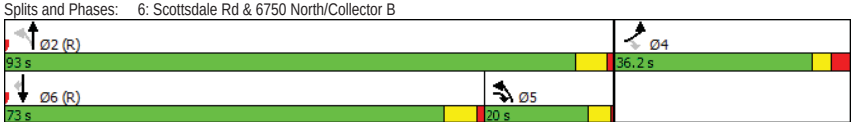
Timing Report, Sorted By Phase
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	36.2	20	73
Maximum Split (%)	72.0%	28.0%	15.5%	56.5%
Minimum Split (s)	36	36.2	8	36.9
Yellow Time (s)	4.9	3	3.5	4.9
All-Red Time (s)	1.1	3	0.5	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	65	28.8	8.8	65
End Time (s)	28.8	65	28.8	8.8
Yield/Force Off (s)	22.8	59	24.8	2.8
Yield/Force Off 170(s)	0.8	40	24.8	110
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	123.2	89	67
Local Yield 170(s)	65	104.2	89	45

Intersection Summary	
Cycle Length	129.2
Control Type	Actuated-Coordinated
Natural Cycle	105
Offset: 65 (50%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



HCM 2010 Signalized Intersection Summary
7: Tatum Blvd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	820	41	419	922	304	92	1085	376	237	657	178
Future Volume (veh/h)	370	820	41	419	922	304	92	1085	376	237	657	178
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	402	891	45	455	1002	330	100	1179	409	258	714	193
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	470	844	43	219	829	371	311	1296	580	282	1579	706
Arrive On Green	0.10	0.25	0.25	0.09	0.23	0.23	0.04	0.37	0.37	0.12	0.45	0.45
Sat Flow, veh/h	3442	3429	173	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	402	460	476	455	1002	330	100	1179	409	258	714	193
Grp Sat Flow(s),veh/h/ln	1721	1770	1832	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.4	32.0	32.0	12.0	30.4	26.2	4.6	41.2	28.7	13.4	18.2	10.0
Cycle Q Clear(g_c), s	11.4	32.0	32.0	12.0	30.4	26.2	4.6	41.2	28.7	13.4	18.2	10.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	470	436	451	219	829	371	311	1296	580	282	1579	706
V/C Ratio(X)	0.86	1.06	1.06	2.08	1.21	0.89	0.32	0.91	0.71	0.92	0.45	0.27
Avail Cap(c_a), veh/h	534	436	451	219	829	371	311	1296	580	290	1579	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.55	0.55	0.55	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	49.0	49.0	37.8	49.8	48.2	24.7	39.2	35.2	36.4	25.0	22.7
Incr Delay (d2), s/veh	10.6	58.6	57.9	492.8	100.5	16.2	0.2	11.0	7.1	30.8	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	22.7	23.4	32.0	26.4	13.1	2.3	22.1	13.7	11.5	9.0	4.5
LnGrp Delay(d),s/veh	46.4	107.6	106.9	530.6	150.2	64.3	24.9	50.2	42.3	67.2	25.9	23.7
LnGrp LOS	D	F	F	F	F	E	C	D	D	E	C	C
Approach Vol, veh/h		1338			1787			1688			1165	
Approach Delay, s/veh		88.9			231.2			46.8			34.7	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.6	37.4	19.4	54.6	17.0	39.0	9.0	65.0
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	16.0	28.0	16.0	47.0	12.0	32.0	5.0	58.0
Max Q Clear Time (g_c+I1), s	13.4	32.4	15.4	43.2	14.0	34.0	6.6	20.2
Green Ext Time (p_c), s	0.2	0.0	0.0	3.8	0.0	0.0	0.0	35.2

Intersection Summary	
HCM 2010 Ctrl Delay	109.0
HCM 2010 LOS	F

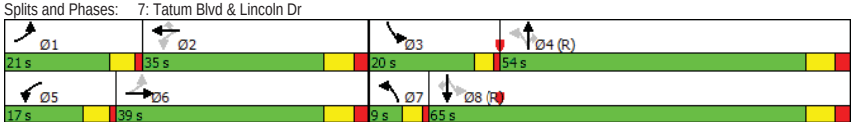
Timing Report, Sorted By Phase
7: Tatum Blvd & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBTL	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	21	35	20	54	17	39	9	65
Maximum Split (%)	16.2%	26.9%	15.4%	41.5%	13.1%	30.0%	6.9%	50.0%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	64	85	120	10	64	81	120	129
End Time (s)	85	120	10	64	81	120	129	64
Yield/Force Off (s)	80	113	6	57	76	113	125	57
Yield/Force Off 170(s)	80	90	6	33	76	90	125	33
Local Start Time (s)	54	75	110	0	54	71	110	119
Local Yield (s)	70	103	126	47	66	103	115	47
Local Yield 170(s)	70	80	126	23	66	80	115	23

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	120
Offset: 10 (8%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
8: Invergordon Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1307	155	65	1286	27	261	22	90	27	18	11
Future Volume (veh/h)	5	1307	155	65	1286	27	261	22	90	27	18	11
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	1421	168	71	1398	29	284	24	98	29	20	12
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	1827	214	178	2029	42	448	76	310	201	131	62
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	374	3192	374	320	3546	73	1372	321	1311	519	556	263
Grp Volume(v), veh/h	5	783	806	71	697	730	284	0	122	61	0	0
Grp Sat Flow(s),veh/h/ln	374	1770	1797	320	1770	1850	1372	0	1631	1338	0	0
Q Serve(g_s), s	0.7	23.1	23.7	15.1	18.9	19.0	8.2	0.0	4.2	0.1	0.0	0.0
Cycle Q Clear(g_c), s	19.6	23.1	23.7	38.7	18.9	19.0	12.5	0.0	4.2	4.3	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.04	1.00		0.80	0.48		0.20
Lane Grp Cap(c), veh/h	216	1013	1028	178	1013	1059	448	0	386	395	0	0
V/C Ratio(X)	0.02	0.77	0.78	0.40	0.69	0.69	0.63	0.00	0.32	0.15	0.00	0.00
Avail Cap(c_a), veh/h	216	1013	1028	178	1013	1059	668	0	648	567	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.27	0.27	0.27	0.66	0.66	0.66	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.2	11.2	11.3	26.3	10.3	10.3	24.3	0.0	21.4	20.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.6	1.7	4.4	2.5	2.4	1.5	0.0	0.5	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	11.5	11.9	1.5	9.8	10.2	5.2	0.0	1.9	0.9	0.0	0.0
LnGrp Delay(d),s/veh	17.2	12.8	13.0	30.7	12.8	12.7	25.8	0.0	21.9	20.7	0.0	0.0
LnGrp LOS	B	B	B	C	B	B	C		C	C		
Approach Vol, veh/h		1594			1498			406			61	
Approach Delay, s/veh		12.9			13.6			24.6			20.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		44.9		23.1		44.9		23.1
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		28.0		27.0		28.0		24.0
Max Q Clear Time (g_c+I1), s		40.7		14.5		25.7		6.3
Green Ext Time (p_c), s		0.0		1.6		2.3		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

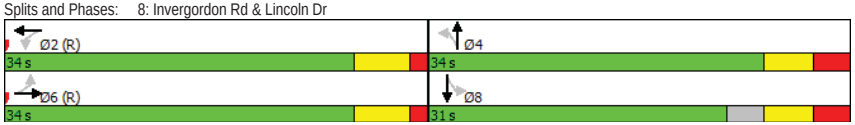
Timing Report, Sorted By Phase
8: Invergordon Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	34	34	34	31
Maximum Split (%)	50.0%	50.0%	50.0%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	25	59	25
End Time (s)	25	59	25	59
Yield/Force Off (s)	19	52	19	52
Yield/Force Off 170(s)	8	35	8	52
Local Start Time (s)	0	34	0	34
Local Yield (s)	28	61	28	61
Local Yield 170(s)	17	44	17	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	335	1187	18	39	1160	94	13	117	48	59	98	222
Future Volume (veh/h)	335	1187	18	39	1160	94	13	117	48	59	98	222
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	364	1290	20	42	1261	102	14	127	52	64	107	241
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	2542	39	151	1388	621	189	163	67	148	356	303
Arrive On Green	0.27	0.71	0.71	0.52	0.52	0.52	0.13	0.13	0.13	0.03	0.19	0.19
Sat Flow, veh/h	1774	3567	55	418	3539	1583	1029	1257	515	1774	1863	1583
Grp Volume(v), veh/h	364	640	670	42	1261	102	14	0	179	64	107	241
Grp Sat Flow(s),veh/h/ln	1774	1770	1853	418	1770	1583	1029	0	1772	1774	1863	1583
Q Serve(g_s), s	17.3	21.1	21.2	10.5	42.1	3.6	1.6	0.0	12.7	4.0	6.4	18.9
Cycle Q Clear(g_c), s	17.3	21.1	21.2	31.6	42.1	3.6	1.6	0.0	12.7	4.0	6.4	18.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	563	1261	1321	151	1388	621	189	0	230	148	356	303
V/C Ratio(X)	0.65	0.51	0.51	0.28	0.91	0.16	0.07	0.00	0.78	0.43	0.30	0.80
Avail Cap(c_a), veh/h	563	1261	1321	151	1388	621	273	0	375	148	509	432
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.36	0.36	0.36	0.88	0.88	0.88	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	8.4	8.4	34.9	29.0	13.5	49.9	0.0	54.8	46.7	45.1	50.2
Incr Delay (d2), s/veh	0.9	0.5	0.5	4.0	9.3	0.5	0.2	0.0	5.7	2.0	0.5	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	10.5	11.0	1.4	22.2	1.6	0.5	0.0	6.6	2.0	3.3	8.8
LnGrp Delay(d),s/veh	39.4	8.9	8.9	38.9	38.2	14.0	50.1	0.0	60.4	48.7	45.6	56.8
LnGrp LOS	D	A	A	D	D	B	D		E	D	D	E
Approach Vol, veh/h		1674			1405			193			412	
Approach Delay, s/veh		15.6			36.5			59.7			52.6	
Approach LOS		B			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	41.7	57.0	8.0	23.3		98.7		31.3
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	27.0	* 51	4.0	27.5		82.0		35.5
Max Q Clear Time (g_c+I1), s	19.3	44.1	6.0	14.7		23.2		20.9
Green Ext Time (p_c), s	5.4	4.8	0.0	2.1		15.7		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

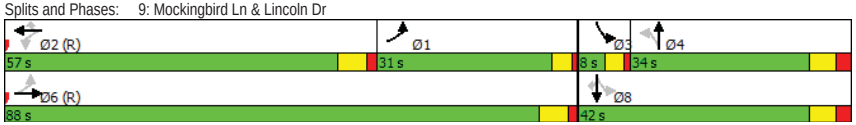
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	31	57	8	34	88	42
Maximum Split (%)	23.8%	43.8%	6.2%	26.2%	67.7%	32.3%
Minimum Split (s)	9	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	73	16	104	112	16	104
End Time (s)	104	73	112	16	104	16
Yield/Force Off (s)	100	67	108	9.5	98	9.5
Yield/Force Off 170(s)	100	53	108	119.5	84	119.5
Local Start Time (s)	57	0	88	96	0	88
Local Yield (s)	84	51	92	123.5	82	123.5
Local Yield 170(s)	84	37	92	103.5	68	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	100
Offset: 16 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	633	5	5	1029	50	5	0	5	31	0	183
Future Volume (veh/h)	174	633	5	5	1029	50	5	0	5	31	0	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	189	688	5	5	1118	54	5	0	5	34	0	199
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	398	2738	20	563	2402	1075	127	13	99	263	0	227
Arrive On Green	0.10	1.00	1.00	0.68	0.68	0.68	0.14	0.00	0.14	0.14	0.00	0.14
Sat Flow, veh/h	1774	3602	26	748	3539	1583	597	92	688	1448	0	1583
Grp Volume(v), veh/h	189	338	355	5	1118	54	10	0	0	34	0	199
Grp Sat Flow(s),veh/h/ln	1774	1770	1858	748	1770	1583	1377	0	0	1448	0	1583
Q Serve(g_s), s	4.3	0.0	0.0	0.3	19.3	1.5	0.0	0.0	0.0	0.0	0.0	16.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	0.3	19.3	1.5	2.2	0.0	0.0	2.2	0.0	16.0
Prop In Lane	1.00		0.01	1.00		1.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	398	1345	1413	563	2402	1075	239	0	0	263	0	227
V/C Ratio(X)	0.47	0.25	0.25	0.01	0.47	0.05	0.04	0.00	0.00	0.13	0.00	0.87
Avail Cap(c_a), veh/h	527	1345	1413	563	2402	1075	357	0	0	386	0	365
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.76	0.76	0.76	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	0.0	0.0	6.8	9.8	6.9	47.9	0.0	0.0	48.6	0.0	54.5
Incr Delay (d2), s/veh	0.7	0.4	0.4	0.0	0.5	0.1	0.1	0.0	0.0	0.2	0.0	12.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.1	0.1	0.1	9.5	0.7	0.3	0.0	0.0	1.1	0.0	7.8
LnGrp Delay(d),s/veh	7.9	0.4	0.4	6.8	10.3	7.0	48.0	0.0	0.0	48.8	0.0	67.4
LnGrp LOS	A	A	A	A	B	A	D			D		E
Approach Vol, veh/h		882			1177			10			233	
Approach Delay, s/veh		2.0			10.1			48.0			64.7	
Approach LOS		A			B			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		24.7		105.3		24.7	10.6	94.7
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		30.0		87.5		30.0	16.0	67.5
Max Q Clear Time (g_c+I1), s		4.2		2.0		18.0	6.3	21.3
Green Ext Time (p_c), s		0.9		23.7		0.7	0.3	20.2

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

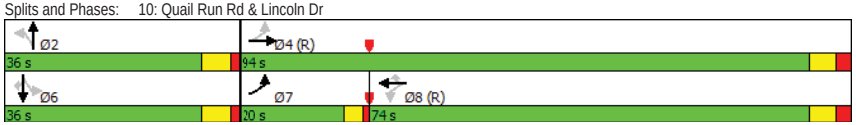
Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	36	94	36	20	74
Maximum Split (%)	27.7%	72.3%	27.7%	15.4%	56.9%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	74	110	74	110	0
End Time (s)	110	74	110	0	74
Yield/Force Off (s)	104	67.5	104	126	67.5
Yield/Force Off 170(s)	84	53.5	84	126	53.5
Local Start Time (s)	74	110	74	110	0
Local Yield (s)	104	67.5	104	126	67.5
Local Yield 170(s)	84	53.5	84	126	53.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	683	48	407	44	58	67	381	1917	38	71	1825	545
Future Volume (veh/h)	683	48	407	44	58	67	381	1917	38	71	1825	545
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	779	0	442	48	63	73	414	2084	41	77	1984	592
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	591	0	491	116	115	103	779	2182	43	254	1737	644
Arrive On Green	0.17	0.00	0.17	0.07	0.07	0.07	0.45	0.85	0.85	0.14	0.34	0.34
Sat Flow, veh/h	3548	0	1583	1774	1770	1583	3442	5134	101	1774	5085	1583
Grp Volume(v), veh/h	779	0	442	48	63	73	414	1375	750	77	1984	592
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1583	1721	1695	1845	1774	1695	1583
Q Serve(g_s), s	20.0	0.0	14.9	3.1	4.1	5.4	10.4	38.7	39.1	4.7	41.0	41.0
Cycle Q Clear(g_c), s	20.0	0.0	14.9	3.1	4.1	5.4	10.4	38.7	39.1	4.7	41.0	41.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	591	0	491	116	115	103	779	1441	784	254	1737	644
V/C Ratio(X)	1.32	0.00	0.90	0.41	0.55	0.71	0.53	0.95	0.96	0.30	1.14	0.92
Avail Cap(c_a), veh/h	591	0	491	207	206	185	779	1441	784	254	1737	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.00	0.98	1.00	1.00	1.00	0.37	0.37	0.37	0.60	0.60	0.60
Uniform Delay (d), s/veh	50.0	0.0	39.7	53.9	54.4	55.0	28.2	8.1	8.1	46.1	39.5	33.3
Incr Delay (d2), s/veh	154.3	0.0	19.3	2.4	4.0	8.5	0.3	7.2	11.7	0.4	68.5	13.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.4	0.0	9.1	1.6	2.2	2.6	4.9	17.9	20.5	2.3	30.2	22.0
LnGrp Delay(d),s/veh	204.3	0.0	59.0	56.3	58.3	63.5	28.5	15.3	19.8	46.5	108.0	47.0
LnGrp LOS	F		E	E	E	E	C	B	B	D	F	D
Approach Vol, veh/h		1221			184			2539			2653	
Approach Delay, s/veh		151.7			59.8			18.8			92.6	
Approach LOS		F			E			B			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.2	57.0		14.8	31.2	47.0		27.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	11.0	51.0		14.0	21.0	41.0		20.0
Max Q Clear Time (g_c+I1), s	6.7	41.1		7.4	12.4	43.0		22.0
Green Ext Time (p_c), s	0.8	8.4		0.4	1.2	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	74.2
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

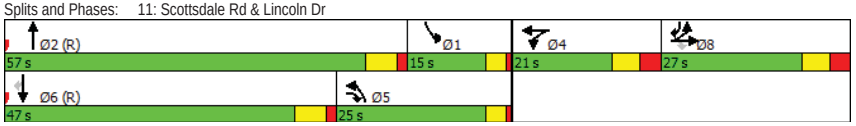
Timing Report, Sorted By Phase
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	57	21	25	47	27
Maximum Split (%)	12.5%	47.5%	17.5%	20.8%	39.2%	22.5%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	4.5	20	5	4.5	20	8
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	12	75	27	2	75	48
End Time (s)	27	12	48	27	2	75
Yield/Force Off (s)	23	6	41	23	116	68
Yield/Force Off 170(s)	23	111	15	23	101	42
Local Start Time (s)	57	0	72	47	0	93
Local Yield (s)	68	51	86	68	41	113
Local Yield 170(s)	68	36	60	68	26	87

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 75 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



HCM 2010 AWSC
12: Mockingbird Ln & McDonald Dr

11/5/2015

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	94	213	4	0	23	261	80	0	14	12	14
Future Vol, veh/h	0	94	213	4	0	23	261	80	0	14	12	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	102	232	4	0	25	284	87	0	15	13	15
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	11.5	15.2	10.4
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	100%	0%	100%	0%	100%	0%
Vol Thru, %	30%	0%	98%	0%	77%	0%	8%
Vol Right, %	35%	0%	2%	0%	23%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	94	217	23	341	57	126
LT Vol	14	94	0	23	0	57	0
Through Vol	12	0	213	0	261	0	10
RT Vol	14	0	4	0	80	0	116
Lane Flow Rate	43	102	236	25	371	62	137
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.082	0.179	0.379	0.043	0.575	0.121	0.224
Departure Headway (Hd)	6.754	6.299	5.78	6.252	5.58	7.054	5.893
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	530	570	623	573	649	508	608
Service Time	4.809	4.034	3.514	3.985	3.313	4.798	3.637
HCM Lane V/C Ratio	0.081	0.179	0.379	0.044	0.572	0.122	0.225
HCM Control Delay	10.4	10.4	12	9.3	15.6	10.8	10.3
HCM Lane LOS	B	B	B	A	C	B	B
HCM 95th-tile Q	0.3	0.6	1.8	0.1	3.7	0.4	0.9

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	57	10	116
Future Vol, veh/h	0	57	10	116
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	62	11	126
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.5
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	220	37	242	224	273	37	2044	248	386	1838	104
Future Volume (veh/h)	90	220	37	242	224	273	37	2044	248	386	1838	104
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	98	239	40	263	243	297	40	2222	270	420	1998	113
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	318	52	264	359	510	391	2034	633	759	2034	633
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.22	0.40	0.40	0.15	0.27	0.27
Sat Flow, veh/h	1774	3042	502	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	98	138	141	263	243	297	40	2222	270	420	1998	113
Grp Sat Flow(s),veh/h/ln	1774	1770	1774	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	9.1	9.3	11.9	7.9	0.0	2.2	48.0	14.8	13.6	46.8	6.6
Cycle Q Clear(g_c), s	0.0	9.1	9.3	11.9	7.9	0.0	2.2	48.0	14.8	13.6	46.8	6.6
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	185	185	264	359	510	391	2034	633	759	2034	633
V/C Ratio(X)	0.36	0.74	0.76	1.00	0.68	0.58	0.10	1.09	0.43	0.55	0.98	0.18
Avail Cap(c_a), veh/h	273	354	355	264	708	666	391	2034	633	759	2034	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09
Uniform Delay (d), s/veh	47.6	52.2	52.3	51.9	52.0	33.9	37.3	36.0	26.0	45.6	43.5	28.8
Incr Delay (d2), s/veh	0.8	5.8	6.4	54.6	2.2	1.1	0.1	50.2	2.1	0.1	3.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.7	4.9	12.7	4.0	8.3	1.1	31.9	6.8	6.5	22.5	2.9
LnGrp Delay(d),s/veh	48.4	58.0	58.7	106.5	54.2	35.0	37.4	86.2	28.1	45.7	46.7	28.8
LnGrp LOS	D	E	E	F	D	C	D	F	C	D	D	C
Approach Vol, veh/h		377			803			2532			2531	
Approach Delay, s/veh		55.8			64.2			79.3			45.7	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.5	54.0	16.0	19.5	30.5	54.0	16.3	19.2
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	15.0	48.0	* 12	24.0	15.0	48.0	* 12	24.0
Max Q Clear Time (g_c+I1), s	15.6	50.0	13.9	11.3	4.2	48.8	2.0	9.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.2	1.3	0.0	0.8	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	62.3
HCM 2010 LOS	E

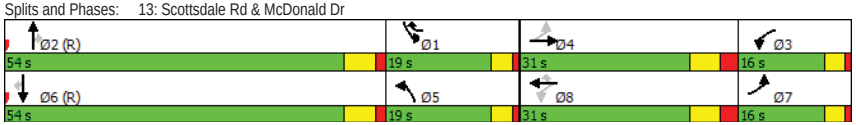
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	19	54	16	31	19	54	16	31
Maximum Split (%)	15.8%	45.0%	13.3%	25.8%	15.8%	45.0%	13.3%	25.8%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	30	14	103	84	30	14	103
End Time (s)	103	84	30	14	103	84	30	14
Yield/Force Off (s)	99	78	26	7	99	78	26	7
Yield/Force Off 170(s)	99	62	26	103	99	62	26	103
Local Start Time (s)	54	0	104	73	54	0	104	73
Local Yield (s)	69	48	116	97	69	48	116	97
Local Yield 170(s)	69	32	116	73	69	32	116	73

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	125
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



Intersection	
Intersection Delay, s/veh	5.7
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	260	281	83
Demand Flow Rate, veh/h	265	287	85
Vehicles Circulating, veh/h	43	43	214
Vehicles Exiting, veh/h	287	256	94
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.7	5.9	4.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	265	287	85
Cap Entry Lane, veh/h	1082	1082	912
Entry HV Adj Factor	0.980	0.980	0.976
Flow Entry, veh/h	260	281	83
Cap Entry, veh/h	1061	1061	891
V/C Ratio	0.245	0.265	0.093
Control Delay, s/veh	5.7	5.9	4.9
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	219	12	29	253	6	14
Future Vol, veh/h	219	12	29	253	6	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	238	13	32	275	7	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	251	0	583	245
Stage 1	-	-	-	-	245	-
Stage 2	-	-	-	-	338	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1314	-	475	794
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	722	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1314	-	463	794
Mov Cap-2 Maneuver	-	-	-	-	550	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	704	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	701	-	-	1314	-
HCM Lane V/C Ratio	0.031	-	-	0.024	-
HCM Control Delay (s)	10.3	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	352	45	110	342	43	103
Future Vol, veh/h	352	45	110	342	43	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	383	49	120	372	47	112

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	432	0	832	407
Stage 1	-	-	-	-	407	-
Stage 2	-	-	-	-	425	-
Critical Hdwy	-	-	4.12	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.218	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1128	-	323	643
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1128	-	289	643
Mov Cap-2 Maneuver	-	-	-	-	289	-
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	561	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	473	-	-	1128	-
HCM Lane V/C Ratio	0.336	-	-	0.106	-
HCM Control Delay (s)	16.4	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.5	-	-	0.4	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	13	5	0	2543	1909	17
Future Vol, veh/h	13	5	0	2543	1909	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	5	0	2764	2075	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3181	1038	2075	0	-	0
Stage 1	2075	-	-	-	-	-
Stage 2	1106	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	21	196	115	-	-	-
Stage 1	51	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	21	196	115	-	-	-
Mov Cap-2 Maneuver	21	-	-	-	-	-
Stage 1	51	-	-	-	-	-
Stage 2	250	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	115	-	196	-	-
HCM Lane V/C Ratio	-	-	0.028	-	-
HCM Control Delay (s)	0	-	23.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	28	0	0	49	37	48
Future Vol, veh/h	28	0	0	49	37	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	0	53	40	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	119	66	92	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	877	998	1503	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	877	998	1503	-	-	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	877	-	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	22	11	37	11	6	31
Future Vol, veh/h	22	11	37	11	6	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	12	40	12	7	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	93	46	0	0	52	0
Stage 1	46	-	-	-	-	-
Stage 2	47	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	907	1023	-	-	1554	-
Stage 1	976	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	902	1023	-	-	1554	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	939	1554	-
HCM Lane V/C Ratio	-	-	0.038	0.004	-
HCM Control Delay (s)	-	-	9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	63	23	25	54	24	30
Future Vol, veh/h	63	23	25	54	24	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	25	27	59	26	33

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	142	57	0	0	86	0
Stage 1	57	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	851	1009	-	-	1510	-
Stage 1	966	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	836	1009	-	-	1510	-
Mov Cap-2 Maneuver	836	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	3.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	876	1510	-
HCM Lane V/C Ratio	-	-	0.107	0.017	-
HCM Control Delay (s)	-	-	9.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	53	10	61	56	33	70
Future Vol, veh/h	53	10	61	56	33	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	11	66	61	36	76

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	245	97	0	0	127	0
Stage 1	97	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	743	959	-	-	1459	-
Stage 1	927	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	724	959	-	-	1459	-
Mov Cap-2 Maneuver	724	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	2.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	753	1459	-
HCM Lane V/C Ratio	-	-	0.091	0.025	-
HCM Control Delay (s)	-	-	10.3	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	61	27	5	375	255	57
Future Vol, veh/h	61	27	5	375	255	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	29	5	408	277	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	413	0	-	0	371	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	162	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1146	-	-	-	630	831
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1146	-	-	-	593	831
Mov Cap-2 Maneuver	-	-	-	-	645	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	816	-

Approach	EB	WB	SB
HCM Control Delay, s	5.8	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1146	-	-	-	672
HCM Lane V/C Ratio	0.058	-	-	-	0.505
HCM Control Delay (s)	8.3	0	-	-	15.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	2.9

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	121	1	28	115	2	36
Future Vol, veh/h	121	1	28	115	2	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	1	30	125	2	39

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	136	93	0	0	155	0
Stage 1	93	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	857	964	-	-	1425	-
Stage 1	931	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	856	964	-	-	1425	-
Mov Cap-2 Maneuver	856	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	857	1425	-
HCM Lane V/C Ratio	-	-	0.155	0.002	-
HCM Control Delay (s)	-	-	10	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

HCM 2010 Roundabout
31: Quail Run Rd & South Residential Access

11/5/2015

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	20	25	208	171
Demand Flow Rate, veh/h	20	26	212	174
Vehicles Circulating, veh/h	199	192	0	60
Vehicles Exiting, veh/h	35	20	219	157
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.1	4.3	4.9	4.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	20	26	212	174
Cap Entry Lane, veh/h	926	933	1130	1064
Entry HV Adj Factor	1.000	0.962	0.981	0.980
Flow Entry, veh/h	20	25	208	171
Cap Entry, veh/h	926	897	1108	1043
V/C Ratio	0.022	0.028	0.188	0.164
Control Delay, s/veh	4.1	4.3	4.9	4.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

HCM 2010 TWSC
32: Quail Run Rd & Townhome Access

11/5/2015

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	16	0	191	33	0	198
Future Vol, veh/h	16	0	191	33	0	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	0	208	36	0	215

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	441	226	0	0	243	0
Stage 1	226	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	574	813	-	-	1323	-
Stage 1	812	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	574	813	-	-	1323	-
Mov Cap-2 Maneuver	574	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	821	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	574	1323	-
HCM Lane V/C Ratio	-	-	0.03	-	-
HCM Control Delay (s)	-	-	11.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

APPENDIX K

2033 PEAK HOUR ANALYSIS

CivTech

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	7	323	0	36	4	0	0	147	13	31
Future Vol, veh/h	0	4	7	323	0	36	4	0	0	147	13	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	8	351	0	39	4	0	0	160	14	34
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	11.2	9.4	10.4
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	90%	3%
Vol Thru, %	0%	30%	0%	2%	10%	91%
Vol Right, %	0%	70%	0%	98%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	44	4	330	40	35
LT Vol	147	0	4	0	36	1
Through Vol	0	13	0	7	4	32
RT Vol	0	31	0	323	0	2
Lane Flow Rate	160	48	4	359	43	38
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.268	0.067	0.007	0.458	0.071	0.061
Departure Headway (Hd)	6.039	5.039	5.79	4.598	5.844	5.788
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	591	705	618	782	610	613
Service Time	3.812	2.811	3.53	2.338	3.914	3.877
HCM Lane V/C Ratio	0.271	0.068	0.006	0.459	0.07	0.062
HCM Control Delay	11	8.2	8.6	11.2	9.4	9.3
HCM Lane LOS	B	A	A	B	A	A
HCM 95th-tile Q	1.1	0.2	0	2.4	0.2	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	32	2
Future Vol, veh/h	0	1	32	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	35	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.3
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	167	47	233	106	76	387
Future Vol, veh/h	167	47	233	106	76	387
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	182	51	253	115	83	421

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	897	311	0	0	368	0
Stage 1	311	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	310	729	-	-	1191	-
Stage 1	743	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	288	729	-	-	1191	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	517	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.7	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	402	729	1191	-
HCM Lane V/C Ratio	-	-	0.452	0.07	0.069	-
HCM Control Delay (s)	-	-	21.1	10.3	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0.2	0.2	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	5	212	2	36	204	5	1	0	47	7	0	5
Future Vol, veh/h	5	212	2	36	204	5	1	0	47	7	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	230	2	39	222	5	1	0	51	8	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	227	0	0	233	0	0	547	547	232	571	546	224
Stage 1	-	-	-	-	-	-	242	242	-	303	303	-
Stage 2	-	-	-	-	-	-	305	305	-	268	243	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1341	-	-	1335	-	-	448	445	807	432	445	815
Stage 1	-	-	-	-	-	-	762	705	-	706	664	-
Stage 2	-	-	-	-	-	-	705	662	-	738	705	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1341	-	-	1335	-	-	434	430	807	395	430	815
Mov Cap-2 Maneuver	-	-	-	-	-	-	434	430	-	395	430	-
Stage 1	-	-	-	-	-	-	759	702	-	703	645	-
Stage 2	-	-	-	-	-	-	680	643	-	689	702	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.1	9.9	12.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	793	1341	-	-	1335	-	-	503
HCM Lane V/C Ratio	0.066	0.004	-	-	0.029	-	-	0.026
HCM Control Delay (s)	9.9	7.7	-	-	7.8	-	-	12.3
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	161	64	612	186	155	39	1329	428	162	1690	45
Future Volume (veh/h)	69	161	64	612	186	155	39	1329	428	162	1690	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	75	175	70	665	202	168	42	1445	465	176	1837	49
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	155	132	725	494	575	251	2076	980	274	2076	647
Arrive On Green	0.05	0.08	0.08	0.21	0.27	0.27	0.10	0.41	0.41	0.10	0.41	0.41
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	75	175	70	665	202	168	42	1445	465	176	1837	49
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	5.0	10.0	5.1	22.7	10.7	1.2	0.0	28.2	0.0	4.4	40.2	1.7
Cycle Q Clear(g_c), s	5.0	10.0	5.1	22.7	10.7	1.2	0.0	28.2	0.0	4.4	40.2	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	155	132	725	494	575	251	2076	980	274	2076	647
V/C Ratio(X)	0.79	1.13	0.53	0.92	0.41	0.29	0.17	0.70	0.47	0.64	0.88	0.08
Avail Cap(c_a), veh/h	177	155	132	803	494	575	255	2076	980	278	2076	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.1	55.0	52.7	46.4	36.3	14.6	47.0	29.3	12.3	47.2	32.9	12.8
Incr Delay (d2), s/veh	5.3	110.5	2.1	13.8	0.2	0.1	0.1	2.0	1.6	3.7	6.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	9.9	2.3	12.2	5.5	2.9	1.3	13.5	8.7	5.8	19.9	0.8
LnGrp Delay(d),s/veh	61.4	165.5	54.8	60.2	36.5	14.7	47.1	31.3	14.0	50.9	38.8	13.0
LnGrp LOS	E	F	D	E	D	B	D	C	B	D	D	B
Approach Vol, veh/h		320			1035			1952			2062	
Approach Delay, s/veh		116.9			48.2			27.5			39.3	
Approach LOS		F			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	55.0	32.3	17.0	15.7	55.0	10.4	38.8
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 12	49.0	* 28	* 10	* 12	49.0	12.0	* 26
Max Q Clear Time (g_c+I1), s	6.4	30.2	24.7	12.0	2.0	42.2	7.0	12.7
Green Ext Time (p_c), s	0.1	2.3	0.6	0.0	0.1	2.5	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	41.3
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

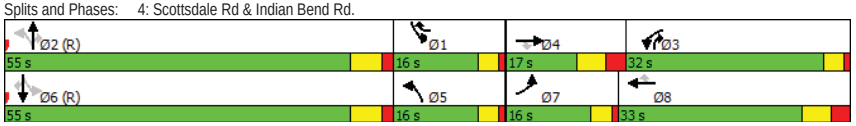
Timing Report, Sorted By Phase
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	16	55	32	17	16	55	16	33
Maximum Split (%)	13.3%	45.8%	26.7%	14.2%	13.3%	45.8%	13.3%	27.5%
Minimum Split (s)	9.4	29.4	8.5	13	8.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	85	30	118	101	85	30	101	117
End Time (s)	101	85	30	118	101	85	117	30
Yield/Force Off (s)	97	79	26	111	97	79	113	23
Yield/Force Off 170(s)	97	63	26	80	97	63	113	112
Local Start Time (s)	55	0	88	71	55	0	71	87
Local Yield (s)	67	49	116	81	67	49	83	113
Local Yield 170(s)	67	33	116	50	67	33	83	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



HCM 2010 TWSC
5: Scottsdale Rd & Joshua Tree Ln

11/5/2015

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	62	5	0	9	0	1765	5	5	2212	28
Future Vol, veh/h	0	0	62	5	0	9	0	1765	5	5	2212	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	150	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	67	5	0	10	0	1918	5	5	2404	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3182	4339	1202	2894	4336	962	2404	0	0	1924	0	0
Stage 1	2415	2415	-	1921	1921	-	-	-	-	-	-	-
Stage 2	767	1924	-	973	2415	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	11	2	152	17	2	220	78	-	-	137	-	-
Stage 1	19	63	-	44	113	-	-	-	-	-	-	-
Stage 2	328	113	-	244	63	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	10	2	152	9	2	220	78	-	-	137	-	-
Mov Cap-2 Maneuver	10	2	-	9	2	-	-	-	-	-	-	-
Stage 1	19	61	-	44	113	-	-	-	-	-	-	-
Stage 2	313	113	-	131	61	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46.3	$ 314.3	0	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	78	-	-	152	23	137	-	-
HCM Lane V/C Ratio	-	-	-	0.443	0.662	0.04	-	-
HCM Control Delay (s)	0	-	-	46.3	$ 314.3	32.4	-	-
HCM Lane LOS	A	-	-	E	F	D	-	-
HCM 95th %tile Q(veh)	0	-	-	2	2	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	35	43	196	1696	2318	121		
Future Volume (veh/h)	35	43	196	1696	2318	121		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	38	47	213	1843	2520	132		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	127	540	1165	4425	2641	822		
Arrive On Green	0.04	0.04	0.30	0.87	0.52	0.52		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	38	47	213	1843	2520	132		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	1.4	0.0	1.2	9.5	60.9	5.6		
Cycle Q Clear(g_c), s	1.4	0.0	1.2	9.5	60.9	5.6		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	127	540	1165	4425	2641	822		
V/C Ratio(X)	0.30	0.09	0.18	0.42	0.95	0.16		
Avail Cap(c_a), veh/h	806	852	1165	4425	2641	822		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.67	0.67	1.00	1.00		
Uniform Delay (d), s/veh	60.5	28.9	31.2	1.7	29.5	16.3		
Incr Delay (d2), s/veh	1.3	0.1	0.1	0.2	9.7	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	1.7	2.7	4.3	30.6	2.6		
LnGrp Delay(d),s/veh	61.8	28.9	31.3	1.9	39.2	16.7		
LnGrp LOS	E	C	C	A	D	B		
Approach Vol, veh/h	85			2056	2652			
Approach Delay, s/veh	43.6			4.9	38.1			
Approach LOS	D			A	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		118.2		10.8	45.2	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		30.2	* 16	* 67		
Max Q Clear Time (g_c+I1), s		11.5		3.4	3.2	62.9		
Green Ext Time (p_c), s		30.0		0.2	10.1	3.9		
Intersection Summary								
HCM 2010 Ctrl Delay			24.0					
HCM 2010 LOS			C					
Notes								

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

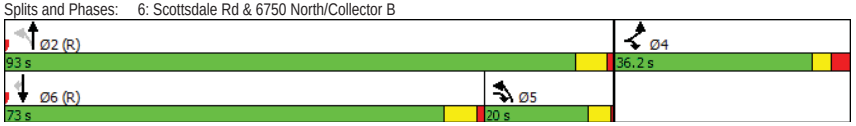
Timing Report, Sorted By Phase
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	36.2	20	73
Maximum Split (%)	72.0%	28.0%	15.5%	56.5%
Minimum Split (s)	36	36.2	8	36.9
Yellow Time (s)	4.9	3	3.5	4.9
All-Red Time (s)	1.1	3	0.5	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	65	28.8	8.8	65
End Time (s)	28.8	65	28.8	8.8
Yield/Force Off (s)	22.8	59	24.8	2.8
Yield/Force Off 170(s)	0.8	40	24.8	110
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	123.2	89	67
Local Yield 170(s)	65	104.2	89	45

Intersection Summary	
Cycle Length	129.2
Control Type	Actuated-Coordinated
Natural Cycle	95
Offset: 65 (50%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



HCM 2010 Signalized Intersection Summary
7: Tatum Blvd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	832	72	305	779	107	51	583	432	329	989	424
Future Volume (veh/h)	179	832	72	305	779	107	51	583	432	329	989	424
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	195	904	78	332	847	116	55	634	470	358	1075	461
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	888	77	246	1081	483	164	1036	464	398	1470	658
Arrive On Green	0.07	0.27	0.27	0.11	0.31	0.31	0.03	0.29	0.29	0.15	0.42	0.42
Sat Flow, veh/h	3442	3298	285	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	195	485	497	332	847	116	55	634	470	358	1075	461
Grp Sat Flow(s),veh/h/ln	1721	1770	1813	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.2	35.0	35.0	14.0	28.4	7.1	2.8	20.1	38.1	17.7	33.2	31.2
Cycle Q Clear(g_c), s	7.2	35.0	35.0	14.0	28.4	7.1	2.8	20.1	38.1	17.7	33.2	31.2
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	476	488	246	1081	483	164	1036	464	398	1470	658
V/C Ratio(X)	0.79	1.02	1.02	1.35	0.78	0.24	0.34	0.61	1.01	0.90	0.73	0.70
Avail Cap(c_a), veh/h	318	476	488	246	1081	483	164	1036	464	508	1470	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	47.5	47.5	38.6	41.2	33.8	32.1	39.6	46.0	28.0	31.9	31.3
Incr Delay (d2), s/veh	7.4	45.9	45.4	177.8	5.0	1.0	0.4	2.7	45.3	14.1	3.2	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	23.1	23.6	21.0	14.6	3.3	1.4	10.2	22.4	10.1	16.8	14.7
LnGrp Delay(d),s/veh	66.8	93.4	92.9	216.4	46.2	34.9	32.5	42.3	91.3	42.1	35.2	37.5
LnGrp LOS	E	F	F	F	D	C	C	D	F	D	D	D
Approach Vol, veh/h		1177			1295			1159			1894	
Approach Delay, s/veh		88.8			88.8			61.7			37.0	
Approach LOS		F			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	46.7	23.9	45.1	19.0	42.0	8.0	61.0
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	12.0	37.0	28.0	30.0	14.0	35.0	4.0	54.0
Max Q Clear Time (g_c+I1), s	9.2	30.4	19.7	40.1	16.0	37.0	4.8	35.2
Green Ext Time (p_c), s	0.1	6.3	0.2	0.0	0.0	0.0	0.0	18.2

Intersection Summary	
HCM 2010 Ctrl Delay	65.4
HCM 2010 LOS	E

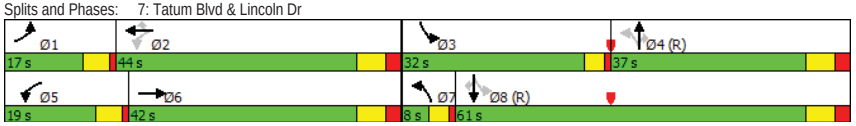
Timing Report, Sorted By Phase
7: Tatum Blvd & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBT	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	17	44	32	37	19	42	8	61
Maximum Split (%)	13.1%	33.8%	24.6%	28.5%	14.6%	32.3%	6.2%	46.9%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	101	15	47	84	103	15	23
End Time (s)	101	15	47	84	103	15	23	84
Yield/Force Off (s)	96	8	43	77	98	8	19	77
Yield/Force Off 170(s)	96	115	43	53	98	115	19	53
Local Start Time (s)	37	54	98	0	37	56	98	106
Local Yield (s)	49	91	126	30	51	91	102	30
Local Yield 170(s)	49	68	126	6	51	68	102	6

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 47 (36%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
8: Invergordon Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1154	216	60	1085	23	113	4	102	20	12	5
Future Volume (veh/h)	11	1154	216	60	1085	23	113	4	102	20	12	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	12	1254	235	65	1179	25	123	4	111	22	13	5
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	1975	367	252	2348	50	323	8	225	146	75	20
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	463	2981	554	352	3544	75	1389	55	1536	438	516	136
Grp Volume(v), veh/h	12	740	749	65	589	615	123	0	115	40	0	0
Grp Sat Flow(s),veh/h/ln	463	1770	1765	352	1770	1849	1389	0	1592	1090	0	0
Q Serve(g_s), s	0.9	16.5	16.9	9.0	11.4	11.4	0.3	0.0	4.5	0.1	0.0	0.0
Cycle Q Clear(g_c), s	12.4	16.5	16.9	25.9	11.4	11.4	4.9	0.0	4.5	4.6	0.0	0.0
Prop In Lane	1.00		0.31	1.00		0.04	1.00		0.97	0.55		0.12
Lane Grp Cap(c), veh/h	334	1172	1169	252	1172	1225	323	0	233	241	0	0
V/C Ratio(X)	0.04	0.63	0.64	0.26	0.50	0.50	0.38	0.00	0.49	0.17	0.00	0.00
Avail Cap(c_a), veh/h	334	1172	1169	252	1172	1225	610	0	562	543	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.27	0.27	0.27	0.77	0.77	0.77	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.9	6.7	6.7	14.3	5.8	5.8	26.8	0.0	26.7	25.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.7	1.9	1.2	1.1	0.7	0.0	1.6	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	8.0	8.4	1.0	5.8	6.0	2.2	0.0	2.1	0.7	0.0	0.0
LnGrp Delay(d),s/veh	9.0	7.4	7.5	16.2	7.0	6.9	27.6	0.0	28.3	25.7	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C		C	C		
Approach Vol, veh/h		1501			1269			238			40	
Approach Delay, s/veh		7.4			7.4			27.9			25.7	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.1		16.9		51.1		16.9
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		31.0		24.0		31.0		24.0
Max Q Clear Time (g_c+I1), s		27.9		6.9		18.9		6.6
Green Ext Time (p_c), s		2.9		1.1		11.0		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A

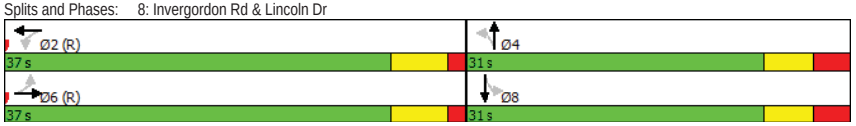
Timing Report, Sorted By Phase
8: Invergordon Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	37	31	37	31
Maximum Split (%)	54.4%	45.6%	54.4%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	28	59	28
End Time (s)	28	59	28	59
Yield/Force Off (s)	22	52	22	52
Yield/Force Off 170(s)	11	35	11	52
Local Start Time (s)	0	37	0	37
Local Yield (s)	31	61	31	61
Local Yield 170(s)	20	44	20	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	65
Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	1196	37	27	1003	24	18	60	36	98	121	336
Future Volume (veh/h)	269	1196	37	27	1003	24	18	60	36	98	121	336
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	292	1300	40	29	1090	26	20	65	39	107	132	365
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	542	2262	70	114	1250	30	203	179	108	311	482	410
Arrive On Green	0.25	0.65	0.65	0.71	0.71	0.71	0.16	0.16	0.16	0.06	0.26	0.26
Sat Flow, veh/h	1774	3506	108	406	3533	84	897	1092	655	1774	1863	1583
Grp Volume(v), veh/h	292	656	684	29	546	570	20	0	104	107	132	365
Grp Sat Flow(s),veh/h/ln	1774	1770	1844	406	1770	1848	897	0	1747	1774	1863	1583
Q Serve(g_s), s	9.9	27.2	27.2	7.7	30.6	30.6	2.5	0.0	6.9	6.3	7.3	28.9
Cycle Q Clear(g_c), s	9.9	27.2	27.2	34.9	30.6	30.6	2.5	0.0	6.9	6.3	7.3	28.9
Prop In Lane	1.00		0.06	1.00		0.05	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	542	1142	1189	114	626	654	203	0	287	311	482	410
V/C Ratio(X)	0.54	0.57	0.58	0.25	0.87	0.87	0.10	0.00	0.36	0.34	0.27	0.89
Avail Cap(c_a), veh/h	542	1142	1189	114	626	654	266	0	410	430	738	627
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.75	0.75	0.81	0.81	0.81	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	13.0	13.0	28.7	16.7	16.8	46.4	0.0	48.3	39.9	38.4	46.4
Incr Delay (d2), s/veh	0.8	1.6	1.5	4.3	13.0	12.5	0.2	0.0	0.8	0.7	0.3	10.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	13.6	14.2	1.0	16.5	17.5	0.6	0.0	3.4	3.1	3.8	13.8
LnGrp Delay(d),s/veh	38.6	14.6	14.5	33.0	29.7	29.3	46.6	0.0	49.0	40.6	38.7	56.7
LnGrp LOS	D	B	B	C	C	C	D		D	D	D	E
Approach Vol, veh/h		1632			1145			124			604	
Approach Delay, s/veh		18.9			29.6			48.7			49.9	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	37.9	52.0	12.3	27.9		89.9		40.1
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	16.0	* 46	17.0	30.5		66.0		51.5
Max Q Clear Time (g_c+I1), s	11.9	36.9	8.3	8.9		29.2		30.9
Green Ext Time (p_c), s	2.2	5.0	0.1	2.8		14.1		2.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

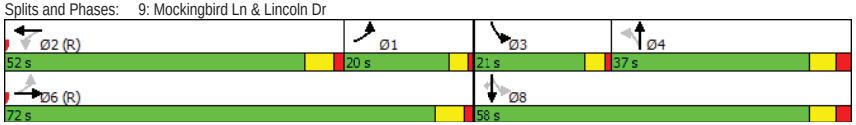
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	20	52	21	37	72	58
Maximum Split (%)	15.4%	40.0%	16.2%	28.5%	55.4%	44.6%
Minimum Split (s)	8	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	50	128	70	91	128	70
End Time (s)	70	50	91	128	70	128
Yield/Force Off (s)	66	44	87	121.5	64	121.5
Yield/Force Off 170(s)	66	30	87	101.5	50	101.5
Local Start Time (s)	52	0	72	93	0	72
Local Yield (s)	68	46	89	123.5	66	123.5
Local Yield 170(s)	68	32	89	103.5	52	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 128 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	1189	5	5	1279	27	5	0	5	50	0	91
Future Volume (veh/h)	157	1189	5	5	1279	27	5	0	5	50	0	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	171	1292	5	5	1390	29	5	0	5	54	0	99
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	349	2977	12	374	2668	56	78	13	50	179	0	128
Arrive On Green	0.08	1.00	1.00	0.75	0.75	0.75	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1774	3616	14	423	3545	74	457	159	616	1538	0	1583
Grp Volume(v), veh/h	171	632	665	5	693	726	10	0	0	54	0	99
Grp Sat Flow(s),veh/h/ln	1774	1770	1860	423	1770	1850	1231	0	0	1538	0	1583
Q Serve(g_s), s	2.9	0.0	0.0	0.4	20.7	20.8	0.0	0.0	0.0	0.0	0.0	8.0
Cycle Q Clear(g_c), s	2.9	0.0	0.0	0.4	20.7	20.8	3.8	0.0	0.0	3.8	0.0	8.0
Prop In Lane	1.00		0.01	1.00		0.04	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	349	1457	1531	374	1332	1392	141	0	0	179	0	128
V/C Ratio(X)	0.49	0.43	0.43	0.01	0.52	0.52	0.07	0.00	0.00	0.30	0.00	0.78
Avail Cap(c_a), veh/h	497	1457	1531	374	1332	1392	322	0	0	358	0	329
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	0.67	0.67	0.67	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.9	0.0	0.0	4.0	6.5	6.5	55.3	0.0	0.0	56.7	0.0	58.6
Incr Delay (d2), s/veh	0.9	0.8	0.7	0.0	1.0	0.9	0.2	0.0	0.0	0.9	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.3	0.3	0.0	10.4	10.8	0.3	0.0	0.0	1.9	0.0	3.8
LnGrp Delay(d),s/veh	6.8	0.8	0.7	4.1	7.5	7.5	55.5	0.0	0.0	57.6	0.0	68.2
LnGrp LOS	A	A	A	A	A	A	E			E		E
Approach Vol, veh/h		1468			1424			10			153	
Approach Delay, s/veh		1.5			7.5			55.5			64.5	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		16.5		113.5		16.5	9.2	104.3
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		27.0		90.5		27.0	16.0	70.5
Max Q Clear Time (g_c+I1), s		5.8		2.0		10.0	4.9	22.8
Green Ext Time (p_c), s		0.6		49.9		0.5	0.3	34.1

Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A

Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

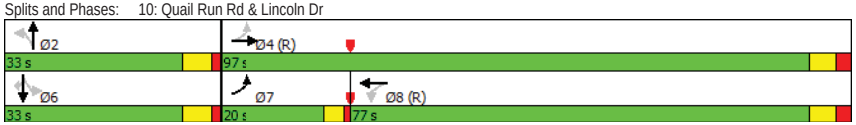
11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	33	97	33	20	77
Maximum Split (%)	25.4%	74.6%	25.4%	15.4%	59.2%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	54	87	54	87	107
End Time (s)	87	54	87	107	54
Yield/Force Off (s)	81	47.5	81	103	47.5
Yield/Force Off 170(s)	61	33.5	61	103	33.5
Local Start Time (s)	77	110	77	110	0
Local Yield (s)	104	70.5	104	126	70.5
Local Yield 170(s)	84	56.5	84	126	56.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 107 (82%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	48	430	26	35	47	313	1294	31	32	1836	695
Future Volume (veh/h)	695	48	430	26	35	47	313	1294	31	32	1836	695
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	792	0	467	28	38	51	340	1407	34	35	1996	755
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	0	198	87	87	78	387	3196	77	44	2737	930
Arrive On Green	0.10	0.00	0.10	0.05	0.05	0.05	0.23	1.00	1.00	0.03	0.54	0.54
Sat Flow, veh/h	3548	0	1583	1774	1770	1583	3442	5108	123	1774	5085	1583
Grp Volume(v), veh/h	792	0	467	28	38	51	340	934	507	35	1996	755
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1583	1721	1695	1841	1774	1695	1583
Q Serve(g_s), s	12.0	0.0	12.0	1.8	2.5	3.8	11.4	0.0	0.0	2.4	35.8	45.1
Cycle Q Clear(g_c), s	12.0	0.0	12.0	1.8	2.5	3.8	11.4	0.0	0.0	2.4	35.8	45.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	355	0	198	87	87	78	387	2121	1152	44	2737	930
V/C Ratio(X)	2.23	0.00	2.36	0.32	0.44	0.65	0.88	0.44	0.44	0.79	0.73	0.81
Avail Cap(c_a), veh/h	355	0	198	281	280	251	430	2121	1152	148	2737	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.00	0.90	1.00	1.00	1.00	0.76	0.76	0.76	0.67	0.67	0.67
Uniform Delay (d), s/veh	54.0	0.0	52.5	55.1	55.4	56.0	45.7	0.0	0.0	58.2	21.1	19.5
Incr Delay (d2), s/veh	562.6	0.0	625.6	0.8	1.3	3.4	12.6	0.5	0.9	7.6	1.2	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	33.6	0.0	40.9	0.9	1.3	1.7	6.1	0.1	0.3	1.3	16.9	23.4
LnGrp Delay(d),s/veh	616.6	0.0	678.1	55.9	56.7	59.4	58.3	0.5	0.9	65.8	22.3	24.8
LnGrp LOS	F		F	E	E	E	E	A	A	E	C	C
Approach Vol, veh/h		1259			117			1781			2786	
Approach Delay, s/veh		639.4			57.7			11.7			23.5	
Approach LOS		F			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	81.1		12.9	17.5	70.6		19.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	10.0	55.0		19.0	15.0	50.0		12.0
Max Q Clear Time (g_c+I1), s	4.4	2.0		5.8	13.4	47.1		14.0
Green Ext Time (p_c), s	0.0	8.0		0.2	0.1	2.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	151.1
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

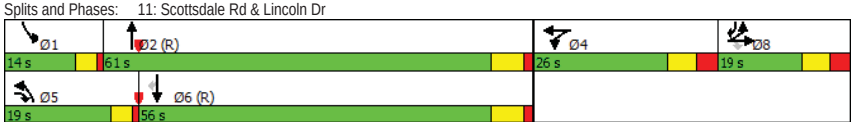
Timing Report, Sorted By Phase
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	14	61	26	19	56	19
Maximum Split (%)	11.7%	50.8%	21.7%	15.8%	46.7%	15.8%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	4	4	4	4	4	4
Vehicle Extension (s)	1	0.2	2	1	0.2	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	71	85	26	71	90	52
End Time (s)	85	26	52	90	26	71
Yield/Force Off (s)	81	20	45	86	20	64
Yield/Force Off 170(s)	81	5	19	86	5	38
Local Start Time (s)	101	115	56	101	0	82
Local Yield (s)	111	50	75	116	50	94
Local Yield 170(s)	111	35	49	116	35	68

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 90 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



HCM 2010 AWSC
12: Mockingbird Ln & McDonald Dr

11/5/2015

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	57	240	10	0	9	300	43	0	5	5	5
Future Vol, veh/h	0	57	240	10	0	9	300	43	0	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	62	261	11	0	10	326	47	0	5	5	5
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	11.6	14.6	9.9
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	33%	100%	0%	100%	0%	100%	0%
Vol Thru, %	33%	0%	96%	0%	87%	0%	7%
Vol Right, %	33%	0%	4%	0%	13%	0%	93%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	57	250	9	343	84	76
LT Vol	5	57	0	9	0	84	0
Through Vol	5	0	240	0	300	0	5
RT Vol	5	0	10	0	43	0	71
Lane Flow Rate	16	62	272	10	373	91	83
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.03	0.103	0.411	0.016	0.555	0.176	0.132
Departure Headway (Hd)	6.661	6.1	5.566	6.062	5.468	6.924	5.755
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	540	591	652	594	664	521	627
Service Time	4.67	3.8	3.266	3.762	3.168	4.625	3.456
HCM Lane V/C Ratio	0.03	0.105	0.417	0.017	0.562	0.175	0.132
HCM Control Delay	9.9	9.5	12.1	8.9	14.8	11.1	9.3
HCM Lane LOS	A	A	B	A	B	B	A
HCM 95th-tile Q	0.1	0.3	2	0	3.4	0.6	0.5

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	84	5	71
Future Vol, veh/h	0	84	5	71
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	91	5	77
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.2
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	252	37	316	364	341	49	1206	150	218	1922	75
Future Volume (veh/h)	131	252	37	316	364	341	49	1206	150	218	1922	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	142	274	40	343	396	371	53	1311	163	237	2089	82
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	354	51	281	515	591	404	1907	594	783	1907	594
Arrive On Green	0.08	0.11	0.11	0.11	0.15	0.15	0.23	0.38	0.38	0.30	0.50	0.50
Sat Flow, veh/h	1774	3105	448	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	142	155	159	343	396	371	53	1311	163	237	2089	82
Grp Sat Flow(s),veh/h/ln	1774	1770	1784	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	4.9	10.2	10.4	13.0	12.9	0.0	2.9	26.1	8.6	6.3	45.0	3.3
Cycle Q Clear(g_c), s	4.9	10.2	10.4	13.0	12.9	0.0	2.9	26.1	8.6	6.3	45.0	3.3
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	202	204	281	515	591	404	1907	594	783	1907	594
V/C Ratio(X)	0.71	0.77	0.78	1.22	0.77	0.63	0.13	0.69	0.27	0.30	1.10	0.14
Avail Cap(c_a), veh/h	257	339	342	281	678	664	404	1907	594	783	1907	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.39	0.39	0.39
Uniform Delay (d), s/veh	52.3	51.6	51.7	51.3	49.3	30.8	36.9	31.6	26.1	34.5	30.1	19.6
Incr Delay (d2), s/veh	6.2	6.0	6.4	126.7	3.9	1.6	0.1	2.0	1.1	0.1	46.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	5.3	5.5	19.2	6.6	10.3	1.4	12.5	3.9	3.0	29.2	1.5
LnGrp Delay(d),s/veh	58.5	57.6	58.1	178.0	53.2	32.4	37.0	33.6	27.3	34.6	76.9	19.8
LnGrp LOS	E	E	E	F	D	C	D	C	C	C	F	B
Approach Vol, veh/h		456			1110			1527			2408	
Approach Delay, s/veh		58.1			84.8			33.1			70.8	
Approach LOS		E			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	51.0	17.0	20.7	31.3	51.0	13.2	24.5
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	13.0	45.0	* 13	23.0	18.0	45.0	* 13	23.0
Max Q Clear Time (g_c+I1), s	10.3	28.1	15.0	12.4	4.9	47.0	6.9	14.9
Green Ext Time (p_c), s	0.7	9.3	0.0	1.3	0.8	0.0	0.9	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	62.1
HCM 2010 LOS	E

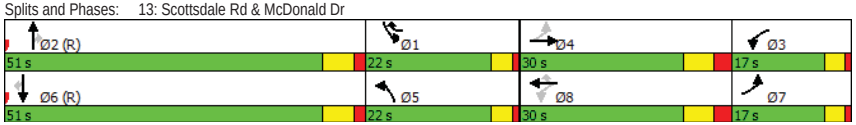
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	22	51	17	30	22	51	17	30
Maximum Split (%)	18.3%	42.5%	14.2%	25.0%	18.3%	42.5%	14.2%	25.0%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	81	30	13	103	81	30	13	103
End Time (s)	103	81	30	13	103	81	30	13
Yield/Force Off (s)	99	75	26	6	99	75	26	6
Yield/Force Off 170(s)	99	59	26	102	99	59	26	102
Local Start Time (s)	51	0	103	73	51	0	103	73
Local Yield (s)	69	45	116	96	69	45	116	96
Local Yield 170(s)	69	29	116	72	69	29	116	72

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	105
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



Intersection	
Intersection Delay, s/veh	5.0
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	189	232	61
Demand Flow Rate, veh/h	192	236	63
Vehicles Circulating, veh/h	22	25	176
Vehicles Exiting, veh/h	239	213	38
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.9	5.3	4.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	192	236	63
Cap Entry Lane, veh/h	1105	1102	948
Entry HV Adj Factor	0.982	0.982	0.968
Flow Entry, veh/h	189	232	61
Cap Entry, veh/h	1085	1082	918
V/C Ratio	0.174	0.214	0.066
Control Delay, s/veh	4.9	5.3	4.5
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	190	3	6	200	13	29
Future Vol, veh/h	190	3	6	200	13	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	207	3	7	217	14	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	210	0	438	208
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1361	-	576	832
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1361	-	573	832
Mov Cap-2 Maneuver	-	-	-	-	573	-
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	804	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	730	-	-	1361	-
HCM Lane V/C Ratio	0.063	-	-	0.005	-
HCM Control Delay (s)	10.3	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	246	17	40	223	23	54
Future Vol, veh/h	246	17	40	223	23	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	267	18	43	242	25	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	286	0	485	277
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	208	-
Critical Hdwy	-	-	4.12	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.218	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1276	-	526	761
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1276	-	508	761
Mov Cap-2 Maneuver	-	-	-	-	585	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	780	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	698	-	-	1276	-
HCM Lane V/C Ratio	0.12	-	-	0.034	-
HCM Control Delay (s)	10.9	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	3	1	0	1794	1927	6
Future Vol, veh/h	3	1	0	1794	1927	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1	0	1950	2095	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2875	1047	2095	0	-	0
Stage 1	2095	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	31	193	112	-	-	-
Stage 1	49	-	-	-	-	-
Stage 2	374	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	31	193	112	-	-	-
Mov Cap-2 Maneuver	31	-	-	-	-	-
Stage 1	49	-	-	-	-	-
Stage 2	374	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	112	-	193	-	-
HCM Lane V/C Ratio	-	-	0.006	-	-
HCM Control Delay (s)	0	-	23.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	44	0	0	13	21	14
Future Vol, veh/h	44	0	0	13	21	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	0	0	14	23	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	44	30	38	0	-	0
Stage 1	30	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	967	1044	1572	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	967	1044	1572	-	-	-
Mov Cap-2 Maneuver	967	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1572	-	967	-	-
HCM Lane V/C Ratio	-	-	0.049	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	10	5	7	22	11	10
Future Vol, veh/h	10	5	7	22	11	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	5	8	24	12	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	55	20	0	0	32	0
Stage 1	20	-	-	-	-	-
Stage 2	35	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	953	1058	-	-	1580	-
Stage 1	1003	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	945	1058	-	-	1580	-
Mov Cap-2 Maneuver	945	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	980	1580	-
HCM Lane V/C Ratio	-	-	0.017	0.008	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	15	5	25	19	8	13
Future Vol, veh/h	15	5	25	19	8	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	5	27	21	9	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	70	38	0	0	48	0
Stage 1	38	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	934	1034	-	-	1559	-
Stage 1	984	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	928	1034	-	-	1559	-
Mov Cap-2 Maneuver	928	-	-	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	985	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	952	1559	-
HCM Lane V/C Ratio	-	-	0.023	0.006	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	15	9	33	18	9	20
Future Vol, veh/h	15	9	33	18	9	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	10	36	20	10	22

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	87	46	0	0	55	0
Stage 1	46	-	-	-	-	-
Stage 2	41	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	914	1023	-	-	1550	-
Stage 1	976	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	908	1023	-	-	1550	-
Mov Cap-2 Maneuver	908	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	948	1550	-
HCM Lane V/C Ratio	-	-	0.028	0.006	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	19	8	12	160	49	13
Future Vol, veh/h	19	8	12	160	49	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	9	13	174	53	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	150	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1387	-	-	-	842	956
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1387	-	-	-	829	956
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	SB
HCM Control Delay, s	5.4	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1387	-	-	-	833
HCM Lane V/C Ratio	0.015	-	-	-	0.081
HCM Control Delay (s)	7.6	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	31	4	67	49	1	26
Future Vol, veh/h	31	4	67	49	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	4	73	53	1	28

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	129	99	0	0	126	0
Stage 1	99	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	865	957	-	-	1460	-
Stage 1	925	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	864	957	-	-	1460	-
Mov Cap-2 Maneuver	864	-	-	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	992	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	874	1460	-
HCM Lane V/C Ratio	-	-	0.044	0.001	-
HCM Control Delay (s)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

HCM 2010 Roundabout
31: Quail Run Rd & South Residential Access

11/5/2015

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	33	22	192	62
Demand Flow Rate, veh/h	34	22	196	63
Vehicles Circulating, veh/h	85	140	0	33
Vehicles Exiting, veh/h	11	56	119	129
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.9	3.9	4.8	3.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	34	22	196	63
Cap Entry Lane, veh/h	1038	982	1130	1093
Entry HV Adj Factor	0.971	1.000	0.982	0.980
Flow Entry, veh/h	33	22	192	62
Cap Entry, veh/h	1007	982	1110	1072
V/C Ratio	0.033	0.022	0.173	0.058
Control Delay, s/veh	3.9	3.9	4.8	3.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

HCM 2010 TWSC
32: Quail Run Rd & Townhome Access

11/5/2015

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	34	0	177	7	0	107
Future Vol, veh/h	34	0	177	7	0	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	0	192	8	0	116

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	312	196	0	0	200	0
Stage 1	196	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	681	845	-	-	1372	-
Stage 1	837	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	681	845	-	-	1372	-
Mov Cap-2 Maneuver	681	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	681	1372	-
HCM Lane V/C Ratio	-	-	0.054	-	-
HCM Control Delay (s)	-	-	10.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	34	232	0	20	18	4	0	311	42	49
Future Vol, veh/h	0	4	34	232	0	20	18	4	0	311	42	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	37	252	0	22	20	4	0	338	46	53
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	11.9	10	14.7
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	48%	3%
Vol Thru, %	0%	46%	0%	13%	43%	83%
Vol Right, %	0%	54%	0%	87%	10%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	311	91	4	266	42	29
LT Vol	311	0	4	0	20	1
Through Vol	0	42	0	34	18	24
RT Vol	0	49	0	232	4	4
Lane Flow Rate	338	99	4	289	46	32
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.568	0.142	0.008	0.423	0.081	0.053
Departure Headway (Hd)	6.051	5.167	6.487	5.365	6.367	6.104
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	598	697	555	677	564	589
Service Time	3.755	2.871	4.187	3.065	4.39	4.12
HCM Lane V/C Ratio	0.565	0.142	0.007	0.427	0.082	0.054
HCM Control Delay	16.4	8.7	9.2	11.9	10	9.5
HCM Lane LOS	C	A	A	B	A	A
HCM 95th-tile Q	3.6	0.5	0	2.1	0.3	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	24	4
Future Vol, veh/h	0	1	24	4
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	26	4
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.5
HCM LOS	A

Lane

HCM 2010 TWSC
2: Mockingbird Ln & Indian Bend Rd.

11/5/2015

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	153	84	343	180	74	207
Future Vol, veh/h	153	84	343	180	74	207
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	91	373	196	80	225

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	857	471	0	0	568	0
Stage 1	471	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	328	593	-	-	1004	-
Stage 1	628	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	302	593	-	-	1004	-
Mov Cap-2 Maneuver	425	-	-	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	2.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	425	593	1004	-
HCM Lane V/C Ratio	-	-	0.391	0.154	0.08	-
HCM Control Delay (s)	-	-	18.8	12.2	8.9	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.8	0.5	0.3	-

HCM 2010 TWSC
3: Indian Bend Rd. & Scottsdale Plaza Resort Dwy

11/5/2015

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	5	227	5	78	276	15	5	0	155	5	0	5
Future Vol, veh/h	5	227	5	78	276	15	5	0	155	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	247	5	85	300	16	5	0	168	5	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	316	0	0	252	0	0	740	746	249	823	741	308
Stage 1	-	-	-	-	-	-	260	260	-	478	478	-
Stage 2	-	-	-	-	-	-	480	486	-	345	263	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1244	-	-	1313	-	-	333	342	790	292	344	732
Stage 1	-	-	-	-	-	-	745	693	-	568	556	-
Stage 2	-	-	-	-	-	-	567	551	-	671	691	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1244	-	-	1313	-	-	313	319	790	218	320	732
Mov Cap-2 Maneuver	-	-	-	-	-	-	313	319	-	218	320	-
Stage 1	-	-	-	-	-	-	742	690	-	566	520	-
Stage 2	-	-	-	-	-	-	526	515	-	526	688	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	11.2	16.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	754	1244	-	-	1313	-	-	336
HCM Lane V/C Ratio	0.231	0.004	-	-	0.065	-	-	0.032
HCM Control Delay (s)	11.2	7.9	-	-	7.9	-	-	16.1
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0	-	-	0.2	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	246	70	500	288	139	115	1962	540	191	1703	79
Future Volume (veh/h)	158	246	70	500	288	139	115	1962	540	191	1703	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	172	267	76	543	313	151	125	2133	587	208	1851	86
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	171	145	601	335	456	275	2161	949	254	2161	673
Arrive On Green	0.11	0.09	0.09	0.17	0.18	0.18	0.11	0.43	0.43	0.11	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	172	267	76	543	313	151	125	2133	587	208	1851	86
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	11.4	11.0	5.5	18.6	19.9	1.8	2.1	49.9	7.3	9.5	39.5	2.6
Cycle Q Clear(g_c), s	11.4	11.0	5.5	18.6	19.9	1.8	2.1	49.9	7.3	9.5	39.5	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	171	145	601	335	456	275	2161	949	254	2161	673
V/C Ratio(X)	0.87	1.56	0.52	0.90	0.94	0.33	0.46	0.99	0.62	0.82	0.86	0.13
Avail Cap(c_a), veh/h	207	171	145	660	335	456	289	2161	949	268	2161	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	54.5	52.0	48.5	48.5	16.4	46.9	34.2	15.3	50.5	31.2	9.2
Incr Delay (d2), s/veh	28.0	280.1	1.7	14.2	32.5	0.2	0.4	16.5	3.0	15.9	4.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	18.9	2.5	10.0	13.3	2.6	3.8	26.6	3.8	7.8	19.3	1.2
LnGrp Delay(d),s/veh	80.4	334.6	53.7	62.8	81.0	16.5	47.4	50.7	18.3	66.4	35.8	9.6
LnGrp LOS	F	F	D	E	F	B	D	D	B	E	D	A
Approach Vol, veh/h		515			1007			2845			2145	
Approach Delay, s/veh		208.3			61.5			43.9			37.7	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	57.0	28.0	18.0	17.0	57.0	17.4	28.6
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 14	51.0	* 23	* 11	* 14	51.0	14.0	* 20
Max Q Clear Time (g_c+I1), s	11.5	51.9	20.6	13.0	4.1	41.5	13.4	21.9
Green Ext Time (p_c), s	0.1	0.0	0.4	0.0	0.1	3.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.6
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

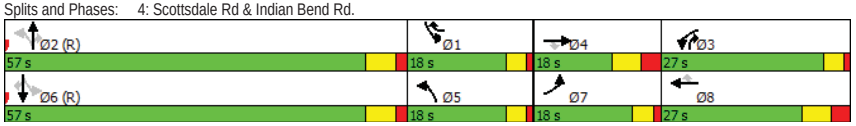
Timing Report, Sorted By Phase
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	18	57	27	18	18	57	18	27
Maximum Split (%)	15.0%	47.5%	22.5%	15.0%	15.0%	47.5%	15.0%	22.5%
Minimum Split (s)	9.4	29.4	8.5	13	9.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	87	30	3	105	87	30	105	3
End Time (s)	105	87	30	3	105	87	3	30
Yield/Force Off (s)	101	81	26	116	101	81	119	23
Yield/Force Off 170(s)	101	65	26	85	101	65	119	112
Local Start Time (s)	57	0	93	75	57	0	75	93
Local Yield (s)	71	51	116	86	71	51	89	113
Local Yield 170(s)	71	35	116	55	71	35	89	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	100
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



HCM 2010 TWSC
5: Scottsdale Rd & Joshua Tree Ln

11/5/2015

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	115	5	0	11	0	2571	7	10	2273	79
Future Vol, veh/h	0	0	115	5	0	11	0	2571	7	10	2273	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	150	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	125	5	0	12	0	2795	8	11	2471	86

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3610	5294	1235	3808	5290	1401	2471	0	0	2802	0	0
Stage 1	2492	2492	-	2798	2798	-	-	-	-	-	-	-
Stage 2	1118	2802	-	1010	2492	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	6	0	144	~ 4	0	111	72	-	-	48	-	-
Stage 1	17	57	-	10	39	-	-	-	-	-	-	-
Stage 2	198	39	-	232	57	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	4	0	144	0	0	111	72	-	-	48	-	-
Mov Cap-2 Maneuver	4	0	-	0	0	-	-	-	-	-	-	-
Stage 1	17	44	-	10	39	-	-	-	-	-	-	-
Stage 2	177	39	-	24	44	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	103.5	43.4	0	0.4
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	72	-	-	144	111	48	-	-
HCM Lane V/C Ratio	-	-	-	0.868	0.157	0.226	-	-
HCM Control Delay (s)	0	-	-	103.5	43.4	100.7	-	-
HCM Lane LOS	A	-	-	F	E	F	-	-
HCM 95th %tile Q(veh)	0	-	-	5.8	0.5	0.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	142	246	316	2431	2381	80		
Future Volume (veh/h)	142	246	316	2431	2381	80		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	154	267	343	2642	2588	87		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	242	540	1045	4255	2641	822		
Arrive On Green	0.07	0.07	0.27	0.84	0.52	0.52		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	154	267	343	2642	2588	87		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	5.6	0.0	5.7	22.8	64.3	3.6		
Cycle Q Clear(g_c), s	5.6	0.0	5.7	22.8	64.3	3.6		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	242	540	1045	4255	2641	822		
V/C Ratio(X)	0.64	0.49	0.33	0.62	0.98	0.11		
Avail Cap(c_a), veh/h	806	800	1045	4255	2641	822		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.12	0.12	1.00	1.00		
Uniform Delay (d), s/veh	58.4	33.7	35.4	3.6	30.3	15.8		
Incr Delay (d2), s/veh	2.8	0.7	0.0	0.1	13.4	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.8	9.6	4.7	10.3	33.2	1.6		
LnGrp Delay(d),s/veh	61.2	34.4	35.5	3.7	43.7	16.0		
LnGrp LOS	E	C	D	A	D	B		
Approach Vol, veh/h	421			2985	2675			
Approach Delay, s/veh	44.2			7.3	42.8			
Approach LOS	D			A	D			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		113.9		15.1	40.9	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		30.2	* 16	* 67		
Max Q Clear Time (g_c+I1), s		24.8		7.6	7.7	66.3		
Green Ext Time (p_c), s		49.4		1.4	6.5	0.7		

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

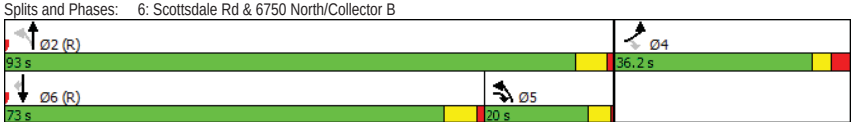
Timing Report, Sorted By Phase
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	36.2	20	73
Maximum Split (%)	72.0%	28.0%	15.5%	56.5%
Minimum Split (s)	36	36.2	8	36.9
Yellow Time (s)	4.9	3	3.5	4.9
All-Red Time (s)	1.1	3	0.5	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	65	28.8	8.8	65
End Time (s)	28.8	65	28.8	8.8
Yield/Force Off (s)	22.8	59	24.8	2.8
Yield/Force Off 170(s)	0.8	40	24.8	110
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	123.2	89	67
Local Yield 170(s)	65	104.2	89	45

Intersection Summary	
Cycle Length	129.2
Control Type	Actuated-Coordinated
Natural Cycle	105
Offset: 65 (50%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



HCM 2010 Signalized Intersection Summary
7: Tatum Blvd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	838	42	425	942	310	94	1113	381	242	674	183
Future Volume (veh/h)	380	838	42	425	942	310	94	1113	381	242	674	183
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	413	911	46	462	1024	337	102	1210	414	263	733	199
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	479	844	43	219	820	367	304	1280	572	283	1579	706
Arrive On Green	0.11	0.25	0.25	0.09	0.23	0.23	0.04	0.36	0.36	0.12	0.45	0.45
Sat Flow, veh/h	3442	3429	173	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	413	470	487	462	1024	337	102	1210	414	263	733	199
Grp Sat Flow(s),veh/h/ln	1721	1770	1832	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.7	32.0	32.0	12.0	30.1	27.0	4.8	43.1	29.4	14.3	18.8	10.4
Cycle Q Clear(g_c), s	11.7	32.0	32.0	12.0	30.1	27.0	4.8	43.1	29.4	14.3	18.8	10.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	479	436	451	219	820	367	304	1280	572	283	1579	706
V/C Ratio(X)	0.86	1.08	1.08	2.11	1.25	0.92	0.34	0.95	0.72	0.93	0.46	0.28
Avail Cap(c_a), veh/h	534	436	451	219	820	367	304	1280	572	283	1579	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.52	0.52	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	49.0	49.0	38.0	49.9	48.8	25.1	40.3	35.9	38.5	25.1	22.8
Incr Delay (d2), s/veh	11.6	66.1	65.4	506.6	117.7	18.9	0.2	15.1	7.7	34.8	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	23.6	24.4	32.8	28.1	13.7	2.3	23.7	14.1	12.1	9.4	4.7
LnGrp Delay(d),s/veh	47.4	115.1	114.4	544.6	167.6	67.7	25.3	55.4	43.6	73.2	26.1	23.8
LnGrp LOS	D	F	F	F	F	E	C	E	D	E	C	C
Approach Vol, veh/h		1370			1823			1726			1195	
Approach Delay, s/veh		94.4			244.7			50.8			36.1	
Approach LOS		F			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	37.1	20.0	54.0	17.0	39.0	9.0	65.0
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	16.0	28.0	16.0	47.0	12.0	32.0	5.0	58.0
Max Q Clear Time (g_c+I1), s	13.7	32.1	16.3	45.1	14.0	34.0	6.8	20.8
Green Ext Time (p_c), s	0.2	0.0	0.0	1.9	0.0	0.0	0.0	35.0

Intersection Summary	
HCM 2010 Ctrl Delay	115.5
HCM 2010 LOS	F

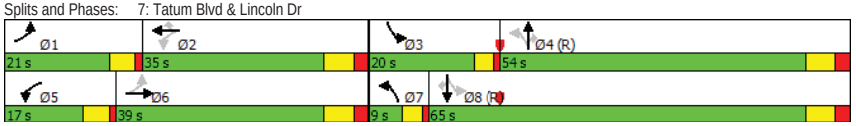
Timing Report, Sorted By Phase
7: Tatum Blvd & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBTL	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	21	35	20	54	17	39	9	65
Maximum Split (%)	16.2%	26.9%	15.4%	41.5%	13.1%	30.0%	6.9%	50.0%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	64	85	120	10	64	81	120	129
End Time (s)	85	120	10	64	81	120	129	64
Yield/Force Off (s)	80	113	6	57	76	113	125	57
Yield/Force Off 170(s)	80	90	6	33	76	90	125	33
Local Start Time (s)	54	75	110	0	54	71	110	119
Local Yield (s)	70	103	126	47	66	103	115	47
Local Yield 170(s)	70	80	126	23	66	80	115	23

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 10 (8%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
8: Invergordon Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1332	159	67	1311	27	268	23	92	27	19	11
Future Volume (veh/h)	5	1332	159	67	1311	27	268	23	92	27	19	11
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	1448	173	73	1425	29	291	25	100	29	21	12
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	1806	214	168	2009	41	455	79	317	202	138	63
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	364	3188	378	310	3547	72	1370	326	1306	513	571	260
Grp Volume(v), veh/h	5	798	823	73	710	744	291	0	125	62	0	0
Grp Sat Flow(s),veh/h/ln	364	1770	1796	310	1770	1850	1370	0	1632	1345	0	0
Q Serve(g_s), s	0.7	24.2	24.9	13.6	19.8	19.8	8.5	0.0	4.3	0.1	0.0	0.0
Cycle Q Clear(g_c), s	20.5	24.2	24.9	38.5	19.8	19.8	12.8	0.0	4.3	4.4	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.04	1.00		0.80	0.47		0.19
Lane Grp Cap(c), veh/h	206	1002	1017	168	1002	1048	455	0	396	404	0	0
V/C Ratio(X)	0.02	0.80	0.81	0.44	0.71	0.71	0.64	0.00	0.32	0.15	0.00	0.00
Avail Cap(c_a), veh/h	206	1002	1017	168	1002	1048	667	0	648	567	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.23	0.23	0.23	0.64	0.64	0.64	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.1	11.6	11.8	28.2	10.7	10.7	24.1	0.0	21.1	20.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.6	1.7	5.2	2.7	2.6	1.5	0.0	0.5	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	12.0	12.6	1.6	10.2	10.7	5.4	0.0	2.0	0.9	0.0	0.0
LnGrp Delay(d),s/veh	18.2	13.2	13.5	33.4	13.4	13.3	25.6	0.0	21.6	20.4	0.0	0.0
LnGrp LOS	B	B	B	C	B	B	C		C	C		
Approach Vol, veh/h		1626			1527			416			62	
Approach Delay, s/veh		13.4			14.3			24.4			20.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		44.5		23.5		44.5		23.5
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		28.0		27.0		28.0		24.0
Max Q Clear Time (g_c+I1), s		40.5		14.8		26.9		6.4
Green Ext Time (p_c), s		0.0		1.7		1.0		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

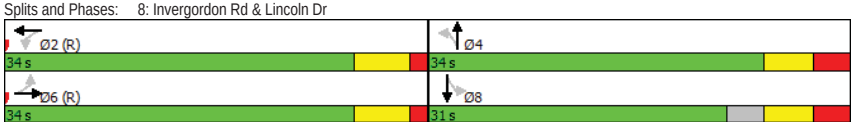
Timing Report, Sorted By Phase
8: Invergordon Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	34	34	34	31
Maximum Split (%)	50.0%	50.0%	50.0%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	25	59	25
End Time (s)	25	59	25	59
Yield/Force Off (s)	19	52	19	52
Yield/Force Off 170(s)	8	35	8	52
Local Start Time (s)	0	34	0	34
Local Yield (s)	28	61	28	61
Local Yield 170(s)	17	44	17	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



HCM 2010 Signalized Intersection Summary
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	1210	19	39	1182	96	13	120	48	60	100	226
Future Volume (veh/h)	342	1210	19	39	1182	96	13	120	48	60	100	226
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	372	1315	21	42	1285	104	14	130	52	65	109	246
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	555	2535	40	146	1388	621	190	166	67	148	359	305
Arrive On Green	0.27	0.71	0.71	0.52	0.52	0.52	0.13	0.13	0.13	0.03	0.19	0.19
Sat Flow, veh/h	1774	3565	57	408	3539	1583	1022	1267	507	1774	1863	1583
Grp Volume(v), veh/h	372	652	684	42	1285	104	14	0	182	65	109	246
Grp Sat Flow(s),veh/h/ln	1774	1770	1853	408	1770	1583	1022	0	1773	1774	1863	1583
Q Serve(g_s), s	18.5	21.9	22.0	10.9	43.7	3.7	1.6	0.0	12.9	4.0	6.5	19.3
Cycle Q Clear(g_c), s	18.5	21.9	22.0	32.9	43.7	3.7	1.6	0.0	12.9	4.0	6.5	19.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	555	1258	1317	146	1388	621	190	0	233	148	359	305
V/C Ratio(X)	0.67	0.52	0.52	0.29	0.93	0.17	0.07	0.00	0.78	0.44	0.30	0.81
Avail Cap(c_a), veh/h	555	1258	1317	146	1388	621	272	0	375	148	509	432
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.31	0.31	0.31	0.88	0.88	0.88	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	8.6	8.6	35.7	29.3	13.5	49.7	0.0	54.7	46.8	45.0	50.1
Incr Delay (d2), s/veh	1.0	0.5	0.5	4.3	10.7	0.5	0.2	0.0	5.6	2.0	0.5	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	10.7	11.2	1.4	23.1	1.7	0.5	0.0	6.7	0.4	3.4	9.1
LnGrp Delay(d),s/veh	40.2	9.1	9.1	40.0	40.0	14.0	49.9	0.0	60.3	48.8	45.4	57.4
LnGrp LOS	D	A	A	D	D	B	D		E	D	D	E
Approach Vol, veh/h		1708			1431			196			420	
Approach Delay, s/veh		15.9			38.2			59.6			53.0	
Approach LOS		B			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	41.4	57.0	8.0	23.6		98.4		31.6
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	27.0	* 51	4.0	27.5		82.0		35.5
Max Q Clear Time (g_c+I1), s	20.5	45.7	6.0	14.9		24.0		21.3
Green Ext Time (p_c), s	4.6	3.9	0.0	2.2		16.3		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

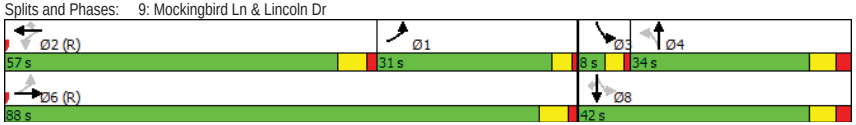
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	31	57	8	34	88	42
Maximum Split (%)	23.8%	43.8%	6.2%	26.2%	67.7%	32.3%
Minimum Split (s)	9	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	73	16	104	112	16	104
End Time (s)	104	73	112	16	104	16
Yield/Force Off (s)	100	67	108	9.5	98	9.5
Yield/Force Off 170(s)	100	53	108	119.5	84	119.5
Local Start Time (s)	57	0	88	96	0	88
Local Yield (s)	84	51	92	123.5	82	123.5
Local Yield 170(s)	84	37	92	103.5	68	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 16 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	647	5	5	1053	50	5	0	5	31	0	183
Future Volume (veh/h)	174	647	5	5	1053	50	5	0	5	31	0	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	189	703	5	5	1145	54	5	0	5	34	0	199
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	2738	19	556	2402	1075	127	13	99	263	0	227
Arrive On Green	0.10	1.00	1.00	0.68	0.68	0.68	0.14	0.00	0.14	0.14	0.00	0.14
Sat Flow, veh/h	1774	3602	26	738	3539	1583	597	92	688	1448	0	1583
Grp Volume(v), veh/h	189	345	363	5	1145	54	10	0	0	34	0	199
Grp Sat Flow(s),veh/h/ln	1774	1770	1858	738	1770	1583	1377	0	0	1448	0	1583
Q Serve(g_s), s	4.3	0.0	0.0	0.3	20.0	1.5	0.0	0.0	0.0	0.0	0.0	16.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	0.3	20.0	1.5	2.2	0.0	0.0	2.2	0.0	16.0
Prop In Lane	1.00		0.01	1.00		1.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	389	1345	1413	556	2402	1075	239	0	0	263	0	227
V/C Ratio(X)	0.49	0.26	0.26	0.01	0.48	0.05	0.04	0.00	0.00	0.13	0.00	0.87
Avail Cap(c_a), veh/h	518	1345	1413	556	2402	1075	357	0	0	386	0	365
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.75	0.75	0.75	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	6.8	9.9	6.9	47.9	0.0	0.0	48.6	0.0	54.5
Incr Delay (d2), s/veh	0.8	0.4	0.4	0.0	0.5	0.1	0.1	0.0	0.0	0.2	0.0	12.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.1	0.1	0.1	9.9	0.7	0.3	0.0	0.0	1.1	0.0	7.8
LnGrp Delay(d),s/veh	8.2	0.4	0.4	6.8	10.4	7.0	48.0	0.0	0.0	48.8	0.0	67.4
LnGrp LOS	A	A	A	A	B	A	D			D		E
Approach Vol, veh/h		897			1204			10			233	
Approach Delay, s/veh		2.0			10.3			48.0			64.7	
Approach LOS		A			B			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		24.7		105.3		24.7	10.6	94.7
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		30.0		87.5		30.0	16.0	67.5
Max Q Clear Time (g_c+I1), s		4.2		2.0		18.0	6.3	22.0
Green Ext Time (p_c), s		0.9		24.8		0.7	0.3	20.8

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

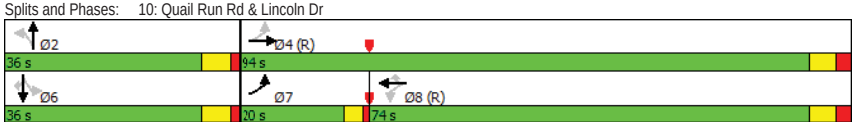
Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	36	94	36	20	74
Maximum Split (%)	27.7%	72.3%	27.7%	15.4%	56.9%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	74	110	74	110	0
End Time (s)	110	74	110	0	74
Yield/Force Off (s)	104	67.5	104	126	67.5
Yield/Force Off 170(s)	84	53.5	84	126	53.5
Local Start Time (s)	74	110	74	110	0
Local Yield (s)	104	67.5	104	126	67.5
Local Yield 170(s)	84	53.5	84	126	53.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	698	49	417	45	59	69	390	1958	39	72	1864	555
Future Volume (veh/h)	698	49	417	45	59	69	390	1958	39	72	1864	555
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	797	0	453	49	64	75	424	2128	42	78	2026	603
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	591	0	488	118	118	105	775	2182	43	252	1737	646
Arrive On Green	0.17	0.00	0.17	0.07	0.07	0.07	0.45	0.85	0.85	0.14	0.34	0.34
Sat Flow, veh/h	3548	0	1583	1774	1770	1583	3442	5134	101	1774	5085	1583
Grp Volume(v), veh/h	797	0	453	49	64	75	424	1404	766	78	2026	603
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1583	1721	1695	1845	1774	1695	1583
Q Serve(g_s), s	20.0	0.0	16.2	3.2	4.2	5.6	10.8	43.4	44.0	4.7	41.0	41.0
Cycle Q Clear(g_c), s	20.0	0.0	16.2	3.2	4.2	5.6	10.8	43.4	44.0	4.7	41.0	41.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	591	0	488	118	118	105	775	1441	784	252	1737	646
V/C Ratio(X)	1.35	0.00	0.93	0.42	0.54	0.71	0.55	0.97	0.98	0.31	1.17	0.93
Avail Cap(c_a), veh/h	591	0	488	207	206	185	775	1441	784	252	1737	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.00	0.98	1.00	1.00	1.00	0.32	0.32	0.32	0.57	0.57	0.57
Uniform Delay (d), s/veh	50.0	0.0	40.2	53.8	54.2	54.9	28.5	8.4	8.5	46.2	39.5	33.1
Incr Delay (d2), s/veh	167.3	0.0	23.7	2.3	3.9	8.6	0.3	8.6	13.4	0.4	78.7	14.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.5	0.0	10.2	1.6	2.2	2.7	5.1	20.1	23.3	2.3	31.8	22.6
LnGrp Delay(d),s/veh	217.3	0.0	63.9	56.1	58.1	63.5	28.8	17.1	21.9	46.6	118.2	48.0
LnGrp LOS	F		E	E	E	E	C	B	C	D	F	D
Approach Vol, veh/h		1250			188			2594			2707	
Approach Delay, s/veh		161.7			59.7			20.4			100.5	
Approach LOS		F			E			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.0	57.0		15.0	31.0	47.0		27.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	11.0	51.0		14.0	21.0	41.0		20.0
Max Q Clear Time (g_c+I1), s	6.7	46.0		7.6	12.8	43.0		22.0
Green Ext Time (p_c), s	0.8	4.5		0.4	1.2	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.9
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

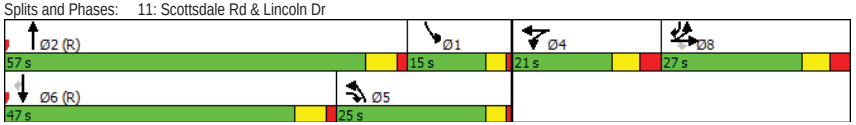
Timing Report, Sorted By Phase
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	57	21	25	47	27
Maximum Split (%)	12.5%	47.5%	17.5%	20.8%	39.2%	22.5%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	4.5	20	5	4.5	20	8
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	12	75	27	2	75	48
End Time (s)	27	12	48	27	2	75
Yield/Force Off (s)	23	6	41	23	116	68
Yield/Force Off 170(s)	23	111	15	23	101	42
Local Start Time (s)	57	0	72	47	0	93
Local Yield (s)	68	51	86	68	41	113
Local Yield 170(s)	68	36	60	68	26	87

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 75 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



HCM 2010 AWSC
12: Mockingbird Ln & McDonald Dr

11/5/2015

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	96	218	4	0	24	267	82	0	14	12	14
Future Vol, veh/h	0	96	218	4	0	24	267	82	0	14	12	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	104	237	4	0	26	290	89	0	15	13	15
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	11.7	15.8	10.5
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	100%	0%	100%	0%	100%	0%
Vol Thru, %	30%	0%	98%	0%	77%	0%	8%
Vol Right, %	35%	0%	2%	0%	23%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	96	222	24	349	59	128
LT Vol	14	96	0	24	0	59	0
Through Vol	12	0	218	0	267	0	10
RT Vol	14	0	4	0	82	0	118
Lane Flow Rate	43	104	241	26	379	64	139
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.082	0.184	0.39	0.046	0.591	0.127	0.23
Departure Headway (Hd)	6.819	6.336	5.817	6.285	5.613	7.102	5.94
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	524	567	618	570	641	505	604
Service Time	4.88	4.074	3.554	4.022	3.349	4.848	3.685
HCM Lane V/C Ratio	0.082	0.183	0.39	0.046	0.591	0.127	0.23
HCM Control Delay	10.5	10.5	12.2	9.3	16.2	10.9	10.5
HCM Lane LOS	B	B	B	A	C	B	B
HCM 95th-tile Q	0.3	0.7	1.8	0.1	3.9	0.4	0.9

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	59	10	118
Future Vol, veh/h	0	59	10	118
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	64	11	128
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.6
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	225	38	248	229	278	38	2090	254	393	1878	106
Future Volume (veh/h)	92	225	38	248	229	278	38	2090	254	393	1878	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	245	41	270	249	302	41	2272	276	427	2041	115
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	324	53	264	366	510	388	2034	633	752	2034	633
Arrive On Green	0.10	0.11	0.11	0.10	0.10	0.10	0.22	0.40	0.40	0.22	0.40	0.40
Sat Flow, veh/h	1774	3042	502	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	100	141	145	270	249	302	41	2272	276	427	2041	115
Grp Sat Flow(s),veh/h/ln	1774	1770	1774	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	9.3	9.5	12.0	8.1	0.0	2.2	48.0	15.2	13.3	48.0	5.6
Cycle Q Clear(g_c), s	0.0	9.3	9.5	12.0	8.1	0.0	2.2	48.0	15.2	13.3	48.0	5.6
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	189	189	264	366	510	388	2034	633	752	2034	633
V/C Ratio(X)	0.37	0.75	0.77	1.02	0.68	0.59	0.11	1.12	0.44	0.57	1.00	0.18
Avail Cap(c_a), veh/h	273	354	355	264	708	663	388	2034	633	752	2034	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09
Uniform Delay (d), s/veh	47.6	52.0	52.2	51.9	51.9	34.1	37.5	36.0	26.2	41.8	36.0	23.3
Incr Delay (d2), s/veh	0.8	5.8	6.4	61.8	2.2	1.1	0.1	60.0	2.2	0.1	6.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.9	5.0	12.9	4.1	8.5	1.1	33.7	7.0	6.3	23.7	2.5
LnGrp Delay(d),s/veh	48.4	57.9	58.5	113.8	54.1	35.2	37.6	96.0	28.3	41.9	42.8	23.3
LnGrp LOS	D	E	E	F	D	D	D	F	C	D	F	C
Approach Vol, veh/h		386			821			2589			2583	
Approach Delay, s/veh		55.7			66.8			87.9			41.8	
Approach LOS		E			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.2	54.0	16.0	19.8	30.2	54.0	16.4	19.4
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	15.0	48.0	* 12	24.0	15.0	48.0	* 12	24.0
Max Q Clear Time (g_c+I1), s	15.3	50.0	14.0	11.5	4.2	50.0	2.0	10.1
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	1.3	0.0	0.8	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	64.6
HCM 2010 LOS	E

Notes

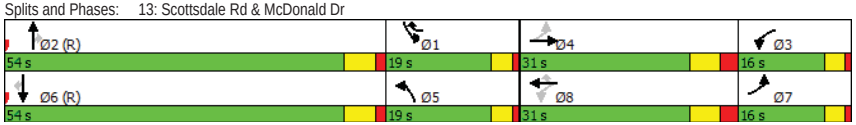
User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	19	54	16	31	19	54	16	31
Maximum Split (%)	15.8%	45.0%	13.3%	25.8%	15.8%	45.0%	13.3%	25.8%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	30	14	103	84	30	14	103
End Time (s)	103	84	30	14	103	84	30	14
Yield/Force Off (s)	99	78	26	7	99	78	26	7
Yield/Force Off 170(s)	99	62	26	103	99	62	26	103
Local Start Time (s)	54	0	104	73	54	0	104	73
Local Yield (s)	69	48	116	97	69	48	116	97
Local Yield 170(s)	69	32	116	73	69	32	116	73

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	125

Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



Intersection	
Intersection Delay, s/veh	5.8
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	263	287	83
Demand Flow Rate, veh/h	268	293	85
Vehicles Circulating, veh/h	43	43	217
Vehicles Exiting, veh/h	293	259	94
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.7	6.0	4.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	268	293	85
Cap Entry Lane, veh/h	1082	1082	910
Entry HV Adj Factor	0.980	0.980	0.976
Flow Entry, veh/h	263	287	83
Cap Entry, veh/h	1061	1061	888
V/C Ratio	0.248	0.271	0.093
Control Delay, s/veh	5.7	6.0	4.9
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	222	12	29	258	6	14
Future Vol, veh/h	222	12	29	258	6	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	241	13	32	280	7	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	254	0	591	248
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	343	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1311	-	470	791
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	719	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1311	-	459	791
Mov Cap-2 Maneuver	-	-	-	-	547	-
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	698	-	-	1311	-
HCM Lane V/C Ratio	0.031	-	-	0.024	-
HCM Control Delay (s)	10.3	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	356	45	110	347	43	103
Future Vol, veh/h	356	45	110	347	43	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	387	49	120	377	47	112

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	839	411
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	428	-
Critical Hdwy	-	-	4.12	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.218	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1124	-	320	640
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1124	-	286	640
Mov Cap-2 Maneuver	-	-	-	-	286	-
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	469	-	-	1124	-
HCM Lane V/C Ratio	0.338	-	-	0.106	-
HCM Control Delay (s)	16.6	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.5	-	-	0.4	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	13	5	0	2603	1951	17
Future Vol, veh/h	13	5	0	2603	1951	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	5	0	2829	2121	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3253	1060	2121	0	-	0
Stage 1	2121	-	-	-	-	-
Stage 2	1132	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	19	189	109	-	-	-
Stage 1	47	-	-	-	-	-
Stage 2	242	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	19	189	109	-	-	-
Mov Cap-2 Maneuver	19	-	-	-	-	-
Stage 1	47	-	-	-	-	-
Stage 2	242	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	109	-	189	-	-
HCM Lane V/C Ratio	-	-	0.029	-	-
HCM Control Delay (s)	0	-	24.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	28	0	0	49	37	48
Future Vol, veh/h	28	0	0	49	37	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	0	53	40	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	119	66	92	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	877	998	1503	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	877	998	1503	-	-	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	877	-	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	22	11	37	11	6	31
Future Vol, veh/h	22	11	37	11	6	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	12	40	12	7	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	93	46	0	0	52	0
Stage 1	46	-	-	-	-	-
Stage 2	47	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	907	1023	-	-	1554	-
Stage 1	976	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	902	1023	-	-	1554	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	939	1554	-
HCM Lane V/C Ratio	-	-	0.038	0.004	-
HCM Control Delay (s)	-	-	9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	63	23	25	54	24	30
Future Vol, veh/h	63	23	25	54	24	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	25	27	59	26	33

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	142	57	0	0	86	0
Stage 1	57	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	851	1009	-	-	1510	-
Stage 1	966	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	836	1009	-	-	1510	-
Mov Cap-2 Maneuver	836	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	3.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	876	1510	-
HCM Lane V/C Ratio	-	-	0.107	0.017	-
HCM Control Delay (s)	-	-	9.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	53	10	61	56	33	70
Future Vol, veh/h	53	10	61	56	33	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	11	66	61	36	76

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	245	97	0	0	127	0
Stage 1	97	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	743	959	-	-	1459	-
Stage 1	927	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	724	959	-	-	1459	-
Mov Cap-2 Maneuver	724	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	2.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	753	1459	-
HCM Lane V/C Ratio	-	-	0.091	0.025	-
HCM Control Delay (s)	-	-	10.3	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	61	27	5	375	255	57
Future Vol, veh/h	61	27	5	375	255	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	29	5	408	277	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	413	0	-	0	371	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	162	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1146	-	-	-	630	831
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1146	-	-	-	593	831
Mov Cap-2 Maneuver	-	-	-	-	645	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	816	-

Approach	EB	WB	SB
HCM Control Delay, s	5.8	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1146	-	-	-	672
HCM Lane V/C Ratio	0.058	-	-	-	0.505
HCM Control Delay (s)	8.3	0	-	-	15.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	2.9

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	121	1	28	115	2	36
Future Vol, veh/h	121	1	28	115	2	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	1	30	125	2	39

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	136	93	0	0	155	0
Stage 1	93	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	857	964	-	-	1425	-
Stage 1	931	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	856	964	-	-	1425	-
Mov Cap-2 Maneuver	856	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	857	1425	-
HCM Lane V/C Ratio	-	-	0.155	0.002	-
HCM Control Delay (s)	-	-	10	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	20	25	208	171
Demand Flow Rate, veh/h	20	26	212	174
Vehicles Circulating, veh/h	199	192	0	60
Vehicles Exiting, veh/h	35	20	219	157
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.1	4.3	4.9	4.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	20	26	212	174
Cap Entry Lane, veh/h	926	933	1130	1064
Entry HV Adj Factor	1.000	0.962	0.981	0.980
Flow Entry, veh/h	20	25	208	171
Cap Entry, veh/h	926	897	1108	1043
V/C Ratio	0.022	0.028	0.188	0.164
Control Delay, s/veh	4.1	4.3	4.9	4.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	16	0	191	33	0	198
Future Vol, veh/h	16	0	191	33	0	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	0	208	36	0	215

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	441	226	0	0	243	0
Stage 1	226	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	574	813	-	-	1323	-
Stage 1	812	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	574	813	-	-	1323	-
Mov Cap-2 Maneuver	574	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	821	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	574	1323	-
HCM Lane V/C Ratio	-	-	0.03	-	-
HCM Control Delay (s)	-	-	11.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

APPENDIX L

2033 MITIGATED PEAK HOUR ANALYSIS AND QUEUING

CivTech

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	7	323	0	36	4	0	0	147	13	31
Future Vol, veh/h	0	4	7	323	0	36	4	0	0	147	13	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	8	351	0	39	4	0	0	160	14	34
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	11.2	9.4	10.4
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	90%	3%
Vol Thru, %	0%	30%	0%	2%	10%	91%
Vol Right, %	0%	70%	0%	98%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	44	4	330	40	35
LT Vol	147	0	4	0	36	1
Through Vol	0	13	0	7	4	32
RT Vol	0	31	0	323	0	2
Lane Flow Rate	160	48	4	359	43	38
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.268	0.067	0.007	0.458	0.071	0.061
Departure Headway (Hd)	6.039	5.039	5.79	4.598	5.844	5.788
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	591	705	618	782	610	613
Service Time	3.812	2.811	3.53	2.338	3.914	3.877
HCM Lane V/C Ratio	0.271	0.068	0.006	0.459	0.07	0.062
HCM Control Delay	11	8.2	8.6	11.2	9.4	9.3
HCM Lane LOS	B	A	A	B	A	A
HCM 95th-tile Q	1.1	0.2	0	2.4	0.2	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	32	2
Future Vol, veh/h	0	1	32	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	35	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.3
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	167	47	233	106	76	387
Future Vol, veh/h	167	47	233	106	76	387
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	182	51	253	115	83	421

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	897	311	0	0	368	0
Stage 1	311	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	310	729	-	-	1191	-
Stage 1	743	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	288	729	-	-	1191	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	517	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.7	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	402	729	1191	-
HCM Lane V/C Ratio	-	-	0.452	0.07	0.069	-
HCM Control Delay (s)	-	-	21.1	10.3	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0.2	0.2	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	5	212	2	36	204	5	1	0	47	7	0	5
Future Vol, veh/h	5	212	2	36	204	5	1	0	47	7	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	230	2	39	222	5	1	0	51	8	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	227	0	0	233	0	0	547	547	232	571	546	224
Stage 1	-	-	-	-	-	-	242	242	-	303	303	-
Stage 2	-	-	-	-	-	-	305	305	-	268	243	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1341	-	-	1335	-	-	448	445	807	432	445	815
Stage 1	-	-	-	-	-	-	762	705	-	706	664	-
Stage 2	-	-	-	-	-	-	705	662	-	738	705	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1341	-	-	1335	-	-	434	430	807	395	430	815
Mov Cap-2 Maneuver	-	-	-	-	-	-	434	430	-	395	430	-
Stage 1	-	-	-	-	-	-	759	702	-	703	645	-
Stage 2	-	-	-	-	-	-	680	643	-	689	702	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.1	9.9	12.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	793	1341	-	-	1335	-	-	503
HCM Lane V/C Ratio	0.066	0.004	-	-	0.029	-	-	0.026
HCM Control Delay (s)	9.9	7.7	-	-	7.8	-	-	12.3
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

Queues
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	75	245	665	202	168	42	1445	465	176	1837	49
v/c Ratio	0.43	0.74	0.91	0.41	0.25	0.21	0.64	0.40	0.78	0.78	0.06
Control Delay	62.6	58.3	63.7	40.0	7.3	31.5	22.6	2.7	59.9	32.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	58.3	63.7	40.0	7.3	31.5	22.6	2.7	59.9	32.0	0.2
Queue Length 50th (ft)	29	82	253	127	21	15	424	49	65	475	0
Queue Length 95th (ft)	54	125	#373	207	59	41	468	74	#155	545	0
Internal Link Dist (ft)		230		920			350			920	
Turn Bay Length (ft)	100		265		265	235		210	210		250
Base Capacity (vph)	400	402	745	488	672	243	2275	1170	265	2343	788
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.61	0.89	0.41	0.25	0.17	0.64	0.40	0.66	0.78	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	161	64	612	186	155	39	1329	428	162	1690	45
Future Volume (veh/h)	69	161	64	612	186	155	39	1329	428	162	1690	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	75	175	70	665	202	168	42	1445	465	176	1837	49
Adj No. of Lanes	2	2	0	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	223	86	712	533	604	247	2076	974	297	2076	647
Arrive On Green	0.04	0.09	0.09	0.21	0.29	0.29	0.19	0.82	0.82	0.10	0.41	0.41
Sat Flow, veh/h	3442	2499	963	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	75	122	123	665	202	168	42	1445	465	176	1837	49
Grp Sat Flow(s),veh/h/ln	1721	1770	1693	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	2.6	8.1	8.6	22.8	10.4	1.0	0.0	14.5	0.0	2.4	40.2	1.8
Cycle Q Clear(g_c), s	2.6	8.1	8.6	22.8	10.4	1.0	0.0	14.5	0.0	2.4	40.2	1.8
Prop In Lane	1.00		0.57	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	158	151	712	533	604	247	2076	974	297	2076	647
V/C Ratio(X)	0.62	0.77	0.82	0.93	0.38	0.28	0.17	0.70	0.48	0.59	0.88	0.08
Avail Cap(c_a), veh/h	402	192	183	717	533	604	255	2076	974	305	2076	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	53.5	53.7	46.8	34.3	14.4	42.0	7.8	3.0	42.7	32.9	13.9
Incr Delay (d2), s/veh	1.9	11.6	17.2	18.9	0.2	0.1	0.1	2.0	1.7	1.9	6.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.5	4.7	12.7	5.4	2.8	1.1	6.8	2.5	5.5	19.9	0.8
LnGrp Delay(d),s/veh	59.0	65.0	70.9	65.6	34.5	14.5	42.2	9.8	4.7	44.6	38.8	14.1
LnGrp LOS	E	E	E	E	C	B	D	A	A	D	D	B
Approach Vol, veh/h		320			1035			1952			2062	
Approach Delay, s/veh		65.9			51.2			9.3			38.8	
Approach LOS		E			D			A			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	55.0	31.8	17.7	15.5	55.0	8.2	41.3
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 12	49.0	* 25	* 13	* 12	49.0	14.0	* 24
Max Q Clear Time (g_c+I1), s	4.4	16.5	24.8	10.6	2.0	42.2	4.6	12.4
Green Ext Time (p_c), s	0.1	2.4	0.0	0.1	0.1	2.5	0.0	1.7

Intersection Summary

HCM 2010 Ctrl Delay	32.1
HCM 2010 LOS	C

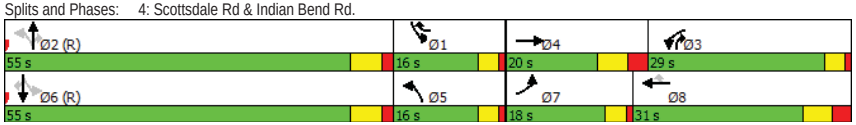
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	16	55	29	20	16	55	18	31
Maximum Split (%)	13.3%	45.8%	24.2%	16.7%	13.3%	45.8%	15.0%	25.8%
Minimum Split (s)	9.4	29.4	8.5	13	8.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	85	30	1	101	85	30	101	119
End Time (s)	101	85	30	1	101	85	119	30
Yield/Force Off (s)	97	79	26	114	97	79	115	23
Yield/Force Off 170(s)	97	63	26	83	97	63	115	112
Local Start Time (s)	55	0	91	71	55	0	71	89
Local Yield (s)	67	49	116	84	67	49	85	113
Local Yield 170(s)	67	33	116	53	67	33	85	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	62	5	0	9	0	1765	5	5	2212	28
Future Vol, veh/h	0	0	62	5	0	9	0	1765	5	5	2212	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	150	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	67	5	0	10	0	1918	5	5	2404	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3182	4339	1202	2894	4336	962	2404	0	0	1924	0	0
Stage 1	2415	2415	-	1921	1921	-	-	-	-	-	-	-
Stage 2	767	1924	-	973	2415	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	11	2	152	17	2	220	78	-	-	137	-	-
Stage 1	19	63	-	44	113	-	-	-	-	-	-	-
Stage 2	328	113	-	244	63	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	10	2	152	9	2	220	78	-	-	137	-	-
Mov Cap-2 Maneuver	10	2	-	9	2	-	-	-	-	-	-	-
Stage 1	19	61	-	44	113	-	-	-	-	-	-	-
Stage 2	313	113	-	131	61	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46.3	$ 314.3	0	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	78	-	-	152	23	137	-	-
HCM Lane V/C Ratio	-	-	-	0.443	0.662	0.04	-	-
HCM Control Delay (s)	0	-	-	46.3	$ 314.3	32.4	-	-
HCM Lane LOS	A	-	-	E	F	D	-	-
HCM 95th %tile Q(veh)	0	-	-	2	2	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	38	47	213	1843	2520	132
v/c Ratio	0.20	0.15	0.37	0.40	0.69	0.11
Control Delay	55.9	36.5	30.6	3.0	17.1	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	36.5	30.6	3.0	17.1	7.9
Queue Length 50th (ft)	14	27	42	91	467	38
Queue Length 95th (ft)	32	60	m61	m155	513	m58
Internal Link Dist (ft)	480			1250	370	
Turn Bay Length (ft)	200		100			150
Base Capacity (vph)	600	318	582	4591	3641	1152
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.15	0.37	0.40	0.69	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	35	43	196	1696	2318	121		
Future Volume (veh/h)	35	43	196	1696	2318	121		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	38	47	213	1843	2520	132		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	135	462	1025	4377	2839	884		
Arrive On Green	0.04	0.04	0.34	1.00	0.74	0.74		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	38	47	213	1843	2520	132		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	1.3	0.0	0.0	0.0	44.9	2.9		
Cycle Q Clear(g_c), s	1.3	0.0	0.0	0.0	44.9	2.9		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	135	462	1025	4377	2839	884		
V/C Ratio(X)	0.28	0.10	0.21	0.42	0.89	0.15		
Avail Cap(c_a), veh/h	602	677	1025	4377	2839	884		
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.33	1.33		
Upstream Filter(I)	1.00	1.00	0.65	0.65	1.00	1.00		
Uniform Delay (d), s/veh	56.0	31.0	28.1	0.0	12.6	7.2		
Incr Delay (d2), s/veh	1.1	0.1	0.1	0.2	4.6	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	1.6	2.3	0.1	21.4	1.3		
LnGrp Delay(d),s/veh	57.1	31.1	28.1	0.2	17.2	7.6		
LnGrp LOS	E	C	C	A	B	A		
Approach Vol, veh/h	85			2056	2652			
Approach Delay, s/veh	42.7			3.1	16.7			
Approach LOS	D			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		109.3		10.7	36.3	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		21.0	* 16	* 67		
Max Q Clear Time (g_c+I1), s		2.0		3.3	2.0	46.9		
Green Ext Time (p_c), s		31.0		0.2	10.9	17.8		
Intersection Summary								
HCM 2010 Ctrl Delay			11.3					
HCM 2010 LOS			B					
Notes								

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Timing Report, Sorted By Phase
6: Scottsdale Rd & 6750 North/Collector B

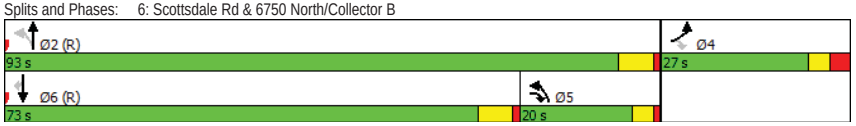
11/5/2015

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	27	20	73
Maximum Split (%)	77.5%	22.5%	16.7%	60.8%
Minimum Split (s)	36	36	8	37
Yellow Time (s)	4.9	3	3	4.9
All-Red Time (s)	1.1	3	1	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	93	73	0
End Time (s)	93	0	93	73
Yield/Force Off (s)	87	114	89	67
Yield/Force Off 170(s)	65	95	89	45
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	114	89	67
Local Yield 170(s)	65	95	89	45

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	95

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



Queues
7: Tatum Blvd & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	195	982	332	847	116	55	634	470	358	1075	461
v/c Ratio	0.70	1.04	1.33	0.81	0.20	0.33	0.64	0.75	0.82	0.71	0.54
Control Delay	71.8	85.4	202.8	49.8	3.7	25.5	45.8	27.7	38.2	34.2	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.8	85.4	202.8	49.8	3.7	25.5	45.8	27.7	38.2	34.2	11.4
Queue Length 50th (ft)	83	~466	~311	351	0	23	248	167	184	395	88
Queue Length 95th (ft)	124	#603	#507	436	28	47	336	#362	281	478	191
Internal Link Dist (ft)		1135		9775			1001			1039	
Turn Bay Length (ft)	300		125		150	175		310	200		300
Base Capacity (vph)	316	946	250	1046	568	167	988	629	499	1513	853
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	1.04	1.33	0.81	0.20	0.33	0.64	0.75	0.72	0.71	0.54

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
7: Tatum Blvd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	832	72	305	779	107	51	583	432	329	989	424
Future Volume (veh/h)	179	832	72	305	779	107	51	583	432	329	989	424
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	195	904	78	332	847	116	55	634	470	358	1075	461
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	888	77	246	1081	483	164	1036	464	398	1470	658
Arrive On Green	0.07	0.27	0.27	0.11	0.31	0.31	0.03	0.29	0.29	0.15	0.42	0.42
Sat Flow, veh/h	3442	3298	285	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	195	485	497	332	847	116	55	634	470	358	1075	461
Grp Sat Flow(s),veh/h/ln	1721	1770	1813	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.2	35.0	35.0	14.0	28.4	7.1	2.8	20.1	38.1	17.7	33.2	31.2
Cycle Q Clear(g_c), s	7.2	35.0	35.0	14.0	28.4	7.1	2.8	20.1	38.1	17.7	33.2	31.2
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	476	488	246	1081	483	164	1036	464	398	1470	658
V/C Ratio(X)	0.79	1.02	1.02	1.35	0.78	0.24	0.34	0.61	1.01	0.90	0.73	0.70
Avail Cap(c_a), veh/h	318	476	488	246	1081	483	164	1036	464	508	1470	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	47.5	47.5	38.6	41.2	33.8	32.1	39.6	46.0	28.0	31.9	31.3
Incr Delay (d2), s/veh	7.4	45.9	45.4	177.8	5.0	1.0	0.4	2.7	45.3	14.1	3.2	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	23.1	23.6	21.0	14.6	3.3	1.4	10.2	22.4	10.1	16.8	14.7
LnGrp Delay(d),s/veh	66.8	93.4	92.9	216.4	46.2	34.9	32.5	42.3	91.3	42.1	35.2	37.5
LnGrp LOS	E	F	F	F	D	C	C	D	F	D	D	D
Approach Vol, veh/h		1177			1295			1159			1894	
Approach Delay, s/veh		88.8			88.8			61.7			37.0	
Approach LOS		F			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	46.7	23.9	45.1	19.0	42.0	8.0	61.0
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	12.0	37.0	28.0	30.0	14.0	35.0	4.0	54.0
Max Q Clear Time (g_c+I1), s	9.2	30.4	19.7	40.1	16.0	37.0	4.8	35.2
Green Ext Time (p_c), s	0.1	6.3	0.2	0.0	0.0	0.0	0.0	18.2

Intersection Summary	
HCM 2010 Ctrl Delay	65.4
HCM 2010 LOS	E

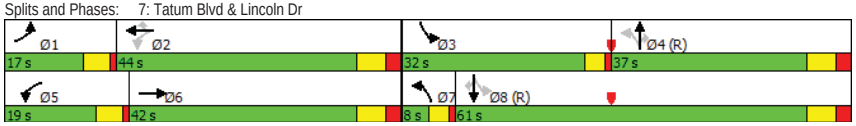
Timing Report, Sorted By Phase
7: Tatum Blvd & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBT	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	17	44	32	37	19	42	8	61
Maximum Split (%)	13.1%	33.8%	24.6%	28.5%	14.6%	32.3%	6.2%	46.9%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	101	15	47	84	103	15	23
End Time (s)	101	15	47	84	103	15	23	84
Yield/Force Off (s)	96	8	43	77	98	8	19	77
Yield/Force Off 170(s)	96	115	43	53	98	115	19	53
Local Start Time (s)	37	54	98	0	37	56	98	106
Local Yield (s)	49	91	126	30	51	91	102	30
Local Yield 170(s)	49	68	126	6	51	68	102	6

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 47 (36%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



Queues
8: Invergordon Rd & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	12	1489	65	1204	123	115	40
v/c Ratio	0.05	0.62	0.39	0.49	0.50	0.37	0.16
Control Delay	6.6	9.2	18.0	7.7	31.8	22.0	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	9.2	18.0	7.7	31.8	22.0	21.5
Queue Length 50th (ft)	2	169	12	122	48	33	13
Queue Length 95th (ft)	9	299	#69	213	87	69	34
Internal Link Dist (ft)		9775		2635		481	449
Turn Bay Length (ft)	85		85		110		
Base Capacity (vph)	258	2415	165	2456	480	579	498
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.62	0.39	0.49	0.26	0.20	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
8: Invergordon Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1154	216	60	1085	23	113	4	102	20	12	5
Future Volume (veh/h)	11	1154	216	60	1085	23	113	4	102	20	12	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	12	1254	235	65	1179	25	123	4	111	22	13	5
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	1975	367	252	2348	50	323	8	225	146	75	20
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	463	2981	554	352	3544	75	1389	55	1536	438	516	136
Grp Volume(v), veh/h	12	740	749	65	589	615	123	0	115	40	0	0
Grp Sat Flow(s),veh/h/ln	463	1770	1765	352	1770	1849	1389	0	1592	1090	0	0
Q Serve(g_s), s	0.9	16.5	16.9	9.0	11.4	11.4	0.3	0.0	4.5	0.1	0.0	0.0
Cycle Q Clear(g_c), s	12.4	16.5	16.9	25.9	11.4	11.4	4.9	0.0	4.5	4.6	0.0	0.0
Prop In Lane	1.00		0.31	1.00		0.04	1.00		0.97	0.55		0.12
Lane Grp Cap(c), veh/h	334	1172	1169	252	1172	1225	323	0	233	241	0	0
V/C Ratio(X)	0.04	0.63	0.64	0.26	0.50	0.50	0.38	0.00	0.49	0.17	0.00	0.00
Avail Cap(c_a), veh/h	334	1172	1169	252	1172	1225	610	0	562	543	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.27	0.27	0.27	0.77	0.77	0.77	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.9	6.7	6.7	14.3	5.8	5.8	26.8	0.0	26.7	25.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.7	1.9	1.2	1.1	0.7	0.0	1.6	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	8.0	8.4	1.0	5.8	6.0	2.2	0.0	2.1	0.7	0.0	0.0
LnGrp Delay(d),s/veh	9.0	7.4	7.5	16.2	7.0	6.9	27.6	0.0	28.3	25.7	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C		C	C		
Approach Vol, veh/h		1501			1269			238			40	
Approach Delay, s/veh		7.4			7.4			27.9			25.7	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.1		16.9		51.1		16.9
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		31.0		24.0		31.0		24.0
Max Q Clear Time (g_c+I1), s		27.9		6.9		18.9		6.6
Green Ext Time (p_c), s		2.9		1.1		11.0		1.1

Intersection Summary

HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A

Timing Report, Sorted By Phase
8: Invergordon Rd & Lincoln Dr

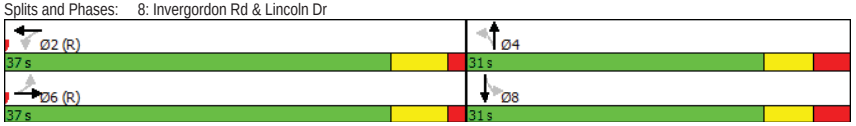
11/5/2015

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	37	31	37	31
Maximum Split (%)	54.4%	45.6%	54.4%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	28	59	28
End Time (s)	28	59	28	59
Yield/Force Off (s)	22	52	22	52
Yield/Force Off 170(s)	11	35	11	52
Local Start Time (s)	0	37	0	37
Local Yield (s)	31	61	31	61
Local Yield 170(s)	20	44	20	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



Queues
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	292	1340	29	1116	20	104	107	132	365
v/c Ratio	0.71	0.55	0.20	0.59	0.18	0.59	0.37	0.33	0.67
Control Delay	37.2	11.8	16.4	15.2	56.5	57.5	42.9	44.2	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	11.8	16.4	15.2	56.5	57.5	42.9	44.2	18.4
Queue Length 50th (ft)	78	268	8	155	16	67	74	95	71
Queue Length 95th (ft)	#199	405	m15	179	41	124	116	142	167
Internal Link Dist (ft)		2635		1220		2560		2560	
Turn Bay Length (ft)	150		100		100		135		150
Base Capacity (vph)	411	2439	146	1899	294	429	321	738	788
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.55	0.20	0.59	0.07	0.24	0.33	0.18	0.46

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	1196	37	27	1003	24	18	60	36	98	121	336
Future Volume (veh/h)	269	1196	37	27	1003	24	18	60	36	98	121	336
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	292	1300	40	29	1090	26	20	65	39	107	132	365
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	542	2262	70	114	1250	30	203	179	108	311	482	410
Arrive On Green	0.25	0.65	0.65	0.71	0.71	0.71	0.16	0.16	0.16	0.06	0.26	0.26
Sat Flow, veh/h	1774	3506	108	406	3533	84	897	1092	655	1774	1863	1583
Grp Volume(v), veh/h	292	656	684	29	546	570	20	0	104	107	132	365
Grp Sat Flow(s),veh/h/ln	1774	1770	1844	406	1770	1848	897	0	1747	1774	1863	1583
Q Serve(g_s), s	9.9	27.2	27.2	7.7	30.6	30.6	2.5	0.0	6.9	6.3	7.3	28.9
Cycle Q Clear(g_c), s	9.9	27.2	27.2	34.9	30.6	30.6	2.5	0.0	6.9	6.3	7.3	28.9
Prop In Lane	1.00		0.06	1.00		0.05	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	542	1142	1189	114	626	654	203	0	287	311	482	410
V/C Ratio(X)	0.54	0.57	0.58	0.25	0.87	0.87	0.10	0.00	0.36	0.34	0.27	0.89
Avail Cap(c_a), veh/h	542	1142	1189	114	626	654	266	0	410	430	738	627
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.75	0.75	0.83	0.83	0.83	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	13.0	13.0	28.7	16.7	16.8	46.4	0.0	48.3	39.9	38.4	46.4
Incr Delay (d2), s/veh	0.8	1.6	1.5	4.4	13.3	12.8	0.2	0.0	0.8	0.7	0.3	10.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	13.6	14.2	1.0	16.6	17.5	0.6	0.0	3.4	3.1	3.8	13.8
LnGrp Delay(d),s/veh	38.6	14.6	14.5	33.1	30.0	29.5	46.6	0.0	49.0	40.6	38.7	56.7
LnGrp LOS	D	B	B	C	C	C	D		D	D	D	E
Approach Vol, veh/h		1632			1145			124			604	
Approach Delay, s/veh		18.9			29.9			48.7			49.9	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	37.9	52.0	12.3	27.9		89.9		40.1
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	16.0	* 46	17.0	30.5		66.0		51.5
Max Q Clear Time (g_c+I1), s	11.9	36.9	8.3	8.9		29.2		30.9
Green Ext Time (p_c), s	2.2	5.0	0.1	2.8		14.1		2.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.9
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

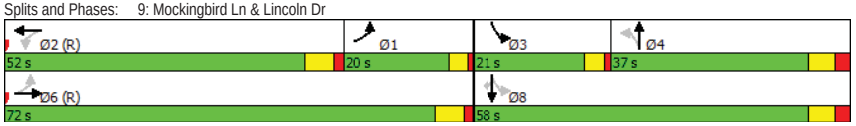
Timing Report, Sorted By Phase
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	20	52	21	37	72	58
Maximum Split (%)	15.4%	40.0%	16.2%	28.5%	55.4%	44.6%
Minimum Split (s)	8	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	50	128	70	91	128	70
End Time (s)	70	50	91	128	70	128
Yield/Force Off (s)	66	44	87	121.5	64	121.5
Yield/Force Off 170(s)	66	30	87	101.5	50	101.5
Local Start Time (s)	52	0	72	93	0	72
Local Yield (s)	68	46	89	123.5	66	123.5
Local Yield 170(s)	68	32	89	103.5	52	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 128 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



Queues
10: Quail Run Rd & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	171	1297	5	1419	10	54	99
v/c Ratio	0.50	0.43	0.02	0.54	0.06	0.47	0.32
Control Delay	14.0	3.5	7.6	9.9	0.7	69.7	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	3.5	7.6	9.9	0.7	69.7	29.6
Queue Length 50th (ft)	21	108	1	251	0	44	47
Queue Length 95th (ft)	113	208	7	423	0	87	89
Internal Link Dist (ft)		1220		1280	272	280	
Turn Bay Length (ft)	100		100				
Base Capacity (vph)	408	3013	293	2607	360	301	380
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.43	0.02	0.54	0.03	0.18	0.26

Intersection Summary

HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	1189	5	5	1279	27	5	0	5	50	0	91
Future Volume (veh/h)	157	1189	5	5	1279	27	5	0	5	50	0	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	171	1292	5	5	1390	29	5	0	5	54	0	99
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	2985	12	375	2678	56	77	13	48	176	0	186
Arrive On Green	0.08	1.00	1.00	0.76	0.76	0.76	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1774	3616	14	423	3545	74	448	163	612	1542	0	1583
Grp Volume(v), veh/h	171	632	665	5	693	726	10	0	0	54	0	99
Grp Sat Flow(s),veh/h/ln	1774	1770	1860	423	1770	1850	1223	0	0	1542	0	1583
Q Serve(g_s), s	2.8	0.0	0.0	0.4	20.5	20.5	0.0	0.0	0.0	0.0	0.0	7.6
Cycle Q Clear(g_c), s	2.8	0.0	0.0	0.4	20.5	20.5	3.8	0.0	0.0	3.8	0.0	7.6
Prop In Lane	1.00		0.01	1.00		0.04	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	350	1461	1536	375	1337	1397	137	0	0	176	0	186
V/C Ratio(X)	0.49	0.43	0.43	0.01	0.52	0.52	0.07	0.00	0.00	0.31	0.00	0.53
Avail Cap(c_a), veh/h	485	1461	1536	375	1337	1397	332	0	0	369	0	403
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	0.64	0.64	0.64	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	3.9	6.4	6.4	55.6	0.0	0.0	57.0	0.0	54.0
Incr Delay (d2), s/veh	0.9	0.8	0.7	0.0	0.9	0.9	0.2	0.0	0.0	1.0	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.3	0.3	0.0	10.2	10.6	0.3	0.0	0.0	1.9	0.0	3.5
LnGrp Delay(d),s/veh	6.7	0.8	0.7	4.0	7.3	7.3	55.8	0.0	0.0	57.9	0.0	56.3
LnGrp LOS	A	A	A	A	A	A	E			E		E
Approach Vol, veh/h		1468			1424			10			153	
Approach Delay, s/veh		1.4			7.3			55.8			56.9	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		16.2		113.8		16.2	9.1	104.7
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		28.0		89.5		28.0	15.0	70.5
Max Q Clear Time (g_c+I1), s		5.8		2.0		9.6	4.8	22.5
Green Ext Time (p_c), s		0.6		49.6		0.6	0.3	34.2

Intersection Summary	
HCM 2010 Ctrl Delay	7.1
HCM 2010 LOS	A

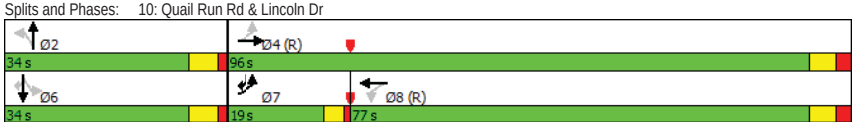
Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	34	96	34	19	77
Maximum Split (%)	26.2%	73.8%	26.2%	14.6%	59.2%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	54	88	54	88	107
End Time (s)	88	54	88	107	54
Yield/Force Off (s)	82	47.5	82	103	47.5
Yield/Force Off 170(s)	62	33.5	62	103	33.5
Local Start Time (s)	77	111	77	111	0
Local Yield (s)	105	70.5	105	126	70.5
Local Yield 170(s)	85	56.5	85	126	56.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 107 (82%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



Queues
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	400	407	467	28	89	340	1441	35	1996	755
v/c Ratio	1.00	1.01	0.71	0.34	0.45	0.85	0.62	0.23	0.98	0.67
Control Delay	91.9	93.9	26.5	66.8	34.4	62.2	14.0	67.8	60.0	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.9	93.9	26.5	66.8	34.4	62.2	14.0	67.8	60.0	17.8
Queue Length 50th (ft)	~346	~354	187	21	15	142	142	25	605	496
Queue Length 95th (ft)	#552	#564	286	53	43	#216	159	m40	#695	698
Internal Link Dist (ft)		1280			375		2560		1250	
Turn Bay Length (ft)	180			100		275		185		165
Base Capacity (vph)	399	402	656	88	210	400	2328	206	2034	1131
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	1.01	0.71	0.32	0.42	0.85	0.62	0.17	0.98	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	48	430	26	35	47	313	1294	31	32	1836	695
Future Volume (veh/h)	695	48	430	26	35	47	313	1294	31	32	1836	695
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	792	0	467	28	38	51	340	1407	34	35	1996	755
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	828	0	558	84	84	75	410	2043	49	212	2034	708
Arrive On Green	0.23	0.00	0.23	0.05	0.05	0.05	0.24	0.80	0.80	0.04	0.13	0.13
Sat Flow, veh/h	3548	0	1583	1774	1770	1583	3442	5108	123	1774	5085	1583
Grp Volume(v), veh/h	792	0	467	28	38	51	340	934	507	35	1996	755
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1583	1721	1695	1841	1774	1695	1583
Q Serve(g_s), s	26.4	0.0	18.2	1.8	2.5	3.8	11.3	14.7	14.7	2.3	47.0	48.0
Cycle Q Clear(g_c), s	26.4	0.0	18.2	1.8	2.5	3.8	11.3	14.7	14.7	2.3	47.0	48.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	828	0	558	84	84	75	410	1356	736	212	2034	708
V/C Ratio(X)	0.96	0.00	0.84	0.33	0.45	0.68	0.83	0.69	0.69	0.17	0.98	1.07
Avail Cap(c_a), veh/h	828	0	558	89	88	79	410	1356	736	212	2034	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.90	0.00	0.90	1.00	1.00	1.00	0.77	0.77	0.77	0.67	0.67	0.67
Uniform Delay (d), s/veh	45.4	0.0	35.7	55.3	55.6	56.3	44.5	8.7	8.7	51.9	51.6	45.7
Incr Delay (d2), s/veh	19.8	0.0	9.3	0.9	1.4	15.8	9.9	2.2	4.0	0.1	12.5	47.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	0.0	9.3	0.9	1.3	2.0	5.9	6.9	7.9	1.1	24.4	32.8
LnGrp Delay(d),s/veh	65.2	0.0	44.9	56.2	57.1	72.0	54.4	10.9	12.7	52.0	64.2	92.7
LnGrp LOS	E		D	E	E	E	D	B	B	D	E	F
Approach Vol, veh/h		1259			117			1781			2786	
Approach Delay, s/veh		57.7			63.4			19.7			71.8	
Approach LOS		E			E			B			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.3	54.0		12.7	18.3	54.0		35.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	14.0	48.0		6.0	14.0	48.0		28.0
Max Q Clear Time (g_c+I1), s	4.3	16.7		5.8	13.3	50.0		28.4
Green Ext Time (p_c), s	0.2	2.1		0.0	0.0	0.0		0.0

Intersection Summary

HCM 2010 Ctrl Delay	53.0
HCM 2010 LOS	D

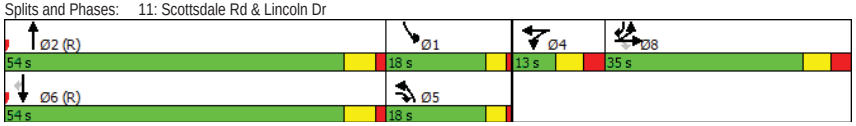
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	18	54	13	18	54	35
Maximum Split (%)	15.0%	45.0%	10.8%	15.0%	45.0%	29.2%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	4	4	4	4	4	4
Vehicle Extension (s)	1	0.2	2	1	0.2	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	10	76	28	10	76	41
End Time (s)	28	10	41	28	10	76
Yield/Force Off (s)	24	4	34	24	4	69
Yield/Force Off 170(s)	24	109	8	24	109	43
Local Start Time (s)	54	0	72	54	0	85
Local Yield (s)	68	48	78	68	48	113
Local Yield 170(s)	68	33	52	68	33	87

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150
Offset: 76 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	57	240	10	0	9	300	43	0	5	5	5
Future Vol, veh/h	0	57	240	10	0	9	300	43	0	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	62	261	11	0	10	326	47	0	5	5	5
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	11.6	14.6	9.9
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	33%	100%	0%	100%	0%	100%	0%
Vol Thru, %	33%	0%	96%	0%	87%	0%	7%
Vol Right, %	33%	0%	4%	0%	13%	0%	93%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	57	250	9	343	84	76
LT Vol	5	57	0	9	0	84	0
Through Vol	5	0	240	0	300	0	5
RT Vol	5	0	10	0	43	0	71
Lane Flow Rate	16	62	272	10	373	91	83
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.03	0.103	0.411	0.016	0.555	0.176	0.132
Departure Headway (Hd)	6.661	6.1	5.566	6.062	5.468	6.924	5.755
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	540	591	652	594	664	521	627
Service Time	4.67	3.8	3.266	3.762	3.168	4.625	3.456
HCM Lane V/C Ratio	0.03	0.105	0.417	0.017	0.562	0.175	0.132
HCM Control Delay	9.9	9.5	12.1	8.9	14.8	11.1	9.3
HCM Lane LOS	A	A	B	A	B	B	A
HCM 95th-tile Q	0.1	0.3	2	0	3.4	0.6	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	84	5	71
Future Vol, veh/h	0	84	5	71
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	91	5	77
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.2
HCM LOS	B

Lane

Queues
13: Scottsdale Rd & McDonald Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	142	314	343	396	371	53	1311	163	237	2089	82
v/c Ratio	0.49	0.68	0.63	0.73	0.63	0.22	0.60	0.21	0.48	0.90	0.09
Control Delay	51.6	55.0	51.9	56.1	19.7	47.5	28.9	3.8	48.8	21.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	55.0	51.9	56.1	19.7	47.5	28.9	3.8	48.8	21.2	0.6
Queue Length 50th (ft)	102	118	126	155	119	36	290	0	100	620	1
Queue Length 95th (ft)	161	162	167	202	180	76	364	39	m109	m#721	m3
Internal Link Dist (ft)		2600		729			803			2560	
Turn Bay Length (ft)	100		165		100	200		300	260		100
Base Capacity (vph)	290	675	554	678	596	265	2172	775	514	2326	945
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.47	0.62	0.58	0.62	0.20	0.60	0.21	0.46	0.90	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary
13: Scottsdale Rd & McDonald Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	252	37	316	364	341	49	1206	150	218	1922	75
Future Volume (veh/h)	131	252	37	316	364	341	49	1206	150	218	1922	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	142	274	40	343	396	371	53	1311	163	237	2089	82
Adj No. of Lanes	1	2	0	2	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	228	354	51	491	538	562	360	1907	594	699	1907	744
Arrive On Green	0.09	0.11	0.11	0.11	0.15	0.15	0.20	0.38	0.38	0.20	0.38	0.38
Sat Flow, veh/h	1774	3105	448	3442	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	142	155	159	343	396	371	53	1311	163	237	2089	82
Grp Sat Flow(s),veh/h/ln	1774	1770	1784	1721	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	9.4	10.2	10.4	7.2	12.8	4.7	2.9	26.1	8.6	7.1	45.0	1.4
Cycle Q Clear(g_c), s	9.4	10.2	10.4	7.2	12.8	4.7	2.9	26.1	8.6	7.1	45.0	1.4
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	202	204	491	538	562	360	1907	594	699	1907	744
V/C Ratio(X)	0.62	0.77	0.78	0.70	0.74	0.66	0.15	0.69	0.27	0.34	1.10	0.11
Avail Cap(c_a), veh/h	252	339	342	493	678	625	360	1907	594	699	1907	744
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.26	0.26	0.26
Uniform Delay (d), s/veh	53.1	51.6	51.7	49.7	48.6	15.4	39.3	31.6	26.1	40.9	37.5	6.3
Incr Delay (d2), s/veh	4.0	6.0	6.4	4.3	3.2	2.2	0.2	2.0	1.1	0.1	45.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	5.3	5.5	5.7	6.5	7.0	1.5	12.5	3.9	3.4	29.1	0.7
LnGrp Delay(d),s/veh	57.1	57.6	58.1	54.0	51.7	17.7	39.5	33.6	27.3	41.0	83.1	6.4
LnGrp LOS	E	E	E	D	D	B	D	C	C	D	F	A
Approach Vol, veh/h		456			1110			1527			2408	
Approach Delay, s/veh		57.6			41.1			33.1			76.4	
Approach LOS		E			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.4	51.0	19.9	20.7	28.4	51.0	15.4	25.3
Change Period (Y+Rc), s	4.0	6.0	* 7	* 7	4.0	6.0	4.0	* 7
Max Green Setting (Gmax), s	18.0	45.0	* 13	* 23	18.0	45.0	13.0	* 23
Max Q Clear Time (g_c+I1), s	9.1	28.1	9.2	12.4	4.9	47.0	11.4	14.8
Green Ext Time (p_c), s	0.6	9.3	1.9	1.3	0.8	0.0	0.1	3.4

Intersection Summary

HCM 2010 Ctrl Delay	55.7
HCM 2010 LOS	E

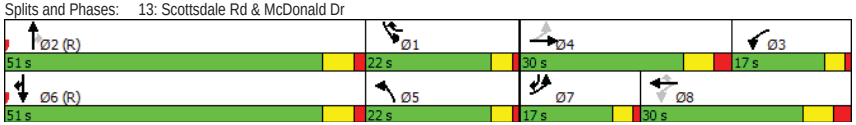
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	22	51	17	30	22	51	17	30
Maximum Split (%)	18.3%	42.5%	14.2%	25.0%	18.3%	42.5%	14.2%	25.0%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	81	30	13	103	81	30	103	0
End Time (s)	103	81	30	13	103	81	0	30
Yield/Force Off (s)	99	75	26	6	99	75	116	23
Yield/Force Off 170(s)	99	59	26	102	99	59	116	119
Local Start Time (s)	51	0	103	73	51	0	73	90
Local Yield (s)	69	45	116	96	69	45	86	113
Local Yield 170(s)	69	29	116	72	69	29	86	89

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	105
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green	

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



Intersection	
Intersection Delay, s/veh	5.0
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	189	232	61
Demand Flow Rate, veh/h	192	236	63
Vehicles Circulating, veh/h	22	25	176
Vehicles Exiting, veh/h	239	213	38
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.9	5.3	4.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	192	236	63
Cap Entry Lane, veh/h	1105	1102	948
Entry HV Adj Factor	0.982	0.982	0.968
Flow Entry, veh/h	189	232	61
Cap Entry, veh/h	1085	1082	918
V/C Ratio	0.174	0.214	0.066
Control Delay, s/veh	4.9	5.3	4.5
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	190	3	6	200	13	29
Future Vol, veh/h	190	3	6	200	13	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	207	3	7	217	14	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	210	0	438	208
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1361	-	576	832
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1361	-	573	832
Mov Cap-2 Maneuver	-	-	-	-	573	-
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	804	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	730	-	-	1361	-
HCM Lane V/C Ratio	0.063	-	-	0.005	-
HCM Control Delay (s)	10.3	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	246	17	40	223	23	54
Future Vol, veh/h	246	17	40	223	23	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	267	18	43	242	25	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	286	0	485	277
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	208	-
Critical Hdwy	-	-	4.12	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.218	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1276	-	526	761
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1276	-	508	761
Mov Cap-2 Maneuver	-	-	-	-	585	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	780	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	698	-	-	1276	-
HCM Lane V/C Ratio	0.12	-	-	0.034	-
HCM Control Delay (s)	10.9	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	3	1	0	1794	1927	6
Future Vol, veh/h	3	1	0	1794	1927	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1	0	1950	2095	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2875	1047	2095	0	-	0
Stage 1	2095	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	31	193	112	-	-	-
Stage 1	49	-	-	-	-	-
Stage 2	374	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	31	193	112	-	-	-
Mov Cap-2 Maneuver	31	-	-	-	-	-
Stage 1	49	-	-	-	-	-
Stage 2	374	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	112	-	193	-	-
HCM Lane V/C Ratio	-	-	0.006	-	-
HCM Control Delay (s)	0	-	23.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	44	0	0	13	21	14
Future Vol, veh/h	44	0	0	13	21	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	0	0	14	23	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	44	30	38	0	-	0
Stage 1	30	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	967	1044	1572	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	967	1044	1572	-	-	-
Mov Cap-2 Maneuver	967	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1572	-	967	-	-
HCM Lane V/C Ratio	-	-	0.049	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	10	5	7	22	11	10
Future Vol, veh/h	10	5	7	22	11	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	5	8	24	12	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	55	20	0	0	32	0
Stage 1	20	-	-	-	-	-
Stage 2	35	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	953	1058	-	-	1580	-
Stage 1	1003	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	945	1058	-	-	1580	-
Mov Cap-2 Maneuver	945	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	980	1580	-
HCM Lane V/C Ratio	-	-	0.017	0.008	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	15	5	25	19	8	13
Future Vol, veh/h	15	5	25	19	8	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	5	27	21	9	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	70	38	0	0	48	0
Stage 1	38	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	934	1034	-	-	1559	-
Stage 1	984	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	928	1034	-	-	1559	-
Mov Cap-2 Maneuver	928	-	-	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	985	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	952	1559	-
HCM Lane V/C Ratio	-	-	0.023	0.006	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	15	9	33	18	9	20
Future Vol, veh/h	15	9	33	18	9	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	10	36	20	10	22

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	87	46	0	0	55	0
Stage 1	46	-	-	-	-	-
Stage 2	41	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	914	1023	-	-	1550	-
Stage 1	976	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	908	1023	-	-	1550	-
Mov Cap-2 Maneuver	908	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	948	1550	-
HCM Lane V/C Ratio	-	-	0.028	0.006	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	19	8	12	160	49	13
Future Vol, veh/h	19	8	12	160	49	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	9	13	174	53	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	150	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1387	-	-	-	842	956
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1387	-	-	-	829	956
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	SB
HCM Control Delay, s	5.4	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1387	-	-	-	833
HCM Lane V/C Ratio	0.015	-	-	-	0.081
HCM Control Delay (s)	7.6	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	31	4	67	49	1	26
Future Vol, veh/h	31	4	67	49	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	4	73	53	1	28

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	129	99	0	0	126	0
Stage 1	99	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	865	957	-	-	1460	-
Stage 1	925	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	864	957	-	-	1460	-
Mov Cap-2 Maneuver	864	-	-	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	992	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	874	1460	-
HCM Lane V/C Ratio	-	-	0.044	0.001	-
HCM Control Delay (s)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	33	22	192	62
Demand Flow Rate, veh/h	34	22	196	63
Vehicles Circulating, veh/h	85	140	0	33
Vehicles Exiting, veh/h	11	56	119	129
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.9	3.9	4.8	3.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	34	22	196	63
Cap Entry Lane, veh/h	1038	982	1130	1093
Entry HV Adj Factor	0.971	1.000	0.982	0.980
Flow Entry, veh/h	33	22	192	62
Cap Entry, veh/h	1007	982	1110	1072
V/C Ratio	0.033	0.022	0.173	0.058
Control Delay, s/veh	3.9	3.9	4.8	3.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	34	0	177	7	0	107
Future Vol, veh/h	34	0	177	7	0	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	0	192	8	0	116

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	312	196	0	0	200	0
Stage 1	196	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	681	845	-	-	1372	-
Stage 1	837	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	681	845	-	-	1372	-
Mov Cap-2 Maneuver	681	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	681	1372	-
HCM Lane V/C Ratio	-	-	0.054	-	-
HCM Control Delay (s)	-	-	10.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	4	34	232	0	20	18	4	0	311	42	49
Future Vol, veh/h	0	4	34	232	0	20	18	4	0	311	42	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	37	252	0	22	20	4	0	338	46	53
Number of Lanes	0	1	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	11.9	10	14.7
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	100%	0%	100%	0%	48%	3%
Vol Thru, %	0%	46%	0%	13%	43%	83%
Vol Right, %	0%	54%	0%	87%	10%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	311	91	4	266	42	29
LT Vol	311	0	4	0	20	1
Through Vol	0	42	0	34	18	24
RT Vol	0	49	0	232	4	4
Lane Flow Rate	338	99	4	289	46	32
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.568	0.142	0.008	0.423	0.081	0.053
Departure Headway (Hd)	6.051	5.167	6.487	5.365	6.367	6.104
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	598	697	555	677	564	589
Service Time	3.755	2.871	4.187	3.065	4.39	4.12
HCM Lane V/C Ratio	0.565	0.142	0.007	0.427	0.082	0.054
HCM Control Delay	16.4	8.7	9.2	11.9	10	9.5
HCM Lane LOS	C	A	A	B	A	A
HCM 95th-tile Q	3.6	0.5	0	2.1	0.3	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	24	4
Future Vol, veh/h	0	1	24	4
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	26	4
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.5
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	153	84	343	180	74	207
Future Vol, veh/h	153	84	343	180	74	207
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	91	373	196	80	225

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	857	471	0	0	568	0
Stage 1	471	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	328	593	-	-	1004	-
Stage 1	628	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	302	593	-	-	1004	-
Mov Cap-2 Maneuver	425	-	-	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	2.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	425	593	1004	-
HCM Lane V/C Ratio	-	-	0.391	0.154	0.08	-
HCM Control Delay (s)	-	-	18.8	12.2	8.9	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.8	0.5	0.3	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	5	227	5	78	276	15	5	0	155	5	0	5
Future Vol, veh/h	5	227	5	78	276	15	5	0	155	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	247	5	85	300	16	5	0	168	5	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	316	0	0	252	0	0	740	746	249	823	741	308
Stage 1	-	-	-	-	-	-	260	260	-	478	478	-
Stage 2	-	-	-	-	-	-	480	486	-	345	263	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1244	-	-	1313	-	-	333	342	790	292	344	732
Stage 1	-	-	-	-	-	-	745	693	-	568	556	-
Stage 2	-	-	-	-	-	-	567	551	-	671	691	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1244	-	-	1313	-	-	313	319	790	218	320	732
Mov Cap-2 Maneuver	-	-	-	-	-	-	313	319	-	218	320	-
Stage 1	-	-	-	-	-	-	742	690	-	566	520	-
Stage 2	-	-	-	-	-	-	526	515	-	526	688	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	11.2	16.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	754	1244	-	-	1313	-	-	336
HCM Lane V/C Ratio	0.231	0.004	-	-	0.065	-	-	0.032
HCM Control Delay (s)	11.2	7.9	-	-	7.9	-	-	16.1
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0	-	-	0.2	-	-	0.1

Queues
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	172	343	543	313	151	125	2133	587	208	1851	86
v/c Ratio	0.46	0.82	0.91	0.94	0.27	0.55	0.94	0.54	0.92	0.82	0.11
Control Delay	54.0	64.2	70.1	85.1	17.5	44.1	28.8	4.1	84.6	33.5	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	64.2	70.1	85.1	17.5	44.1	28.8	4.1	84.6	33.5	2.5
Queue Length 50th (ft)	64	127	213	240	47	62	649	56	109	466	0
Queue Length 95th (ft)	101	178	#325	#410	99	m111	#704	95	#248	534	20
Internal Link Dist (ft)		230		920			350			920	
Turn Bay Length (ft)	100		265		265	235		210	210		250
Base Capacity (vph)	400	477	596	341	563	241	2259	1082	241	2259	764
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.72	0.91	0.92	0.27	0.52	0.94	0.54	0.86	0.82	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	246	70	500	288	139	115	1962	540	191	1703	79
Future Volume (veh/h)	158	246	70	500	288	139	115	1962	540	191	1703	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	172	267	76	543	313	151	125	2133	587	208	1851	86
Adj No. of Lanes	2	2	0	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	317	89	574	339	474	290	2161	937	272	2161	673
Arrive On Green	0.10	0.12	0.12	0.17	0.18	0.18	0.23	0.85	0.85	0.12	0.43	0.43
Sat Flow, veh/h	3442	2735	763	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	172	171	172	543	313	151	125	2133	587	208	1851	86
Grp Sat Flow(s),veh/h/ln	1721	1770	1728	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	5.7	11.3	11.7	18.7	19.8	0.0	1.1	46.9	0.0	9.2	39.5	4.0
Cycle Q Clear(g_c), s	5.7	11.3	11.7	18.7	19.8	0.0	1.1	46.9	0.0	9.2	39.5	4.0
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	205	201	574	339	474	290	2161	937	272	2161	673
V/C Ratio(X)	0.50	0.83	0.86	0.95	0.92	0.32	0.43	0.99	0.63	0.77	0.86	0.13
Avail Cap(c_a), veh/h	402	236	230	574	342	476	290	2161	937	272	2161	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	51.9	52.1	49.5	48.2	32.6	39.6	8.7	2.9	49.4	31.2	21.0
Incr Delay (d2), s/veh	0.4	17.4	21.6	24.7	29.1	0.1	0.4	16.5	3.2	11.2	4.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.5	6.8	10.9	12.9	3.9	3.2	23.1	3.1	7.5	19.3	1.8
LnGrp Delay(d),s/veh	51.5	69.3	73.7	74.2	77.4	32.7	40.0	25.2	6.1	60.5	35.8	21.4
LnGrp LOS	D	E	E	E	E	C	D	C	A	E	D	C
Approach Vol, veh/h		515			1007			2845			2145	
Approach Delay, s/veh		64.8			69.0			21.9			37.6	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	57.0	24.0	20.9	18.1	57.0	16.1	28.9
Change Period (Y+Rc), s	* 4	6.0	* 4	7.0	* 4	6.0	* 4	7.0
Max Green Setting (Gmax), s	* 12	51.0	* 20	16.0	* 12	51.0	* 14	22.0
Max Q Clear Time (g_c+I1), s	11.2	48.9	20.7	13.7	3.1	41.5	7.7	21.8
Green Ext Time (p_c), s	0.0	1.3	0.0	0.2	0.1	3.0	0.6	0.0

Intersection Summary

HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

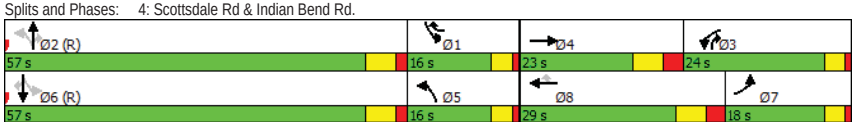
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	16	57	24	23	16	57	18	29
Maximum Split (%)	13.3%	47.5%	20.0%	19.2%	13.3%	47.5%	15.0%	24.2%
Minimum Split (s)	9.4	29.4	8.5	13	9.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	87	30	6	103	87	30	12	103
End Time (s)	103	87	30	6	103	87	30	12
Yield/Force Off (s)	99	81	26	119	99	81	26	5
Yield/Force Off 170(s)	99	65	26	88	99	65	26	94
Local Start Time (s)	57	0	96	73	57	0	102	73
Local Yield (s)	69	51	116	89	69	51	116	95
Local Yield 170(s)	69	35	116	58	69	35	116	64

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	115	5	0	11	0	2571	7	10	2273	79
Future Vol, veh/h	0	0	115	5	0	11	0	2571	7	10	2273	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	150	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	125	5	0	12	0	2795	8	11	2471	86

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3610	5294	1235	3808	5290	1401	2471	0	0	2802	0	0
Stage 1	2492	2492	-	2798	2798	-	-	-	-	-	-	-
Stage 2	1118	2802	-	1010	2492	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	6	0	144	~ 4	0	111	72	-	-	48	-	-
Stage 1	17	57	-	10	39	-	-	-	-	-	-	-
Stage 2	198	39	-	232	57	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	4	0	144	0	0	111	72	-	-	48	-	-
Mov Cap-2 Maneuver	4	0	-	0	0	-	-	-	-	-	-	-
Stage 1	17	44	-	10	39	-	-	-	-	-	-	-
Stage 2	177	39	-	24	44	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	103.5	43.4	0	0.4
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	72	-	-	144	111	48	-	-
HCM Lane V/C Ratio	-	-	-	0.868	0.157	0.226	-	-
HCM Control Delay (s)	0	-	-	103.5	43.4	100.7	-	-
HCM Lane LOS	A	-	-	F	E	F	-	-
HCM 95th %tile Q(veh)	0	-	-	5.8	0.5	0.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	154	267	343	2642	2588	87
v/c Ratio	0.50	0.62	0.59	0.64	0.79	0.08
Control Delay	57.5	44.5	42.2	8.6	24.8	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	44.5	42.2	8.6	24.8	10.6
Queue Length 50th (ft)	59	180	90	602	513	27
Queue Length 95th (ft)	92	264	m96	m684	568	m41
Internal Link Dist (ft)	480			1250	370	
Turn Bay Length (ft)	200		100			150
Base Capacity (vph)	600	433	577	4122	3274	1034
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.62	0.59	0.64	0.79	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	142	246	316	2431	2381	80		
Future Volume (veh/h)	142	246	316	2431	2381	80		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	154	267	343	2642	2588	87		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	243	462	899	4217	2839	884		
Arrive On Green	0.07	0.07	0.22	0.83	0.56	0.56		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	154	267	343	2642	2588	87		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	5.2	0.0	5.0	22.1	54.9	3.1		
Cycle Q Clear(g_c), s	5.2	0.0	5.0	22.1	54.9	3.1		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	243	462	899	4217	2839	884		
V/C Ratio(X)	0.63	0.58	0.38	0.63	0.91	0.10		
Avail Cap(c_a), veh/h	602	627	899	4217	2839	884		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.17	0.17	1.00	1.00		
Uniform Delay (d), s/veh	54.2	36.2	37.1	3.6	23.8	12.4		
Incr Delay (d2), s/veh	2.7	1.1	0.0	0.1	5.7	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.6	9.0	4.7	10.1	26.9	1.4		
LnGrp Delay(d),s/veh	57.0	37.4	37.1	3.8	29.5	12.6		
LnGrp LOS	E	D	D	A	C	B		
Approach Vol, veh/h	421			2985	2675			
Approach Delay, s/veh	44.5			7.6	29.0			
Approach LOS	D			A	C			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		105.5		14.5	32.5	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		21.0	* 16	* 67		
Max Q Clear Time (g_c+I1), s		24.1		7.2	7.0	56.9		
Green Ext Time (p_c), s		49.8		1.3	7.2	9.4		

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Timing Report, Sorted By Phase
6: Scottsdale Rd & 6750 North/Collector B

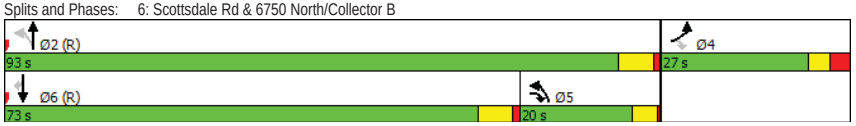
11/5/2015

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	27	20	73
Maximum Split (%)	77.5%	22.5%	16.7%	60.8%
Minimum Split (s)	36	22	8	36
Yellow Time (s)	4.9	3	3.5	4.9
All-Red Time (s)	1.1	3	0.5	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	93	73	0
End Time (s)	93	0	93	73
Yield/Force Off (s)	87	114	89	67
Yield/Force Off 170(s)	65	95	89	45
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	114	89	67
Local Yield 170(s)	65	95	89	45

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



Queues
7: Tatum Blvd & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	413	957	462	1024	337	102	1210	414	263	733	199
v/c Ratio	0.84	1.10	2.06	1.27	0.70	0.31	0.94	0.55	0.96	0.46	0.24
Control Delay	45.1	107.7	514.8	170.4	33.7	19.2	54.5	12.8	79.9	26.4	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.1	107.7	514.8	170.4	33.7	19.2	54.5	12.8	79.9	26.4	3.6
Queue Length 50th (ft)	122	~481	~566	~581	145	41	517	79	168	223	0
Queue Length 95th (ft)	177	#618	#785	#727	262	71	#663	182	#340	278	44
Internal Link Dist (ft)		1135		9775			1001			1039	
Turn Bay Length (ft)	300		125		150	175		310	200		300
Base Capacity (vph)	540	868	224	809	480	326	1288	756	278	1578	816
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	1.10	2.06	1.27	0.70	0.31	0.94	0.55	0.95	0.46	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
7: Tatum Blvd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	838	42	425	942	310	94	1113	381	242	674	183
Future Volume (veh/h)	380	838	42	425	942	310	94	1113	381	242	674	183
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	413	911	46	462	1024	337	102	1210	414	263	733	199
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	479	844	43	219	820	367	304	1280	572	283	1579	706
Arrive On Green	0.11	0.25	0.25	0.09	0.23	0.23	0.04	0.36	0.36	0.12	0.45	0.45
Sat Flow, veh/h	3442	3429	173	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	413	470	487	462	1024	337	102	1210	414	263	733	199
Grp Sat Flow(s),veh/h/ln	1721	1770	1832	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.7	32.0	32.0	12.0	30.1	27.0	4.8	43.1	29.4	14.3	18.8	10.4
Cycle Q Clear(g_c), s	11.7	32.0	32.0	12.0	30.1	27.0	4.8	43.1	29.4	14.3	18.8	10.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	479	436	451	219	820	367	304	1280	572	283	1579	706
V/C Ratio(X)	0.86	1.08	1.08	2.11	1.25	0.92	0.34	0.95	0.72	0.93	0.46	0.28
Avail Cap(c_a), veh/h	534	436	451	219	820	367	304	1280	572	283	1579	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.52	0.52	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	49.0	49.0	38.0	49.9	48.8	25.1	40.3	35.9	38.5	25.1	22.8
Incr Delay (d2), s/veh	11.6	66.1	65.4	506.6	117.7	18.9	0.2	15.1	7.7	34.8	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	23.6	24.4	32.8	28.1	13.7	2.3	23.7	14.1	12.1	9.4	4.7
LnGrp Delay(d),s/veh	47.4	115.1	114.4	544.6	167.6	67.7	25.3	55.4	43.6	73.2	26.1	23.8
LnGrp LOS	D	F	F	F	F	E	C	E	D	E	C	C
Approach Vol, veh/h		1370			1823			1726			1195	
Approach Delay, s/veh		94.4			244.7			50.8			36.1	
Approach LOS		F			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	37.1	20.0	54.0	17.0	39.0	9.0	65.0
Change Period (Y+Rc), s	5.0	7.0	4.0	7.0	5.0	7.0	4.0	7.0
Max Green Setting (Gmax), s	16.0	28.0	16.0	47.0	12.0	32.0	5.0	58.0
Max Q Clear Time (g_c+I1), s	13.7	32.1	16.3	45.1	14.0	34.0	6.8	20.8
Green Ext Time (p_c), s	0.2	0.0	0.0	1.9	0.0	0.0	0.0	35.0

Intersection Summary	
HCM 2010 Ctrl Delay	115.5
HCM 2010 LOS	F

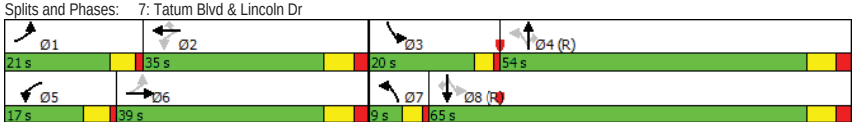
Timing Report, Sorted By Phase
7: Tatum Blvd & Lincoln Dr

11/5/2015

Phase Number	1	2	3	4	5	6	7	8
Movement	EBL	WBTL	SBL	NBTL	WBL	EBTL	NBL	SBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	C-Max	None	Max	None	C-Max
Maximum Split (s)	21	35	20	54	17	39	9	65
Maximum Split (%)	16.2%	26.9%	15.4%	41.5%	13.1%	30.0%	6.9%	50.0%
Minimum Split (s)	9	35	8	36	9	35	8	36
Yellow Time (s)	4	4.5	3	4.5	4	4.5	3	4.5
All-Red Time (s)	1	2.5	1	2.5	1	2.5	1	2.5
Minimum Initial (s)	4	15	4	15	4	15	4	15
Vehicle Extension (s)	1.5	5.5	1.5	5.5	1.5	5.5	1.5	5.5
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		23		24		23		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	64	85	120	10	64	81	120	129
End Time (s)	85	120	10	64	81	120	129	64
Yield/Force Off (s)	80	113	6	57	76	113	125	57
Yield/Force Off 170(s)	80	90	6	33	76	90	125	33
Local Start Time (s)	54	75	110	0	54	71	110	119
Local Yield (s)	70	103	126	47	66	103	115	47
Local Yield 170(s)	70	80	126	23	66	80	115	23

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 10 (8%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green	

Splits and Phases: 7: Tatum Blvd & Lincoln Dr



Queues
8: Invergordon Rd & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	5	1621	73	1454	291	125	62
v/c Ratio	0.05	0.90	0.68	0.80	0.74	0.26	0.14
Control Delay	12.8	26.2	53.6	20.4	32.5	16.4	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	26.2	53.6	20.4	32.5	16.4	14.1
Queue Length 50th (ft)	1	296	21	245	108	36	16
Queue Length 95th (ft)	8	#550	#102	#467	163	63	35
Internal Link Dist (ft)		9775		2635		481	449
Turn Bay Length (ft)	85		85		110		
Base Capacity (vph)	108	1801	108	1816	530	656	604
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.90	0.68	0.80	0.55	0.19	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
8: Invergordon Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1332	159	67	1311	27	268	23	92	27	19	11
Future Volume (veh/h)	5	1332	159	67	1311	27	268	23	92	27	19	11
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	1448	173	73	1425	29	291	25	100	29	21	12
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	1806	214	168	2009	41	455	79	317	202	138	63
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	364	3188	378	310	3547	72	1370	326	1306	513	571	260
Grp Volume(v), veh/h	5	798	823	73	710	744	291	0	125	62	0	0
Grp Sat Flow(s),veh/h/ln	364	1770	1796	310	1770	1850	1370	0	1632	1345	0	0
Q Serve(g_s), s	0.7	24.2	24.9	13.6	19.8	19.8	8.5	0.0	4.3	0.1	0.0	0.0
Cycle Q Clear(g_c), s	20.5	24.2	24.9	38.5	19.8	19.8	12.8	0.0	4.3	4.4	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.04	1.00		0.80	0.47		0.19
Lane Grp Cap(c), veh/h	206	1002	1017	168	1002	1048	455	0	396	404	0	0
V/C Ratio(X)	0.02	0.80	0.81	0.44	0.71	0.71	0.64	0.00	0.32	0.15	0.00	0.00
Avail Cap(c_a), veh/h	206	1002	1017	168	1002	1048	667	0	648	567	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.23	0.23	0.23	0.64	0.64	0.64	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.1	11.6	11.8	28.2	10.7	10.7	24.1	0.0	21.1	20.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.6	1.7	5.2	2.7	2.6	1.5	0.0	0.5	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	12.0	12.6	1.6	10.2	10.7	5.4	0.0	2.0	0.9	0.0	0.0
LnGrp Delay(d),s/veh	18.2	13.2	13.5	33.4	13.4	13.3	25.6	0.0	21.6	20.4	0.0	0.0
LnGrp LOS	B	B	B	C	B	B	C		C	C		
Approach Vol, veh/h		1626			1527			416			62	
Approach Delay, s/veh		13.4			14.3			24.4			20.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		44.5		23.5		44.5		23.5
Change Period (Y+Rc), s		6.0		7.0		6.0		7.0
Max Green Setting (Gmax), s		28.0		27.0		28.0		24.0
Max Q Clear Time (g_c+I1), s		40.5		14.8		26.9		6.4
Green Ext Time (p_c), s		0.0		1.7		1.0		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Timing Report, Sorted By Phase
8: Invergordon Rd & Lincoln Dr

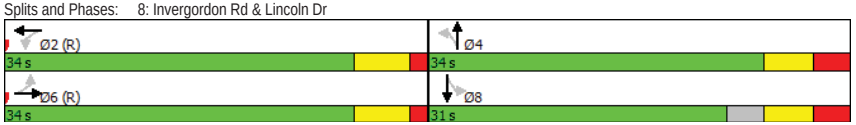
11/5/2015

Phase Number	2	4	6	8
Movement	WBTL	NBTL	EBTL	SBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	34	34	34	31
Maximum Split (%)	50.0%	50.0%	50.0%	45.6%
Minimum Split (s)	24	31	24	17
Yellow Time (s)	4.5	4	4.5	4
All-Red Time (s)	1.5	3	1.5	3
Minimum Initial (s)	15	10	15	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	
Flash Dont Walk (s)	11	17	11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	59	25	59	25
End Time (s)	25	59	25	59
Yield/Force Off (s)	19	52	19	52
Yield/Force Off 170(s)	8	35	8	52
Local Start Time (s)	0	34	0	34
Local Yield (s)	28	61	28	61
Local Yield 170(s)	17	44	17	61

Intersection Summary	
Cycle Length	68
Control Type	Actuated-Coordinated
Natural Cycle	90

Offset: 59 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Splits and Phases: 8: Invergordon Rd & Lincoln Dr



Queues
9: Mockingbird Ln & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	372	1336	42	1285	104	14	182	65	109	246
v/c Ratio	0.79	0.53	0.33	0.76	0.13	0.08	0.72	0.40	0.32	0.50
Control Delay	49.7	10.0	27.1	27.1	1.4	47.3	65.1	47.6	46.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	10.0	27.1	27.1	1.4	47.3	65.1	47.6	46.3	8.5
Queue Length 50th (ft)	203	252	19	465	0	10	138	45	79	0
Queue Length 95th (ft)	#368	362	63	621	9	29	208	81	126	67
Internal Link Dist (ft)		2635		1220			2560		2560	
Turn Bay Length (ft)	150		100		100	100		135		150
Base Capacity (vph)	469	2541	129	1701	820	270	388	164	508	611
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.53	0.33	0.76	0.13	0.05	0.47	0.40	0.21	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	1210	19	39	1182	96	13	120	48	60	100	226
Future Volume (veh/h)	342	1210	19	39	1182	96	13	120	48	60	100	226
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	372	1315	21	42	1285	104	14	130	52	65	109	246
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	555	2535	40	146	1388	621	190	166	67	148	359	305
Arrive On Green	0.27	0.71	0.71	0.52	0.52	0.52	0.13	0.13	0.13	0.03	0.19	0.19
Sat Flow, veh/h	1774	3565	57	408	3539	1583	1022	1267	507	1774	1863	1583
Grp Volume(v), veh/h	372	652	684	42	1285	104	14	0	182	65	109	246
Grp Sat Flow(s),veh/h/ln	1774	1770	1853	408	1770	1583	1022	0	1773	1774	1863	1583
Q Serve(g_s), s	18.5	21.9	22.0	10.9	43.7	3.7	1.6	0.0	12.9	4.0	6.5	19.3
Cycle Q Clear(g_c), s	18.5	21.9	22.0	32.9	43.7	3.7	1.6	0.0	12.9	4.0	6.5	19.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	555	1258	1317	146	1388	621	190	0	233	148	359	305
V/C Ratio(X)	0.67	0.52	0.52	0.29	0.93	0.17	0.07	0.00	0.78	0.44	0.30	0.81
Avail Cap(c_a), veh/h	555	1258	1317	146	1388	621	272	0	375	148	509	432
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.31	0.31	0.31	0.88	0.88	0.88	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	8.6	8.6	35.7	29.3	13.5	49.7	0.0	54.7	46.8	45.0	50.1
Incr Delay (d2), s/veh	1.0	0.5	0.5	4.3	10.7	0.5	0.2	0.0	5.6	2.0	0.5	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	10.7	11.2	1.4	23.1	1.7	0.5	0.0	6.7	0.4	3.4	9.1
LnGrp Delay(d),s/veh	40.2	9.1	9.1	40.0	40.0	14.0	49.9	0.0	60.3	48.8	45.4	57.4
LnGrp LOS	D	A	A	D	D	B	D		E	D	D	E
Approach Vol, veh/h		1708			1431			196			420	
Approach Delay, s/veh		15.9			38.2			59.6			53.0	
Approach LOS		B			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	41.4	57.0	8.0	23.6		98.4		31.6
Change Period (Y+Rc), s	6.0	* 6	4.0	6.5		6.0		6.5
Max Green Setting (Gmax), s	27.0	* 51	4.0	27.5		82.0		35.5
Max Q Clear Time (g_c+I1), s	20.5	45.7	6.0	14.9		24.0		21.3
Green Ext Time (p_c), s	4.6	3.9	0.0	2.2		16.3		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Timing Report, Sorted By Phase
9: Mockingbird Ln & Lincoln Dr

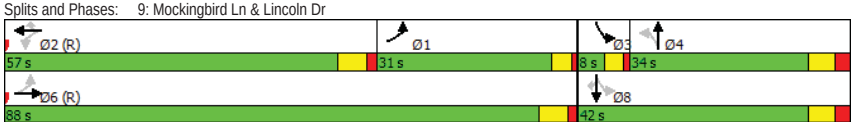
11/5/2015

Phase Number	1	2	3	4	6	8
Movement	EBL	WBTL	SBL	NBTL	EBTL	SBTL
Lead/Lag	Lag	Lead	Lead	Lag		
Lead-Lag Optimize	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	31	57	8	34	88	42
Maximum Split (%)	23.8%	43.8%	6.2%	26.2%	67.7%	32.3%
Minimum Split (s)	9	27	8	34	27	34
Yellow Time (s)	3	4.5	3	4	4.5	4
All-Red Time (s)	1	1.5	1	2.5	1.5	2.5
Minimum Initial (s)	4	15	4	7	15	7
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7		7	7	7
Flash Dont Walk (s)		14		20	14	20
Dual Entry	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	73	16	104	112	16	104
End Time (s)	104	73	112	16	104	16
Yield/Force Off (s)	100	67	108	9.5	98	9.5
Yield/Force Off 170(s)	100	53	108	119.5	84	119.5
Local Start Time (s)	57	0	88	96	0	88
Local Yield (s)	84	51	92	123.5	82	123.5
Local Yield 170(s)	84	37	92	103.5	68	103.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	110

Offset: 16 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Splits and Phases: 9: Mockingbird Ln & Lincoln Dr



Queues
10: Quail Run Rd & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	189	708	5	1145	54	10	34	199
v/c Ratio	0.45	0.24	0.01	0.44	0.05	0.06	0.34	0.67
Control Delay	8.3	3.1	5.8	7.6	1.5	0.7	65.3	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	3.1	5.8	7.6	1.5	0.7	65.3	18.7
Queue Length 50th (ft)	17	44	1	165	0	0	28	0
Queue Length 95th (ft)	98	123	6	262	12	0	61	74
Internal Link Dist (ft)		1220		1280		272	320	
Turn Bay Length (ft)	100		100		150			
Base Capacity (vph)	505	2940	526	2616	1185	386	322	518
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.24	0.01	0.44	0.05	0.03	0.11	0.38

Intersection Summary

HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	647	5	5	1053	50	5	0	5	31	0	183
Future Volume (veh/h)	174	647	5	5	1053	50	5	0	5	31	0	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	189	703	5	5	1145	54	5	0	5	34	0	199
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	2738	19	556	2402	1075	127	13	99	263	0	227
Arrive On Green	0.10	1.00	1.00	0.68	0.68	0.68	0.14	0.00	0.14	0.14	0.00	0.14
Sat Flow, veh/h	1774	3602	26	738	3539	1583	597	92	688	1448	0	1583
Grp Volume(v), veh/h	189	345	363	5	1145	54	10	0	0	34	0	199
Grp Sat Flow(s),veh/h/ln	1774	1770	1858	738	1770	1583	1377	0	0	1448	0	1583
Q Serve(g_s), s	4.3	0.0	0.0	0.3	20.0	1.5	0.0	0.0	0.0	0.0	0.0	16.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	0.3	20.0	1.5	2.2	0.0	0.0	2.2	0.0	16.0
Prop In Lane	1.00		0.01	1.00		1.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	389	1345	1413	556	2402	1075	239	0	0	263	0	227
V/C Ratio(X)	0.49	0.26	0.26	0.01	0.48	0.05	0.04	0.00	0.00	0.13	0.00	0.87
Avail Cap(c_a), veh/h	518	1345	1413	556	2402	1075	357	0	0	386	0	365
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.63	0.63	0.63	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	6.8	9.9	6.9	47.9	0.0	0.0	48.6	0.0	54.5
Incr Delay (d2), s/veh	0.8	0.4	0.4	0.0	0.4	0.1	0.1	0.0	0.0	0.2	0.0	12.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.1	0.1	0.1	9.8	0.7	0.3	0.0	0.0	1.1	0.0	7.8
LnGrp Delay(d),s/veh	8.2	0.4	0.4	6.8	10.3	7.0	48.0	0.0	0.0	48.8	0.0	67.4
LnGrp LOS	A	A	A	A	B	A	D			D		E
Approach Vol, veh/h		897			1204			10			233	
Approach Delay, s/veh		2.0			10.2			48.0			64.7	
Approach LOS		A			B			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		24.7		105.3		24.7	10.6	94.7
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		30.0		87.5		30.0	16.0	67.5
Max Q Clear Time (g_c+I1), s		4.2		2.0		18.0	6.3	22.0
Green Ext Time (p_c), s		0.9		24.8		0.7	0.3	20.8

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

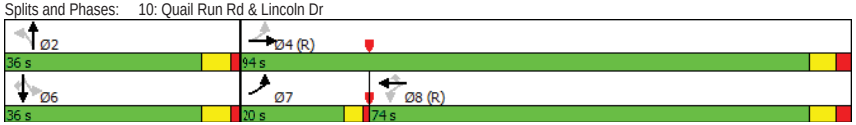
Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	36	94	36	20	74
Maximum Split (%)	27.7%	72.3%	27.7%	15.4%	56.9%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	74	110	74	110	0
End Time (s)	110	74	110	0	74
Yield/Force Off (s)	104	67.5	104	126	67.5
Yield/Force Off 170(s)	84	53.5	84	126	53.5
Local Start Time (s)	74	110	74	110	0
Local Yield (s)	104	67.5	104	126	67.5
Local Yield 170(s)	84	53.5	84	126	53.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



Queues
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	402	410	453	49	139	424	2170	78	2026	603
v/c Ratio	1.06	1.07	0.70	0.56	0.60	0.99	0.95	0.48	1.00	0.55
Control Delay	108.0	111.2	25.1	80.4	38.4	62.7	23.8	76.3	54.7	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.0	111.2	25.1	80.4	38.4	62.7	23.8	76.3	54.7	9.5
Queue Length 50th (ft)	~361	~372	178	38	25	181	~327	61	602	293
Queue Length 95th (ft)	#569	#581	274	#92	60	m#204	m#663	m82	#707	365
Internal Link Dist (ft)		1280			375		2560		1250	
Turn Bay Length (ft)	180			100		275		185		165
Base Capacity (vph)	379	382	651	88	233	429	2291	177	2034	1093
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	1.07	0.70	0.56	0.60	0.99	0.95	0.44	1.00	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary
11: Scottsdale Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	698	49	417	45	59	69	390	1958	39	72	1864	555
Future Volume (veh/h)	698	49	417	45	59	69	390	1958	39	72	1864	555
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	797	0	453	49	64	75	424	2128	42	78	2026	603
Adj No. of Lanes	2	0	1	1	2	0	2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	798	0	515	89	88	79	430	2182	43	177	2034	712
Arrive On Green	0.22	0.00	0.22	0.05	0.05	0.05	0.25	0.85	0.85	0.03	0.13	0.13
Sat Flow, veh/h	3548	0	1583	1774	1770	1583	3442	5134	101	1774	5085	1583
Grp Volume(v), veh/h	797	0	453	49	64	75	424	1404	766	78	2026	603
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1770	1583	1721	1695	1845	1774	1695	1583
Q Serve(g_s), s	26.9	0.0	20.5	3.2	4.3	5.7	14.7	43.4	44.0	5.2	47.8	41.6
Cycle Q Clear(g_c), s	26.9	0.0	20.5	3.2	4.3	5.7	14.7	43.4	44.0	5.2	47.8	41.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	798	0	515	89	88	79	430	1441	784	177	2034	712
V/C Ratio(X)	1.00	0.00	0.88	0.55	0.72	0.95	0.99	0.97	0.98	0.44	1.00	0.85
Avail Cap(c_a), veh/h	798	0	515	89	88	79	430	1441	784	177	2034	712
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.98	0.00	0.98	1.00	1.00	1.00	0.32	0.32	0.32	0.54	0.54	0.54
Uniform Delay (d), s/veh	46.5	0.0	38.3	55.7	56.2	56.8	44.9	8.4	8.5	54.7	52.0	42.8
Incr Delay (d2), s/veh	31.1	0.0	15.8	7.2	25.1	83.2	20.9	8.6	13.4	0.9	13.8	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	0.0	11.2	1.8	2.7	4.3	8.2	20.1	23.3	2.6	25.0	21.3
LnGrp Delay(d),s/veh	77.6	0.0	54.1	62.9	81.2	140.0	65.8	17.1	21.9	55.6	65.8	49.7
LnGrp LOS	E		D	E	F	F	E	B	C	E	E	D
Approach Vol, veh/h		1250			188			2594			2707	
Approach Delay, s/veh		69.1			99.9			26.5			61.9	
Approach LOS		E			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	57.0		13.0	19.0	54.0		34.0
Change Period (Y+Rc), s	4.0	6.0		7.0	4.0	6.0		7.0
Max Green Setting (Gmax), s	12.0	51.0		6.0	15.0	48.0		27.0
Max Q Clear Time (g_c+I1), s	7.2	46.0		7.7	16.7	49.8		28.9
Green Ext Time (p_c), s	0.9	4.5		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		50.6
HCM 2010 LOS		D

Notes

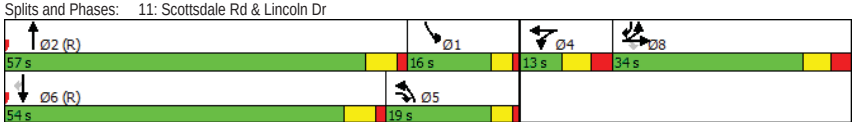
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	WBTL	NBL	SBT	EBTL
Lead/Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	16	57	13	19	54	34
Maximum Split (%)	13.3%	47.5%	10.8%	15.8%	45.0%	28.3%
Minimum Split (s)	9	28	40	9	28	40
Yellow Time (s)	3	4.5	4	3	4.5	4
All-Red Time (s)	1	1.5	3	1	1.5	3
Minimum Initial (s)	4.5	20	5	4.5	20	8
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	26		15	26
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	12	75	28	9	75	41
End Time (s)	28	12	41	28	9	75
Yield/Force Off (s)	24	6	34	24	3	68
Yield/Force Off 170(s)	24	111	8	24	108	42
Local Start Time (s)	57	0	73	54	0	86
Local Yield (s)	69	51	79	69	48	113
Local Yield 170(s)	69	36	53	69	33	87

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	150

Offset: 75 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Splits and Phases: 11: Scottsdale Rd & Lincoln Dr



Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	96	218	4	0	24	267	82	0	14	12	14
Future Vol, veh/h	0	96	218	4	0	24	267	82	0	14	12	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	104	237	4	0	26	290	89	0	15	13	15
Number of Lanes	0	1	1	0	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	11.7	15.8	10.5
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	100%	0%	100%	0%	100%	0%
Vol Thru, %	30%	0%	98%	0%	77%	0%	8%
Vol Right, %	35%	0%	2%	0%	23%	0%	92%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	96	222	24	349	59	128
LT Vol	14	96	0	24	0	59	0
Through Vol	12	0	218	0	267	0	10
RT Vol	14	0	4	0	82	0	118
Lane Flow Rate	43	104	241	26	379	64	139
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.082	0.184	0.39	0.046	0.591	0.127	0.23
Departure Headway (Hd)	6.819	6.336	5.817	6.285	5.613	7.102	5.94
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	524	567	618	570	641	505	604
Service Time	4.88	4.074	3.554	4.022	3.349	4.848	3.685
HCM Lane V/C Ratio	0.082	0.183	0.39	0.046	0.591	0.127	0.23
HCM Control Delay	10.5	10.5	12.2	9.3	16.2	10.9	10.5
HCM Lane LOS	B	B	B	A	C	B	B
HCM 95th-tile Q	0.3	0.7	1.8	0.1	3.9	0.4	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	59	10	118
Future Vol, veh/h	0	59	10	118
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	64	11	128
Number of Lanes	0	1	0	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.6
HCM LOS	B

Lane

Queues
13: Scottsdale Rd & McDonald Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	100	286	270	249	302	41	2272	276	427	2041	115
v/c Ratio	0.27	0.65	0.82	0.62	0.54	0.20	0.97	0.33	1.00	0.82	0.14
Control Delay	33.2	54.6	62.1	57.1	23.6	49.8	46.0	6.9	79.3	17.6	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	54.6	62.1	57.1	23.6	49.8	46.0	6.9	79.3	17.6	1.0
Queue Length 50th (ft)	57	107	171	98	113	29	623	26	182	591	3
Queue Length 95th (ft)	93	148	236	137	195	64	#834	89	m#206	m#640	m10
Internal Link Dist (ft)		2600		729			803			2560	
Turn Bay Length (ft)	100		165		100	200		300	260		100
Base Capacity (vph)	380	703	338	707	558	221	2333	843	429	2494	832
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.41	0.80	0.35	0.54	0.19	0.97	0.33	1.00	0.82	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary
13: Scottsdale Rd & McDonald Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	225	38	248	229	278	38	2090	254	393	1878	106
Future Volume (veh/h)	92	225	38	248	229	278	38	2090	254	393	1878	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	245	41	270	249	302	41	2272	276	427	2041	115
Adj No. of Lanes	1	2	0	1	2	1	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	324	53	264	366	510	388	2034	633	752	2034	633
Arrive On Green	0.10	0.11	0.11	0.10	0.10	0.10	0.22	0.40	0.40	0.22	0.40	0.40
Sat Flow, veh/h	1774	3042	502	1774	3539	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	100	141	145	270	249	302	41	2272	276	427	2041	115
Grp Sat Flow(s),veh/h/ln	1774	1770	1774	1774	1770	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	9.3	9.5	12.0	8.1	0.0	2.2	48.0	15.2	13.3	48.0	5.6
Cycle Q Clear(g_c), s	0.0	9.3	9.5	12.0	8.1	0.0	2.2	48.0	15.2	13.3	48.0	5.6
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	189	189	264	366	510	388	2034	633	752	2034	633
V/C Ratio(X)	0.37	0.75	0.77	1.02	0.68	0.59	0.11	1.12	0.44	0.57	1.00	0.18
Avail Cap(c_a), veh/h	273	354	355	264	708	663	388	2034	633	752	2034	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.24	0.24	0.24
Uniform Delay (d), s/veh	47.6	52.0	52.2	51.9	51.9	34.1	37.5	36.0	26.2	41.8	36.0	23.3
Incr Delay (d2), s/veh	0.8	5.8	6.4	61.8	2.2	1.1	0.1	60.0	2.2	0.2	10.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.9	5.0	12.9	4.1	8.5	1.1	33.7	7.0	6.3	24.4	2.5
LnGrp Delay(d),s/veh	48.4	57.9	58.5	113.8	54.1	35.2	37.6	96.0	28.3	42.1	46.6	23.4
LnGrp LOS	D	E	E	F	D	D	D	F	C	D	F	C
Approach Vol, veh/h		386			821			2589			2583	
Approach Delay, s/veh		55.7			66.8			87.9			44.8	
Approach LOS		E			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.2	54.0	16.0	19.8	30.2	54.0	16.4	19.4
Change Period (Y+Rc), s	4.0	6.0	* 4	7.0	4.0	6.0	* 4	7.0
Max Green Setting (Gmax), s	15.0	48.0	* 12	24.0	15.0	48.0	* 12	24.0
Max Q Clear Time (g_c+I1), s	15.3	50.0	14.0	11.5	4.2	50.0	2.0	10.1
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	1.3	0.0	0.8	2.3

Intersection Summary

HCM 2010 Ctrl Delay	65.8
HCM 2010 LOS	E

Notes

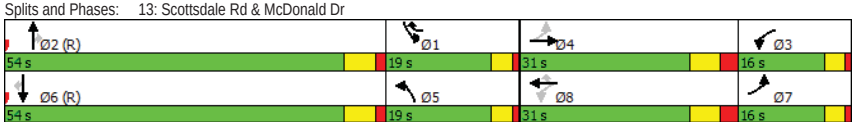
User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBT	WBL	EBTL	NBL	SBT	EBL	WBTL
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	19	54	16	31	19	54	16	31
Maximum Split (%)	15.8%	45.0%	13.3%	25.8%	15.8%	45.0%	13.3%	25.8%
Minimum Split (s)	14	31	10	37	14	31	10	37
Yellow Time (s)	3	4.5	3	4.3	3	4.5	3	4.3
All-Red Time (s)	1	1.5	1	2.7	1	1.5	1	2.7
Minimum Initial (s)	10	20	6	8	10	20	6	8
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		9		6		9		6
Flash Dont Walk (s)		16		24		16		24
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	30	14	103	84	30	14	103
End Time (s)	103	84	30	14	103	84	30	14
Yield/Force Off (s)	99	78	26	7	99	78	26	7
Yield/Force Off 170(s)	99	62	26	103	99	62	26	103
Local Start Time (s)	54	0	104	73	54	0	104	73
Local Yield (s)	69	48	116	97	69	48	116	97
Local Yield 170(s)	69	32	116	73	69	32	116	73

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	125

Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Splits and Phases: 13: Scottsdale Rd & McDonald Dr



Intersection	
Intersection Delay, s/veh	5.8
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	263	287	83
Demand Flow Rate, veh/h	268	293	85
Vehicles Circulating, veh/h	43	43	217
Vehicles Exiting, veh/h	293	259	94
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.7	6.0	4.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	268	293	85
Cap Entry Lane, veh/h	1082	1082	910
Entry HV Adj Factor	0.980	0.980	0.976
Flow Entry, veh/h	263	287	83
Cap Entry, veh/h	1061	1061	888
V/C Ratio	0.248	0.271	0.093
Control Delay, s/veh	5.7	6.0	4.9
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	222	12	29	258	6	14
Future Vol, veh/h	222	12	29	258	6	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	241	13	32	280	7	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	254	0	591	248
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	343	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1311	-	470	791
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	719	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1311	-	459	791
Mov Cap-2 Maneuver	-	-	-	-	547	-
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	698	-	-	1311	-
HCM Lane V/C Ratio	0.031	-	-	0.024	-
HCM Control Delay (s)	10.3	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	356	45	110	347	43	103
Future Vol, veh/h	356	45	110	347	43	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	387	49	120	377	47	112

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	839	411
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	428	-
Critical Hdwy	-	-	4.12	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.218	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1124	-	320	640
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1124	-	286	640
Mov Cap-2 Maneuver	-	-	-	-	286	-
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	469	-	-	1124	-
HCM Lane V/C Ratio	0.338	-	-	0.106	-
HCM Control Delay (s)	16.6	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.5	-	-	0.4	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	13	5	0	2603	1951	17
Future Vol, veh/h	13	5	0	2603	1951	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	5	0	2829	2121	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3253	1060	2121	0	-	0
Stage 1	2121	-	-	-	-	-
Stage 2	1132	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	19	189	109	-	-	-
Stage 1	47	-	-	-	-	-
Stage 2	242	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	19	189	109	-	-	-
Mov Cap-2 Maneuver	19	-	-	-	-	-
Stage 1	47	-	-	-	-	-
Stage 2	242	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	109	-	189	-	-
HCM Lane V/C Ratio	-	-	0.029	-	-
HCM Control Delay (s)	0	-	24.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	28	0	0	49	37	48
Future Vol, veh/h	28	0	0	49	37	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	0	53	40	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	119	66	92	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	877	998	1503	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	877	998	1503	-	-	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	877	-	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	22	11	37	11	6	31
Future Vol, veh/h	22	11	37	11	6	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	12	40	12	7	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	93	46	0	0	52	0
Stage 1	46	-	-	-	-	-
Stage 2	47	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	907	1023	-	-	1554	-
Stage 1	976	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	902	1023	-	-	1554	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	939	1554	-
HCM Lane V/C Ratio	-	-	0.038	0.004	-
HCM Control Delay (s)	-	-	9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	63	23	25	54	24	30
Future Vol, veh/h	63	23	25	54	24	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	25	27	59	26	33

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	142	57	0	0	86	0
Stage 1	57	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	851	1009	-	-	1510	-
Stage 1	966	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	836	1009	-	-	1510	-
Mov Cap-2 Maneuver	836	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	3.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	876	1510	-
HCM Lane V/C Ratio	-	-	0.107	0.017	-
HCM Control Delay (s)	-	-	9.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	53	10	61	56	33	70
Future Vol, veh/h	53	10	61	56	33	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	11	66	61	36	76

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	245	97	0	0	127	0
Stage 1	97	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	743	959	-	-	1459	-
Stage 1	927	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	724	959	-	-	1459	-
Mov Cap-2 Maneuver	724	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	2.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	753	1459	-
HCM Lane V/C Ratio	-	-	0.091	0.025	-
HCM Control Delay (s)	-	-	10.3	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	61	27	5	375	255	57
Future Vol, veh/h	61	27	5	375	255	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	29	5	408	277	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	413	0	-	0	371	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	162	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1146	-	-	-	630	831
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1146	-	-	-	593	831
Mov Cap-2 Maneuver	-	-	-	-	645	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	816	-

Approach	EB	WB	SB
HCM Control Delay, s	5.8	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1146	-	-	-	672
HCM Lane V/C Ratio	0.058	-	-	-	0.505
HCM Control Delay (s)	8.3	0	-	-	15.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	2.9

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	121	1	28	115	2	36
Future Vol, veh/h	121	1	28	115	2	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	1	30	125	2	39

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	136	93	0	0	155	0
Stage 1	93	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	857	964	-	-	1425	-
Stage 1	931	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	856	964	-	-	1425	-
Mov Cap-2 Maneuver	856	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	857	1425	-
HCM Lane V/C Ratio	-	-	0.155	0.002	-
HCM Control Delay (s)	-	-	10	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

HCM 2010 Roundabout
31: Quail Run Rd & South Residential Access

11/5/2015

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	20	25	208	171
Demand Flow Rate, veh/h	20	26	212	174
Vehicles Circulating, veh/h	199	192	0	60
Vehicles Exiting, veh/h	35	20	219	157
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.1	4.3	4.9	4.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	20	26	212	174
Cap Entry Lane, veh/h	926	933	1130	1064
Entry HV Adj Factor	1.000	0.962	0.981	0.980
Flow Entry, veh/h	20	25	208	171
Cap Entry, veh/h	926	897	1108	1043
V/C Ratio	0.022	0.028	0.188	0.164
Control Delay, s/veh	4.1	4.3	4.9	4.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

HCM 2010 TWSC
32: Quail Run Rd & Townhome Access

11/5/2015

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	16	0	191	33	0	198
Future Vol, veh/h	16	0	191	33	0	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	0	208	36	0	215

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	441	226	0	0	243	0
Stage 1	226	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	574	813	-	-	1323	-
Stage 1	812	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	574	813	-	-	1323	-
Mov Cap-2 Maneuver	574	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	821	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	574	1323	-
HCM Lane V/C Ratio	-	-	0.03	-	-
HCM Control Delay (s)	-	-	11.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

APPENDIX M

ALTERNATIVE ACCESS CONDITIONS PEAK HOUR ANALYSIS

CivTech

Queues
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	75	245	665	202	168	146	1445	465	176	1837	49
v/c Ratio	0.43	0.74	0.91	0.41	0.25	0.72	0.64	0.40	0.79	0.81	0.06
Control Delay	62.6	58.3	63.7	40.0	7.3	65.9	22.6	2.6	60.5	33.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	58.3	63.7	40.0	7.3	65.9	22.6	2.6	60.5	33.3	0.2
Queue Length 50th (ft)	29	82	253	127	21	91	422	48	65	475	0
Queue Length 95th (ft)	54	125	#373	207	59	153	464	74	#155	545	0
Internal Link Dist (ft)		230		920			350			920	
Turn Bay Length (ft)	100		265		265	235		210	210		250
Base Capacity (vph)	400	402	745	488	672	242	2275	1170	263	2275	768
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.61	0.89	0.41	0.25	0.60	0.64	0.40	0.67	0.81	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	161	64	612	186	155	134	1329	428	162	1690	45
Future Volume (veh/h)	69	161	64	612	186	155	134	1329	428	162	1690	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	75	175	70	665	202	168	146	1445	465	176	1837	49
Adj No. of Lanes	2	2	0	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	223	86	712	533	604	247	2076	974	297	2076	647
Arrive On Green	0.04	0.09	0.09	0.21	0.29	0.29	0.19	0.82	0.82	0.10	0.41	0.41
Sat Flow, veh/h	3442	2499	963	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	75	122	123	665	202	168	146	1445	465	176	1837	49
Grp Sat Flow(s),veh/h/ln	1721	1770	1693	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	2.6	8.1	8.6	22.8	10.4	1.0	3.3	14.5	0.0	2.4	40.2	1.8
Cycle Q Clear(g_c), s	2.6	8.1	8.6	22.8	10.4	1.0	3.3	14.5	0.0	2.4	40.2	1.8
Prop In Lane	1.00		0.57	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	158	151	712	533	604	247	2076	974	297	2076	647
V/C Ratio(X)	0.62	0.77	0.82	0.93	0.38	0.28	0.59	0.70	0.48	0.59	0.88	0.08
Avail Cap(c_a), veh/h	402	192	183	717	533	604	255	2076	974	305	2076	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	53.5	53.7	46.8	34.3	14.4	43.8	7.8	3.0	42.7	32.9	13.9
Incr Delay (d2), s/veh	1.9	11.6	17.2	18.9	0.2	0.1	2.2	2.0	1.7	1.9	6.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.5	4.7	12.7	5.4	2.8	4.3	6.8	2.5	5.5	19.9	0.8
LnGrp Delay(d),s/veh	59.0	65.0	70.9	65.6	34.5	14.5	46.0	9.8	4.7	44.6	38.8	14.1
LnGrp LOS	E	E	E	E	C	B	D	A	A	D	D	B
Approach Vol, veh/h		320			1035			2056			2062	
Approach Delay, s/veh		65.9			51.2			11.2			38.8	
Approach LOS		E			D			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	55.0	31.8	17.7	15.5	55.0	8.2	41.3
Change Period (Y+Rc), s	* 4	6.0	* 7	* 7	* 4	6.0	4.0	* 7
Max Green Setting (Gmax), s	* 12	49.0	* 25	* 13	* 12	49.0	14.0	* 24
Max Q Clear Time (g_c+I1), s	4.4	16.5	24.8	10.6	5.3	42.2	4.6	12.4
Green Ext Time (p_c), s	0.1	2.4	0.0	0.1	0.1	2.5	0.0	1.7

Intersection Summary

HCM 2010 Ctrl Delay	32.4
HCM 2010 LOS	C

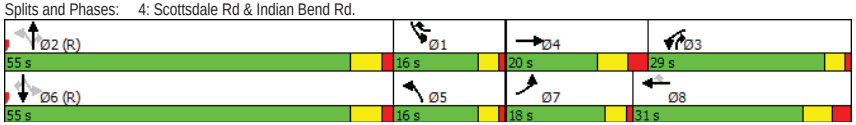
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	16	55	29	20	16	55	18	31
Maximum Split (%)	13.3%	45.8%	24.2%	16.7%	13.3%	45.8%	15.0%	25.8%
Minimum Split (s)	9.4	29.4	8.5	13	8.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	85	30	1	101	85	30	101	119
End Time (s)	101	85	30	1	101	85	119	30
Yield/Force Off (s)	97	79	26	114	97	79	115	23
Yield/Force Off 170(s)	97	63	26	83	97	63	115	112
Local Start Time (s)	55	0	91	71	55	0	71	89
Local Yield (s)	67	49	116	84	67	49	85	113
Local Yield 170(s)	67	33	116	53	67	33	85	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



Queues
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	38	47	142	1882	2520	132
v/c Ratio	0.20	0.15	0.47	0.41	0.69	0.11
Control Delay	55.9	36.5	39.3	3.1	17.1	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	36.5	39.3	3.1	17.1	7.9
Queue Length 50th (ft)	14	27	62	104	467	38
Queue Length 95th (ft)	32	60	m98	m166	513	m56
Internal Link Dist (ft)	480			1250	370	
Turn Bay Length (ft)	200		100			150
Base Capacity (vph)	600	318	300	4591	3641	1152
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.15	0.47	0.41	0.69	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	43	131	1731	2318	121
Future Volume (veh/h)	35	43	131	1731	2318	121
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	38	47	142	1882	2520	132
Adj No. of Lanes	2	1	1	3	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	135	462	527	4377	2839	884
Arrive On Green	0.04	0.04	0.34	1.00	0.74	0.74
Sat Flow, veh/h	3442	1583	1774	5253	5253	1583
Grp Volume(v), veh/h	38	47	142	1882	2520	132
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1695	1695	1583
Q Serve(g_s), s	1.3	0.0	1.2	0.0	44.9	2.9
Cycle Q Clear(g_c), s	1.3	0.0	1.2	0.0	44.9	2.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	135	462	527	4377	2839	884
V/C Ratio(X)	0.28	0.10	0.27	0.43	0.89	0.15
Avail Cap(c_a), veh/h	602	677	527	4377	2839	884
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.65	0.65	1.00	1.00
Uniform Delay (d), s/veh	56.0	31.0	28.5	0.0	12.6	7.2
Incr Delay (d2), s/veh	1.1	0.1	0.2	0.2	4.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.6	3.2	0.1	21.4	1.3
LnGrp Delay(d),s/veh	57.1	31.1	28.7	0.2	17.2	7.6
LnGrp LOS	E	C	C	A	B	A
Approach Vol, veh/h	85			2024	2652	
Approach Delay, s/veh	42.7			2.2	16.7	
Approach LOS	D			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		109.3		10.7	36.3	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		21.0	* 16	* 67		
Max Q Clear Time (g_c+I1), s		2.0		3.3	3.2	46.9		
Green Ext Time (p_c), s		31.0		0.2	10.1	17.8		

Intersection Summary

HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

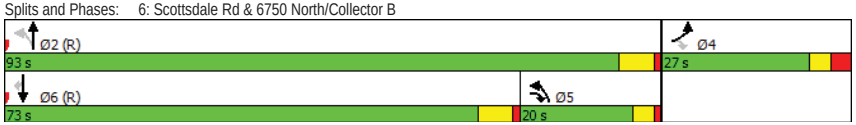
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	27	20	73
Maximum Split (%)	77.5%	22.5%	16.7%	60.8%
Minimum Split (s)	36	36	8	37
Yellow Time (s)	4.9	3	3	4.9
All-Red Time (s)	1.1	3	1	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	93	73	0
End Time (s)	93	0	93	73
Yield/Force Off (s)	87	114	89	67
Yield/Force Off 170(s)	65	95	89	45
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	114	89	67
Local Yield 170(s)	65	95	89	45

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	95
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



Queues
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	172	343	543	313	151	240	2133	587	208	1851	86
v/c Ratio	0.46	0.82	0.91	0.94	0.26	0.95	0.96	0.54	0.88	0.85	0.12
Control Delay	54.0	64.2	70.1	85.1	17.5	94.3	39.9	6.4	76.0	35.6	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	64.2	70.1	85.1	17.5	94.3	39.9	6.4	76.0	35.6	2.6
Queue Length 50th (ft)	64	127	213	240	47	145	634	112	108	473	0
Queue Length 95th (ft)	101	178	#325	#410	99	#309	#731	157	#246	543	20
Internal Link Dist (ft)		230		920			350			920	
Turn Bay Length (ft)	100		265		265	235		210	210		250
Base Capacity (vph)	400	477	596	341	565	256	2230	1073	241	2187	743
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.72	0.91	0.92	0.27	0.94	0.96	0.55	0.86	0.85	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
4: Scottsdale Rd & Indian Bend Rd.

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	246	70	500	288	139	221	1962	540	191	1703	79
Future Volume (veh/h)	158	246	70	500	288	139	221	1962	540	191	1703	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	172	267	76	543	313	151	240	2133	587	208	1851	86
Adj No. of Lanes	2	2	0	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	317	89	574	339	474	302	2161	937	271	2119	660
Arrive On Green	0.10	0.12	0.12	0.17	0.18	0.18	0.25	0.85	0.85	0.12	0.42	0.42
Sat Flow, veh/h	3442	2735	763	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	172	171	172	543	313	151	240	2133	587	208	1851	86
Grp Sat Flow(s),veh/h/ln	1721	1770	1728	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	5.7	11.3	11.7	18.7	19.8	0.0	9.4	46.9	0.0	9.3	40.1	4.0
Cycle Q Clear(g_c), s	5.7	11.3	11.7	18.7	19.8	0.0	9.4	46.9	0.0	9.3	40.1	4.0
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	205	201	574	339	474	302	2161	937	271	2119	660
V/C Ratio(X)	0.50	0.83	0.86	0.95	0.92	0.32	0.80	0.99	0.63	0.77	0.87	0.13
Avail Cap(c_a), veh/h	402	236	230	574	342	476	302	2161	937	271	2119	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	51.9	52.1	49.5	48.2	32.6	40.9	8.7	2.9	49.4	32.1	21.6
Incr Delay (d2), s/veh	0.4	17.4	21.6	24.7	29.1	0.1	12.7	16.5	3.2	11.4	5.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.5	6.8	10.9	12.9	3.9	8.1	23.1	3.1	7.5	19.7	1.8
LnGrp Delay(d),s/veh	51.5	69.3	73.7	74.2	77.4	32.7	53.6	25.2	6.1	60.8	37.5	22.0
LnGrp LOS	D	E	E	E	E	C	D	C	A	E	D	C
Approach Vol, veh/h		515			1007			2960			2145	
Approach Delay, s/veh		64.8			69.0			23.7			39.1	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	57.0	24.0	20.9	19.1	56.0	16.1	28.9
Change Period (Y+Rc), s	* 4	6.0	* 4	7.0	* 4	6.0	* 4	7.0
Max Green Setting (Gmax), s	* 12	51.0	* 20	16.0	* 13	50.0	* 14	22.0
Max Q Clear Time (g_c+I1), s	11.3	48.9	20.7	13.7	11.4	42.1	7.7	21.8
Green Ext Time (p_c), s	0.0	1.3	0.0	0.2	0.1	2.7	0.6	0.0

Intersection Summary

HCM 2010 Ctrl Delay	38.8
HCM 2010 LOS	D

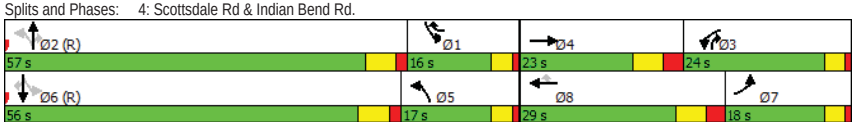
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	16	57	24	23	17	56	18	29
Maximum Split (%)	13.3%	47.5%	20.0%	19.2%	14.2%	46.7%	15.0%	24.2%
Minimum Split (s)	9.4	29.4	8.5	13	9.5	29.4	8.5	13
Yellow Time (s)	3	4.4	3	4.2	3	4.4	3	4.2
All-Red Time (s)	1	1.6	1	2.8	1	1.6	1	2.8
Minimum Initial (s)	4	20	4	6	4	20	4	6
Vehicle Extension (s)	1	0.2	1.5	1	1	0.2	1	2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		16		31		16		31
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	87	30	6	103	86	30	12	103
End Time (s)	103	87	30	6	103	86	30	12
Yield/Force Off (s)	99	81	26	119	99	80	26	5
Yield/Force Off 170(s)	99	65	26	88	99	64	26	94
Local Start Time (s)	57	0	96	73	56	0	102	73
Local Yield (s)	69	51	116	89	69	50	116	95
Local Yield 170(s)	69	35	116	58	69	34	116	64

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 4: Scottsdale Rd & Indian Bend Rd.



Queues
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	154	267	228	1671	2588	87
v/c Ratio	0.50	0.62	0.77	0.41	0.79	0.08
Control Delay	57.5	44.5	51.2	3.5	25.3	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	44.5	51.2	3.5	25.3	10.7
Queue Length 50th (ft)	59	180	126	101	513	27
Queue Length 95th (ft)	92	264	m132	m158	567	m40
Internal Link Dist (ft)	480			1250	370	
Turn Bay Length (ft)	200		100			150
Base Capacity (vph)	600	433	297	4122	3274	1034
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.62	0.77	0.41	0.79	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary
6: Scottsdale Rd & 6750 North/Collector B

11/5/2015

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	142	246	210	1537	2381	80
Future Volume (veh/h)	142	246	210	1537	2381	80
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	154	267	228	1671	2588	87
Adj No. of Lanes	2	1	1	3	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	243	462	461	4217	2839	884
Arrive On Green	0.07	0.07	0.15	0.56	0.56	0.56
Sat Flow, veh/h	3442	1583	1774	5253	5253	1583
Grp Volume(v), veh/h	154	267	228	1671	2588	87
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1695	1695	1583
Q Serve(g_s), s	5.2	0.0	9.3	22.5	54.9	3.1
Cycle Q Clear(g_c), s	5.2	0.0	9.3	22.5	54.9	3.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	243	462	461	4217	2839	884
V/C Ratio(X)	0.63	0.58	0.49	0.40	0.91	0.10
Avail Cap(c_a), veh/h	602	627	461	4217	2839	884
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.17	0.17	1.00	1.00
Uniform Delay (d), s/veh	54.2	36.2	42.2	9.5	23.8	12.4
Incr Delay (d2), s/veh	2.7	1.1	0.1	0.0	5.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	9.0	6.9	10.5	26.9	1.4
LnGrp Delay(d),s/veh	57.0	37.4	42.3	9.6	29.5	12.6
LnGrp LOS	E	D	D	A	C	B
Approach Vol, veh/h	421			1899	2675	
Approach Delay, s/veh	44.5			13.5	29.0	
Approach LOS	D			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		105.5		14.5	32.5	73.0		
Change Period (Y+Rc), s		* 6		6.0	* 6	* 6		
Max Green Setting (Gmax), s		* 87		21.0	* 16	* 67		
Max Q Clear Time (g_c+I1), s		24.5		7.2	11.3	56.9		
Green Ext Time (p_c), s		23.5		1.3	2.9	9.4		

Intersection Summary

HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

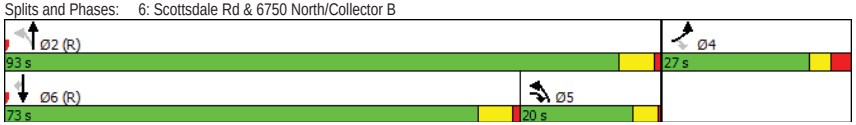
Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	93	27	20	73
Maximum Split (%)	77.5%	22.5%	16.7%	60.8%
Minimum Split (s)	36	22	8	36
Yellow Time (s)	4.9	3	3.5	4.9
All-Red Time (s)	1.1	3	0.5	1.1
Minimum Initial (s)	10	5	4	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8		8
Flash Dont Walk (s)	22	19		22
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	93	73	0
End Time (s)	93	0	93	73
Yield/Force Off (s)	87	114	89	67
Yield/Force Off 170(s)	65	95	89	45
Local Start Time (s)	0	93	73	0
Local Yield (s)	87	114	89	67
Local Yield 170(s)	65	95	89	45

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 6: Scottsdale Rd & 6750 North/Collector B



APPENDIX N

EVENT PEAK HOUR ANALYSIS

Queues
10: Quail Run Rd & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	40	290	3	490	35	6	176	105
v/c Ratio	0.06	0.11	0.00	0.21	0.03	0.02	0.76	0.30
Control Delay	4.9	5.1	10.0	9.4	1.0	0.2	71.5	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	5.1	10.0	9.4	1.0	0.2	71.5	9.9
Queue Length 50th (ft)	7	29	1	79	0	0	143	0
Queue Length 95th (ft)	19	53	5	128	6	0	211	48
Internal Link Dist (ft)		1220		1280		272	320	
Turn Bay Length (ft)	100		100		150			
Base Capacity (vph)	748	2609	720	2385	1086	402	324	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.11	0.00	0.21	0.03	0.01	0.54	0.24

Intersection Summary

HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	264	3	3	451	32	3	0	3	162	0	97
Future Volume (veh/h)	37	264	3	3	451	32	3	0	3	162	0	97
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	40	287	3	3	490	35	3	0	3	176	0	105
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	612	2514	26	756	2287	1023	56	13	27	256	0	322
Arrive On Green	0.05	1.00	1.00	0.65	0.65	0.65	0.20	0.00	0.20	0.20	0.00	0.20
Sat Flow, veh/h	1774	3588	37	1085	3539	1583	69	65	134	985	0	1583
Grp Volume(v), veh/h	40	141	149	3	490	35	6	0	0	176	0	105
Grp Sat Flow(s),veh/h/ln	1774	1770	1856	1085	1770	1583	268	0	0	985	0	1583
Q Serve(g_s), s	0.9	0.0	0.0	0.1	7.4	1.0	0.1	0.0	0.0	0.0	0.0	7.4
Cycle Q Clear(g_c), s	0.9	0.0	0.0	0.1	7.4	1.0	23.9	0.0	0.0	23.8	0.0	7.4
Prop In Lane	1.00		0.02	1.00		1.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	612	1240	1300	756	2287	1023	96	0	0	256	0	322
V/C Ratio(X)	0.07	0.11	0.11	0.00	0.21	0.03	0.06	0.00	0.00	0.69	0.00	0.33
Avail Cap(c_a), veh/h	789	1240	1300	756	2287	1023	135	0	0	294	0	365
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	0.95	0.95	0.95	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.8	0.0	0.0	8.2	9.4	8.3	43.3	0.0	0.0	50.8	0.0	44.2
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.0	0.2	0.1	0.3	0.0	0.0	5.5	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.1	0.1	0.0	3.7	0.5	0.2	0.0	0.0	6.6	0.0	3.3
LnGrp Delay(d),s/veh	6.8	0.2	0.2	8.2	9.6	8.4	43.5	0.0	0.0	56.3	0.0	44.8
LnGrp LOS	A	A	A	A	A	A	D			E		D
Approach Vol, veh/h		330			528			6			281	
Approach Delay, s/veh		1.0			9.5			43.5			52.0	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		32.4		97.6		32.4	7.1	90.5
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		30.0		87.5		30.0	16.0	67.5
Max Q Clear Time (g_c+I1), s		25.9		2.0		25.8	2.9	9.4
Green Ext Time (p_c), s		0.5		6.1		0.5	0.0	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

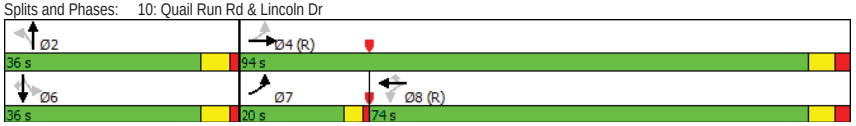
Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	36	94	36	20	74
Maximum Split (%)	27.7%	72.3%	27.7%	15.4%	56.9%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	74	110	74	110	0
End Time (s)	110	74	110	0	74
Yield/Force Off (s)	104	67.5	104	126	67.5
Yield/Force Off 170(s)	84	53.5	84	126	53.5
Local Start Time (s)	74	110	74	110	0
Local Yield (s)	104	67.5	104	126	67.5
Local Yield 170(s)	84	53.5	84	126	53.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



HCM 2010 TWSC
30: Quail Run Rd/Hotel Access

11/5/2015

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	1	17	0	1	23
Future Vol, veh/h	0	1	17	0	1	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	18	0	1	25

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	45	18	0	0	18	0
Stage 1	18	-	-	-	-	-
Stage 2	27	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	965	1061	-	-	1599	-
Stage 1	1005	-	-	-	-	-
Stage 2	996	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	964	1061	-	-	1599	-
Mov Cap-2 Maneuver	964	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	995	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1061	1599	-
HCM Lane V/C Ratio	-	-	0.001	0.001	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

HCM 2010 Roundabout
31: Quail Run Rd & South Residential Access

11/5/2015

Intersection	
Intersection Delay, s/veh	5.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	13	16	52	242
Demand Flow Rate, veh/h	13	16	52	247
Vehicles Circulating, veh/h	263	40	0	38
Vehicles Exiting, veh/h	22	12	276	18
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.3	3.4	3.6	5.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	13	16	52	247
Cap Entry Lane, veh/h	869	1086	1130	1088
Entry HV Adj Factor	1.000	1.000	0.993	0.980
Flow Entry, veh/h	13	16	52	242
Cap Entry, veh/h	869	1086	1122	1066
V/C Ratio	0.015	0.015	0.046	0.227
Control Delay, s/veh	4.3	3.4	3.6	5.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	1

HCM 2010 TWSC
32: Quail Run Rd & Townhome Access

11/5/2015

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	10	0	48	21	0	249
Future Vol, veh/h	10	0	48	21	0	249
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	0	52	23	0	271

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	335	64	0	0	75	0
Stage 1	64	-	-	-	-	-
Stage 2	271	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	660	1000	-	-	1524	-
Stage 1	959	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	660	1000	-	-	1524	-
Mov Cap-2 Maneuver	660	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	775	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	660	1524	-
HCM Lane V/C Ratio	-	-	0.016	-	-
HCM Control Delay (s)	-	-	10.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Queues
10: Quail Run Rd & Lincoln Dr

11/5/2015

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	95	354	3	572	27	6	172	163
v/c Ratio	0.15	0.14	0.00	0.25	0.03	0.02	0.75	0.41
Control Delay	5.0	5.1	10.7	10.6	0.3	0.2	70.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	5.1	10.7	10.6	0.3	0.2	70.7	9.4
Queue Length 50th (ft)	16	36	1	97	0	0	140	0
Queue Length 95th (ft)	38	64	6	158	2	0	206	58
Internal Link Dist (ft)		1220		1280		272	320	
Turn Bay Length (ft)	100		100		150			
Base Capacity (vph)	697	2617	656	2308	1053	402	324	490
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.14	0.00	0.25	0.03	0.01	0.53	0.33

Intersection Summary

HCM 2010 Signalized Intersection Summary
10: Quail Run Rd & Lincoln Dr

11/5/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	323	3	3	526	25	3	0	3	158	0	150
Future Volume (veh/h)	87	323	3	3	526	25	3	0	3	158	0	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	95	351	3	3	572	27	3	0	3	172	0	163
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	580	2532	22	710	2264	1013	56	13	28	253	0	316
Arrive On Green	0.07	1.00	1.00	0.64	0.64	0.64	0.20	0.00	0.20	0.20	0.00	0.20
Sat Flow, veh/h	1774	3596	31	1023	3539	1583	73	66	139	989	0	1583
Grp Volume(v), veh/h	95	173	181	3	572	27	6	0	0	172	0	163
Grp Sat Flow(s),veh/h/ln	1774	1770	1857	1023	1770	1583	277	0	0	989	0	1583
Q Serve(g_s), s	2.3	0.0	0.0	0.1	9.0	0.8	0.1	0.0	0.0	0.0	0.0	11.9
Cycle Q Clear(g_c), s	2.3	0.0	0.0	0.1	9.0	0.8	23.3	0.0	0.0	23.2	0.0	11.9
Prop In Lane	1.00		0.02	1.00		1.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	580	1246	1308	710	2264	1013	97	0	0	253	0	316
V/C Ratio(X)	0.16	0.14	0.14	0.00	0.25	0.03	0.06	0.00	0.00	0.68	0.00	0.52
Avail Cap(c_a), veh/h	739	1246	1308	710	2264	1013	139	0	0	297	0	365
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	0.95	0.95	0.95	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.9	0.0	0.0	8.5	10.1	8.6	43.5	0.0	0.0	50.9	0.0	46.4
Incr Delay (d2), s/veh	0.1	0.2	0.2	0.0	0.3	0.0	0.3	0.0	0.0	5.0	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.1	0.1	0.0	4.4	0.4	0.2	0.0	0.0	6.4	0.0	5.3
LnGrp Delay(d),s/veh	7.1	0.2	0.2	8.5	10.3	8.6	43.8	0.0	0.0	55.9	0.0	47.7
LnGrp LOS	A	A	A	A	B	A	D			E		D
Approach Vol, veh/h		449			602			6			335	
Approach Delay, s/veh		1.7			10.2			43.8			51.9	
Approach LOS		A			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		32.0		98.0		32.0	8.3	89.7
Change Period (Y+Rc), s		6.0		6.5		6.0	4.0	6.5
Max Green Setting (Gmax), s		30.0		87.5		30.0	16.0	67.5
Max Q Clear Time (g_c+I1), s		25.3		2.0		25.2	4.3	11.0
Green Ext Time (p_c), s		0.7		7.6		0.7	0.1	7.6

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

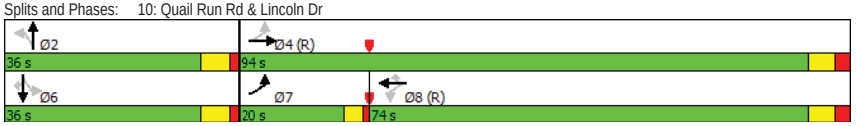
Timing Report, Sorted By Phase
10: Quail Run Rd & Lincoln Dr

11/5/2015

Phase Number	2	4	6	7	8
Movement	NBTL	EBTL	SBTL	EBL	WBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max
Maximum Split (s)	36	94	36	20	74
Maximum Split (%)	27.7%	72.3%	27.7%	15.4%	56.9%
Minimum Split (s)	33	28	33	8	28
Yellow Time (s)	4.5	4	4.5	3	4
All-Red Time (s)	1.5	2.5	1.5	1	2.5
Minimum Initial (s)	7	15	7	4	15
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7	7		7
Flash Dont Walk (s)	20	14	20		14
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	74	110	74	110	0
End Time (s)	110	74	110	0	74
Yield/Force Off (s)	104	67.5	104	126	67.5
Yield/Force Off 170(s)	84	53.5	84	126	53.5
Local Start Time (s)	74	110	74	110	0
Local Yield (s)	104	67.5	104	126	67.5
Local Yield 170(s)	84	53.5	84	126	53.5

Intersection Summary	
Cycle Length	130
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	

Splits and Phases: 10: Quail Run Rd & Lincoln Dr



HCM 2010 TWSC
30: Quail Run Rd/Hotel Access

11/5/2015

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	61	1	14	58	1	18
Future Vol, veh/h	61	1	14	58	1	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	1	15	63	1	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	69	47	0	0	78	0
Stage 1	47	-	-	-	-	-
Stage 2	22	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	936	1022	-	-	1520	-
Stage 1	975	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	935	1022	-	-	1520	-
Mov Cap-2 Maneuver	935	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	936	1520	-
HCM Lane V/C Ratio	-	-	0.072	0.001	-
HCM Control Delay (s)	-	-	9.1	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

HCM 2010 Roundabout
31: Quail Run Rd & South Residential Access

11/5/2015

Intersection	
Intersection Delay, s/veh	5.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	10	13	104	303
Demand Flow Rate, veh/h	10	13	106	309
Vehicles Circulating, veh/h	322	96	0	30
Vehicles Exiting, veh/h	17	10	332	79
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	3.6	4.0	6.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	10	13	106	309
Cap Entry Lane, veh/h	819	1027	1130	1097
Entry HV Adj Factor	1.000	1.000	0.985	0.980
Flow Entry, veh/h	10	13	104	303
Cap Entry, veh/h	819	1027	1113	1075
V/C Ratio	0.012	0.013	0.094	0.282
Control Delay, s/veh	4.5	3.6	4.0	6.1
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	1

HCM 2010 TWSC
32: Quail Run Rd & Townhome Access

11/5/2015

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	8	0	96	17	0	299
Future Vol, veh/h	8	0	96	17	0	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	0	104	18	0	325

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	439	114	0	0	123	0
Stage 1	114	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	575	939	-	-	1464	-
Stage 1	911	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	575	939	-	-	1464	-
Mov Cap-2 Maneuver	575	-	-	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	732	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	575	1464	-
HCM Lane V/C Ratio	-	-	0.015	-	-
HCM Control Delay (s)	-	-	11.4	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

APPENDIX O

ADT CALCULATIONS

Average Daily Traffic Calculations
ADT existing

Roadway	Between		And	Existing Volume	volume	Year	GR	GF
Scottsdale Road		-	Indian Bend Road	39,100	39100	2012	0.0%	1
Scottsdale Road	Indian Bend Road	-	6750 North	43,500	43500	2012	0.0%	1
Scottsdale Road	6750 North	-	Lincoln Drive	43,500	43500	2012	0.0%	1
Scottsdale Road	Lincoln Drive	-	McDowell Road	43,200	43200	2012	0.0%	1
Scottsdale Road	McDowell Road	-		40,700	40700	2012	0.0%	1
Mockingbird Lane		-	Indian Bend Road					
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	6,000	5999	2011	0.0%	1
Mockingbird Lane	Lincoln Drive	-	McDowell Road					
Indian Bend Road	Mockingbird Lane	-	Collector A					
Indian Bend Road	Collector A	-	Scottsdale Road					
Indian Bend Road	Scottsdale Road	-		16,300	16300	2012	0.0%	1
Lincoln Drive	Tatum Road			22,500	22483	2011	0.0%	1
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	13,900	13870	2015	0.0%	1
Lincoln Drive	Quail Run Road	-	Scottsdale Road	13,900	13870	2015	0.0%	1
Lincoln Drive	Scottsdale Road	-						1
McDonald Drive		-	Mockingbird Lane					
McDonald Drive	Mockingbird Lane	-	Scottsdale Road					
McDonald Drive	Scottsdale Road	-		18,700	18700	2012	0.0%	1

Average Daily Traffic Calculations
ADT Palmeraie

Roadway	Between		And	Volume from Palmeraie	
Scottsdale Road		-	Indian Bend Road	2,187	2,200
Scottsdale Road	Indian Bend Road	-	6750 North	3,388	3,400
Scottsdale Road	6750 North	-	Lincoln Drive	4,957	5,000
Scottsdale Road	Lincoln Drive	-	McDowell Road	3,526	3,500
Scottsdale Road	McDowell Road	-		2,632	2,600
Mockingbird Lane		-	Indian Bend Road	430	400
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	922	900
Mockingbird Lane	Lincoln Drive	-	McDowell Road	410	400
Indian Bend Road	Mockingbird Lane	-	Collector A	1,352	1,400
Indian Bend Road	Collector A	-	Scottsdale Road	4,062	4,100
Indian Bend Road	Scottsdale Road	-		2,056	2,100
Lincoln Drive	Tatum Road			3,392	3,400
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	3,394	3,400
Lincoln Drive	Quail Run Road	-	Scottsdale Road	2,882	2,900
Lincoln Drive	Scottsdale Road	-		1,289	1,300
McDonald Drive		-	Mockingbird Lane	408	400
McDonald Drive	Mockingbird Lane	-	Scottsdale Road	0	0
McDonald Drive	Scottsdale Road	-		894	900

Roadway	Between		And	Volume from site	
Scottsdale Road		-	Indian Bend Road	330	300
Scottsdale Road	Indian Bend Road	-	6750 North	456	500
Scottsdale Road	6750 North	-	Lincoln Drive	456	500
Scottsdale Road	Lincoln Drive	-	McDowell Road	456	500
Scottsdale Road	McDowell Road	-		390	400
Mockingbird Lane		-	Indian Bend Road	14	0
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	184	200
Mockingbird Lane	Lincoln Drive	-	McDowell Road	0	0
Indian Bend Road	Mockingbird Lane	-	Collector A	198	200
Indian Bend Road	Collector A	-	Scottsdale Road	462	500
Indian Bend Road	Scottsdale Road	-		192	200
Lincoln Drive	Tatum Road			1,154	1,200
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	700	700
Lincoln Drive	Quail Run Road	-	Scottsdale Road	516	500
Lincoln Drive	Scottsdale Road	-		516	500
McDonald Drive		-	Mockingbird Lane	0	0
McDonald Drive	Mockingbird Lane	-	Scottsdale Road	0	0
McDonald Drive	Scottsdale Road	-		66	100

Roadway	Between		And	Volume from site	
Scottsdale Road		-	Indian Bend Road	322	300
Scottsdale Road	Indian Bend Road	-	6750 North	748	700
Scottsdale Road	6750 North	-	Lincoln Drive	748	700
Scottsdale Road	Lincoln Drive	-	McDowell Road	644	600
Scottsdale Road	McDowell Road	-		518	500
Mockingbird Lane		-	Indian Bend Road	44	0
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	384	400
Mockingbird Lane	Lincoln Drive	-	McDowell Road	94	100
Indian Bend Road	Mockingbird Lane	-	Collector A	378	400
Indian Bend Road	Collector A	-	Scottsdale Road	666	700
Indian Bend Road	Scottsdale Road	-		716	700
Lincoln Drive	Tatum Road			1,976	2,000
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	1,974	2,000
Lincoln Drive	Quail Run Road	-	Scottsdale Road	1,736	1,700
Lincoln Drive	Scottsdale Road	-		1,016	1,000
McDonald Drive		-	Mockingbird Lane	0	0
McDonald Drive	Mockingbird Lane	-	Scottsdale Road	94	100
McDonald Drive	Scottsdale Road	-		220	200

Roadway	Between		And	Volume from site	
Scottsdale Road		-	Indian Bend Road	1,988	2,000
Scottsdale Road	Indian Bend Road	-	6750 North	2,555	2,600
Scottsdale Road	6750 North	-	Lincoln Drive	4,452	4,500
Scottsdale Road	Lincoln Drive	-	McDowell Road	3,478	3,500
Scottsdale Road	McDowell Road	-		2,474	2,500
Mockingbird Lane		-	Indian Bend Road	432	400
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	492	500
Mockingbird Lane	Lincoln Drive	-	McDowell Road	268	300
Indian Bend Road	Mockingbird Lane	-	Collector A	884	900
Indian Bend Road	Collector A	-	Scottsdale Road	2,242	2,200
Indian Bend Road	Scottsdale Road	-		2,108	2,100
Lincoln Drive	Tatum Road			3,348	3,300
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	3,346	3,300
Lincoln Drive	Quail Run Road	-	Scottsdale Road	3,164	3,200
Lincoln Drive	Scottsdale Road	-		1,556	1,600
McDonald Drive		-	Mockingbird Lane	378	400
McDonald Drive	Mockingbird Lane	-	Scottsdale Road	262	300
McDonald Drive	Scottsdale Road	-		894	900

Roadway	Between		And	Volume from site	
Scottsdale Road		-	Indian Bend Road	1,988	2,000
Scottsdale Road	Indian Bend Road	-	6750 North	2,555	2,600
Scottsdale Road	6750 North	-	Lincoln Drive	4,452	4,500
Scottsdale Road	Lincoln Drive	-	McDowell Road	3,478	3,500
Scottsdale Road	McDowell Road	-		2,474	2,500
Mockingbird Lane		-	Indian Bend Road	432	400
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	492	500
Mockingbird Lane	Lincoln Drive	-	McDowell Road	268	300
Indian Bend Road	Mockingbird Lane	-	Collector A	884	900
Indian Bend Road	Collector A	-	Scottsdale Road	2,242	2,200
Indian Bend Road	Scottsdale Road	-		2,108	2,100
Lincoln Drive	Tatum Road			3,348	3,300
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	3,346	3,300
Lincoln Drive	Quail Run Road	-	Scottsdale Road	3,164	3,200
Lincoln Drive	Scottsdale Road	-		1,556	1,600
McDonald Drive		-	Mockingbird Lane	378	400
McDonald Drive	Mockingbird Lane	-	Scottsdale Road	262	300
McDonald Drive	Scottsdale Road	-		894	900

Average Daily Traffic Calculations
ADT 2018 base

Roadway	Between		And	2018 w/out Zones	2015 Vol	GR to ->	2018
Scottsdale Road		-	Indian Bend Road	39,700	39100	0.5%	1.0151
Scottsdale Road	Indian Bend Road	-	6750 North	44,200	43500	0.5%	1.0151
Scottsdale Road	6750 North	-	Lincoln Drive	44,200	43500	0.5%	1.0151
Scottsdale Road	Lincoln Drive	-	McDowell Road	43,900	43200	0.5%	1.0151
Scottsdale Road	McDowell Road	-		41,300	40700	0.5%	1.0151
Mockingbird Lane		-	Indian Bend Road				
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	6,100	6000	0.5%	1.0151
Mockingbird Lane	Lincoln Drive	-	McDowell Road				
Indian Bend Road	Mockingbird Lane	-	Collector A				
Indian Bend Road	Collector A	-	Scottsdale Road				
Indian Bend Road	Scottsdale Road	-		16,500	16300	0.5%	1.0151
Lincoln Drive	Tatum Road			22,800	22500	0.5%	1.0151
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	14,100	13900	0.5%	1.0151
Lincoln Drive	Quail Run Road	-	Scottsdale Road	14,100	13900	0.5%	1.0151
Lincoln Drive	Scottsdale Road	-					1
McDonald Drive		-	Mockingbird Lane				
McDonald Drive	Mockingbird Lane	-	Scottsdale Road				
McDonald Drive	Scottsdale Road	-		19,000	18700	0.5%	1.0151

Average Daily Traffic Calculations
ADT 2023 base

Roadway	Between		And	2023 w/out Zones	2015 Vol	GR to ->	2023
Scottsdale Road		-	Indian Bend Road	40,700	39100	0.5%	1.0407
Scottsdale Road	Indian Bend Road	-	6750 North	45,300	43500	0.5%	1.0407
Scottsdale Road	6750 North	-	Lincoln Drive	45,300	43500	0.5%	1.0407
Scottsdale Road	Lincoln Drive	-	McDowell Road	45,000	43200	0.5%	1.0407
Scottsdale Road	McDowell Road	-		42,400	40700	0.5%	1.0407
Mockingbird Lane		-	Indian Bend Road				
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	6,200	6000	0.5%	1.0407
Mockingbird Lane	Lincoln Drive	-	McDowell Road				
Indian Bend Road	Mockingbird Lane	-	Collector A				
Indian Bend Road	Collector A	-	Scottsdale Road				
Indian Bend Road	Scottsdale Road	-		17,000	16300	0.5%	1.0407
Lincoln Drive	Tatum Road			23,400	22500	0.5%	1.0407
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	14,500	13900	0.5%	1.0407
Lincoln Drive	Quail Run Road	-	Scottsdale Road	14,500	13900	0.5%	1.0407
Lincoln Drive	Scottsdale Road	-					1
McDonald Drive		-	Mockingbird Lane				
McDonald Drive	Mockingbird Lane	-	Scottsdale Road				
McDonald Drive	Scottsdale Road	-		19,500	18700	0.5%	1.0407

Average Daily Traffic Calculations
ADT 2028 base

Roadway	Between		And	2028 w/out Zones	2015 Vol	GR to ->	2028
Scottsdale Road		-	Indian Bend Road	41,700	39100	0.5%	1.067
Scottsdale Road	Indian Bend Road	-	6750 North	46,400	43500	0.5%	1.067
Scottsdale Road	6750 North	-	Lincoln Drive	46,400	43500	0.5%	1.067
Scottsdale Road	Lincoln Drive	-	McDowell Road	46,100	43200	0.5%	1.067
Scottsdale Road	McDowell Road	-		43,400	40700	0.5%	1.067
Mockingbird Lane		-	Indian Bend Road				
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	6,400	6000	0.5%	1.067
Mockingbird Lane	Lincoln Drive	-	McDowell Road				
Indian Bend Road	Mockingbird Lane	-	Collector A				
Indian Bend Road	Collector A	-	Scottsdale Road				
Indian Bend Road	Scottsdale Road	-		17,400	16300	0.5%	1.067
Lincoln Drive	Tatum Road			24,000	22500	0.5%	1.067
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	14,800	13900	0.5%	1.067
Lincoln Drive	Quail Run Road	-	Scottsdale Road	14,800	13900	0.5%	1.067
Lincoln Drive	Scottsdale Road	-					1
McDonald Drive		-	Mockingbird Lane				
McDonald Drive	Mockingbird Lane	-	Scottsdale Road				
McDonald Drive	Scottsdale Road	-		20,000	18700	0.5%	1.067

Average Daily Traffic Calculations
ADT 2033 base

Roadway	Between		And	2033 w/out Zones	2015 Vol	GR to ->	2033
Scottsdale Road		-	Indian Bend Road	42,800	39100	0.5%	1.0939
Scottsdale Road	Indian Bend Road	-	6750 North	47,600	43500	0.5%	1.0939
Scottsdale Road	6750 North	-	Lincoln Drive	47,600	43500	0.5%	1.0939
Scottsdale Road	Lincoln Drive	-	McDowell Road	47,300	43200	0.5%	1.0939
Scottsdale Road	McDowell Road	-		44,500	40700	0.5%	1.0939
Mockingbird Lane		-	Indian Bend Road				
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	6,600	6000	0.5%	1.0939
Mockingbird Lane	Lincoln Drive	-	McDowell Road				
Indian Bend Road	Mockingbird Lane	-	Collector A				
Indian Bend Road	Collector A	-	Scottsdale Road				
Indian Bend Road	Scottsdale Road	-		17,800	16300	0.5%	1.0939
Lincoln Drive	Tatum Road			24,600	22500	0.5%	1.0939
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	15,200	13900	0.5%	1.0939
Lincoln Drive	Quail Run Road	-	Scottsdale Road	15,200	13900	0.5%	1.0939
Lincoln Drive	Scottsdale Road	-					1
McDonald Drive		-	Mockingbird Lane				
McDonald Drive	Mockingbird Lane	-	Scottsdale Road				
McDonald Drive	Scottsdale Road	-		20,500	18700	0.5%	1.0939

Average Daily Traffic Calculations
ADT 2018 Total

Roadway	Between		And	Base	Palmeraie	Mountain Shadows	Total	Capacity of C
Scottsdale Road		-	Indian Bend Road	39,700	2,200	300	42,500	59,900
Scottsdale Road	Indian Bend Road	-	6750 North	44,200	3,400	500	49,300	62,900
Scottsdale Road	6750 North	-	Lincoln Drive	44,200	5,000	500	50,900	62,900
Scottsdale Road	Lincoln Drive	-	McDowell Road	43,900	3,500	500	49,000	59,900
Scottsdale Road	McDowell Road	-		41,300	2,600	400	45,200	59,900
Mockingbird Lane		-	Indian Bend Road					14,800
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	6,100	900	200	7,800	14,800
Mockingbird Lane	Lincoln Drive	-	McDowell Road					14,800
Indian Bend Road	Mockingbird Lane	-	Collector A		1,400			14,800
Indian Bend Road	Collector A	-	Scottsdale Road		4,100	500		14,800
Indian Bend Road	Scottsdale Road	-		16,500	2,100	200	19,700	39,800
Lincoln Drive	Tatum Road			22,800	3,400	1,200	30,600	39,800
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	14,100	3,400	700	20,900	39,800
Lincoln Drive	Quail Run Road	-	Scottsdale Road	14,100	2,900	500	19,700	39,800
Lincoln Drive	Scottsdale Road	-			1,300			39,800
McDonald Drive		-	Mockingbird Lane					14,800
McDonald Drive	Mockingbird Lane	-	Scottsdale Road					14,800
McDonald Drive	Scottsdale Road	-		19,000	900	100	20,300	39,800

Average Daily Traffic Calculations
ADT 2023 Total

Roadway	Between		And	Base	Palmeraie	Mountain Shadows	Total	Capacity of C
Scottsdale Road		-	Indian Bend Road	40,700	2,200	300	45,500	59,900
Scottsdale Road	Indian Bend Road	-	6750 North	45,300	3,400	500	52,300	62,900
Scottsdale Road	6750 North	-	Lincoln Drive	45,300	5,000	500	55,800	62,900
Scottsdale Road	Lincoln Drive	-	McDowell Road	45,000	3,500	500	53,000	59,900
Scottsdale Road	McDowell Road	-		42,400	2,600	400	48,300	59,900
Mockingbird Lane		-	Indian Bend Road					14,800
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	6,200	900	200	8,000	14,800
Mockingbird Lane	Lincoln Drive	-	McDowell Road					14,800
Indian Bend Road	Mockingbird Lane	-	Collector A		1,400			14,800
Indian Bend Road	Collector A	-	Scottsdale Road		4,100	500		14,800
Indian Bend Road	Scottsdale Road	-		17,000	2,100	200	21,600	39,800
Lincoln Drive	Tatum Road			23,400	3,400	1,200	32,500	39,800
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	14,500	3,400	700	22,600	39,800
Lincoln Drive	Quail Run Road	-	Scottsdale Road	14,500	2,900	500	21,600	39,800
Lincoln Drive	Scottsdale Road	-			1,300			39,800
McDonald Drive		-	Mockingbird Lane					14,800
McDonald Drive	Mockingbird Lane	-	Scottsdale Road					14,800
McDonald Drive	Scottsdale Road	-		19,500	900	100	21,500	39,800

Average Daily Traffic Calculations
ADT 2028 Total

Roadway	Between		And	Base	Palmeraie	Mountain Shadows	Total	Capacity of C
Scottsdale Road		-	Indian Bend Road	41,700	2,200	300	46,500	59,900
Scottsdale Road	Indian Bend Road	-	6750 North	46,400	3,400	500	53,400	62,900
Scottsdale Road	6750 North	-	Lincoln Drive	46,400	5,000	500	56,900	62,900
Scottsdale Road	Lincoln Drive	-	McDowell Road	46,100	3,500	500	54,100	59,900
Scottsdale Road	McDowell Road	-		43,400	2,600	400	49,300	59,900
Mockingbird Lane		-	Indian Bend Road					14,800
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	6,400	900	200	8,200	14,800
Mockingbird Lane	Lincoln Drive	-	McDowell Road					14,800
Indian Bend Road	Mockingbird Lane	-	Collector A		1,400			14,800
Indian Bend Road	Collector A	-	Scottsdale Road		4,100	500		14,800
Indian Bend Road	Scottsdale Road	-		17,400	2,100	200	22,000	39,800
Lincoln Drive	Tatum Road			24,000	3,400	1,200	33,100	39,800
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	14,800	3,400	700	22,900	39,800
Lincoln Drive	Quail Run Road	-	Scottsdale Road	14,800	2,900	500	21,900	39,800
Lincoln Drive	Scottsdale Road	-			1,300			39,800
McDonald Drive		-	Mockingbird Lane					14,800
McDonald Drive	Mockingbird Lane	-	Scottsdale Road					14,800
McDonald Drive	Scottsdale Road	-		20,000	900	100	22,000	39,800

Average Daily Traffic Calculations
ADT 2033 Total

Roadway	Between		And	Base	Palmeraie	Mountain Shadows	Total	Capacity of C
Scottsdale Road		-	Indian Bend Road	42,800	2,200	300	47,600	59,900
Scottsdale Road	Indian Bend Road	-	6750 North	47,600	3,400	500	54,600	62,900
Scottsdale Road	6750 North	-	Lincoln Drive	47,600	5,000	500	58,100	62,900
Scottsdale Road	Lincoln Drive	-	McDowell Road	47,300	3,500	500	55,300	59,900
Scottsdale Road	McDowell Road	-		44,500	2,600	400	50,400	59,900
Mockingbird Lane		-	Indian Bend Road					14,800
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	6,600	900	200	8,400	14,800
Mockingbird Lane	Lincoln Drive	-	McDowell Road					14,800
Indian Bend Road	Mockingbird Lane	-	Collector A		1,400			14,800
Indian Bend Road	Collector A	-	Scottsdale Road		4,100	500		14,800
Indian Bend Road	Scottsdale Road	-		17,800	2,100	200	22,400	39,800
Lincoln Drive	Tatum Road			24,600	3,400	1,200	33,700	39,800
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	15,200	3,400	700	23,300	39,800
Lincoln Drive	Quail Run Road	-	Scottsdale Road	15,200	2,900	500	22,300	39,800
Lincoln Drive	Scottsdale Road	-			1,300			39,800
McDonald Drive		-	Mockingbird Lane					14,800
McDonald Drive	Mockingbird Lane	-	Scottsdale Road					14,800
McDonald Drive	Scottsdale Road	-		20,500	900	100	22,500	39,800

Average Daily Traffic Calculations
ADT Capacity Summary

Roadway	Between		And	2018 Site	2023+ Site	2018 Total	2023 Total	2028 Total	2033 Total	Capacity LOS D	2033 Extra Capacity
Scottsdale Road		-	Indian Bend Road	300	2,000	42,500	45,500	46,500	47,600	59,900	12,300
Scottsdale Road	6750 North	-	Lincoln Drive	700	4,500	50,900	55,800	56,900	58,100	62,900	4,800
Scottsdale Road	Lincoln Drive	-	McDowell Road	600	3,500	49,000	53,000	54,100	55,300	59,900	4,600
Scottsdale Road	McDowell Road	-		500	2,500	45,200	48,300	49,300	50,400	59,900	9,500
Mockingbird Lane	Indian Bend Road	-	Lincoln Drive	400	500	7,800	8,000	8,200	8,400	14,800	6,400
Indian Bend Road	Scottsdale Road	-		700	2,100	19,700	21,600	22,000	22,400	39,800	17,400
Lincoln Drive	Tatum Road			2,000	3,300	30,600	32,500	33,100	33,700	39,800	6,100
Lincoln Drive	Mockingbird Lane	-	Quail Run Road	2,000	3,300	20,900	22,600	22,900	23,300	39,800	16,500
McDonald Drive	Scottsdale Road	-		200	900	20,300	21,500	22,000	22,500	39,800	17,300

APPENDIX P

SIGHT DISTANCE ANALYSIS

CivTech

Assumptions and/or Givens

Elements of Design from AASHTO 2004			***AASHTO Ref***
Driver Eye Height			
Passenger Vehicle	3.50	ft	p 127
Truck	7.60	ft	p 127
Object Height			
Stopping Sight Distance	2.00	ft	p 127
Passing Sight Distance	3.50	ft	p 127
Vehicle Height	4.25	ft	p 127
Driver Eye Location			
From Edge of Major Rd Traveled Way	14.50	ft	p 657
Deceleration Rate (a)			
Passenger Vehicle	11.20	ft/sec^2	p 111
Truck	N/A	ft	
Brake reaction time (t)	2.50	sec	p 113

Site Specific Data

Major Street Design Speed (V_{major})		45	MPH
Grades - Approaching Minor Street from: (— = approaching downhill)			
Left (G_L)		0.00	%
Right (G_R)		0.00	%
Approach Grade Adjustment Factor	Left	1.0	p 658
	Right	1.0	
Major Road Through Lanes on Each Approach		2.0	
Median Width (in "Lane Equivalents")		1.2	
Bicycle Lane Width (in "Lane Equivalents")		0.0	
Minor Road Approach Upgrade, if >3%		0.00	%
Minor Road Access (check restricted)			
	LI	LO/Th	RO

Stopping Sight Distance = Brake Reaction Distance + Braking Distance

Neglecting Effect of Grade $d=1.47Vt+1.075\frac{V^2}{a}$ p 113

Calculated d= 359.8 ft
Design d= 360 ft

With Effect of Grade $d=1.47Vt+\frac{V^2}{30((\frac{a}{32.2})\pm G)}$ p 114

Calculated d= 359.1 ft - left
360 ft - right
Design d= 359.1 ft - left
360 ft - right

SSD's do not consider design for truck operations, since better visibility is considered to offset longer braking distance. p 114

Intersection Sight Distances

Case B—Intersections with Stop Control on the Minor Road		***AASHTO Ref***
		p 657
Case B1—Left Turn from the Minor Road		pp 657ff
Design Vehicle	Time Gap (t_g)	
Passenger Car	7.5 sec	p 660
Single-Unit Tuck	9.5 sec	p 660
Combination Truck	11.5 sec	p 660
Time gap adjustments		
Add'l lanes to cross (1st is assumed)		
Passenger Car	0.5 sec	p 660
Trucks	0.7 sec	p 660
Minor Approach Upgrade (Per each 1%>3%)	0.2 sec	p 660
Site data		
Major Road + Bike Lanes on Left Approach	2.0	p 660
Minor Road Approach Upgrade, if >3%	0 %	p 660

Time Gap based on site data

Design Vehicle Gap+Adj for Approach Grade>3%+Adjs for Add'l Lanes & Median

Passenger Car	8.6 sec
Single-Unit Tuck	11.0 sec
Combination Truck	13.0 sec

ISD to left & right along Major Road $ISD=1.47V_{major}t_g$ (ft) p 659

			ISD to Left and Right
Passenger Car	calculated	ISD=	568.9 ft
	design	ISD=	570 ft
Single-Unit Tuck	calculated	ISD=	730.3 ft
	design	ISD=	735 ft
Combination Truck	calculated	ISD=	862.6 ft
	design	ISD=	865 ft

Intersection Sight Distances (cont'd)

			AASHTO Ref
Case B2—Right Turn from the Minor Road			p 663
&			
Case B3—Crossing Maneuver from the Minor Road			pp 663ff
Design Vehicle	Time Gap (t_g)		
Passenger Car	6.5	sec	p 664
Single-Unit Tuck	8.5	sec	p 664
Combination Truck	10.5	sec	p 664
Time gap adjustments - Case B-3 Only*			
Add'l lanes to cross (1st is assumed)			
Passenger Car	0.5	sec	p 664
Trucks	0.7	sec	p 664
Minor Approach Upgrade (Per each 1%>3%)	0.1	sec	p 664
Site data			
Major Road + Bike Lanes on Left Approach	2.0		p 664
Minor Road Approach Upgrade, if >3%	0	%	p 664

Time Gap based on site data (sec)	B2 & B3	B3 Only
Design Vehicle Gap+Adj for Approach Grade>3%(+Adjs for Add'l Lanes & Median for B3)		
Passenger Car	7.6	8.1
Single-Unit Tuck	10.0	10.7
Combination Truck	12.0	12.7

ISD to left (B2/B3) & right (B3) along Major Rd $SD=1.47V_{major}t_g$ (ft) p 659

			ISD to Left (B2 & B3)	ISD to right (B3 Only)
Passenger Car	calculated	ISD=	502.7	535.8
	design	ISD=	505	540
Single-Unit Tuck	calculated	ISD=	664.1	710.5
	design	ISD=	665	715
Combination Truck	calculated	ISD=	796.4	842.8
	design	ISD=	800	845

*Number of major road lanes is irrelevant in Case B2.

The differences between Case B1 and Cases B2 & B3 are reduced time gaps and time gap adjustment for the minor approach upgrade. p 663

Intersection Sight Distances (cont'd)

			AASHTO Ref
Case F—Left Turns from the Major Road			pp 674ff
Design Vehicle	Time Gap (t_g)		
Passenger Car	5.5	sec	p 674
Single-Unit Tuck	6.5	sec	p 674
Combination Truck	7.5	sec	p 674
Time gap adjustments			
Add'l lanes to cross (1 assumed)			
Passenger Car	0.5	sec	p 674
Trucks	0.7	sec	p 674
Site data			
Opposing Lanes (adj'd for x-wide median)	2.2		
Time Gap based on site data			
Design Vehicle Gap+Adj for Add'l Opposing Lanes			
Passenger Car	6.6	sec	
Single-Unit Tuck	8.0	sec	
Combination Truck	9.0	sec	

ISD to front along Major Road $ISD=1.47V_{major}t_g$ (ft) p 659

Passenger Car	calculated	ISD=	436.6	ft
	design	ISD=	440	ft
Single-Unit Tuck	calculated	ISD=	531.8	ft
	design	ISD=	535	ft
Combination Truck	calculated	ISD=	598.0	ft
	design	ISD=	600	ft

The differences between Case F and Cases B1, B2 & B3 are reduced time gaps and no time gap adjustment for any minor approach upgrade. p 663

SIGHT DISTANCE SUMMARY

Sight Distance Type	Governing Case	Car	SU Truck	Combo Truck
Stopping				
Without effect of grade		360	N/A	N/A
With effect of grade on left		360	N/A	N/A
With effect of grade on right		360	N/A	N/A
Intersection				
To Right	B1	570	735	865
To Left	B2/B3	505	665	800
On Major Road	F	440	535	600

Assumptions and/or Givens

Elements of Design from AASHTO 2004			***AASHTO Ref***
Driver Eye Height			
Passenger Vehicle	3.50	ft	p 127
Truck	7.60	ft	p 127
Object Height			
Stopping Sight Distance	2.00	ft	p 127
Passing Sight Distance	3.50	ft	p 127
Vehicle Height	4.25	ft	p 127
Driver Eye Location			
From Edge of Major Rd Traveled Way	14.50	ft	p 657
Deceleration Rate (a)			
Passenger Vehicle	11.20	ft/sec^2	p 111
Truck	N/A	ft	
Brake reaction time (t)	2.50	sec	p 113

Site Specific Data

Major Street Design Speed (V_{major})	35	MPH	
Grades - Approaching Minor Street from: (— = approaching downhill)			
Left (G_L)	0.00	%	
Right (G_R)	0.00	%	
Approach Grade Adjustment Factor Left	1.0		p 658
Right	1.0		
Major Road Through Lanes on Each Approach	2.0		
Median Width (in "Lane Equivalents")	1.2		
Bicycle Lane Width (in "Lane Equivalents")	0.0		
Minor Road Approach Upgrade, if >3%	0.00	%	
Minor Road Access (check restricted)			
	LI	LO/Th	RO

Stopping Sight Distance = Brake Reaction Distance + Braking Distance

Neglecting Effect of Grade

$$d=1.47Vt+1.075\frac{V^2}{a}$$ p 113

Calculated d= 246.2 ft
Design d= 250 ft

With Effect of Grade

$$d=1.47Vt+\frac{V^2}{30((\frac{a}{32.2})\pm G)}$$ p 114

Calculated d= 246.4 ft - left
250 ft - right
Design d= 246.4 ft - left
250 ft - right

SSD's do not consider design for truck operations, since better visibility is considered to offset longer braking distance. p 114

Intersection Sight Distances

Case B—Intersections with Stop Control on the Minor Road p 657

Case B1—Left Turn from the Minor Road pp 657ff

Design Vehicle	Time Gap (t_g)		
Passenger Car	7.5	sec	p 660
Single-Unit Tuck	9.5	sec	p 660
Combination Truck	11.5	sec	p 660
Time gap adjustments			
Add'l lanes to cross (1st is assumed)			
Passenger Car	0.5	sec	p 660
Trucks	0.7	sec	p 660
Minor Approach Upgrade (Per each 1%>3%)	0.2	sec	p 660

Site data

Major Road + Bike Lanes on Left Approach	2.0		p 660
Minor Road Approach Upgrade, if >3%	0	%	p 660

Time Gap based on site data

Design Vehicle Gap+Adj for Approach Grade>3%+Adjs for Add'l Lanes & Median

Passenger Car	8.6	sec
Single-Unit Tuck	11.0	sec
Combination Truck	13.0	sec

ISD to left & right along Major Road $ISD=1.47V_{major}t_g$ (ft) p 659

		ISD to Left and Right	
Passenger Car	calculated ISD=	442.5	ft
	design ISD=	445	ft
Single-Unit Tuck	calculated ISD=	568.0	ft
	design ISD=	570	ft
Combination Truck	calculated ISD=	670.9	ft
	design ISD=	675	ft

Intersection Sight Distances (cont'd)

			AASHTO Ref
Case B2—Right Turn from the Minor Road			p 663
&			
Case B3—Crossing Maneuver from the Minor Road			pp 663ff
Design Vehicle	Time Gap (t_g)		
Passenger Car	6.5	sec	p 664
Single-Unit Tuck	8.5	sec	p 664
Combination Truck	10.5	sec	p 664
Time gap adjustments - Case B-3 Only*			
Add'l lanes to cross (1st is assumed)			
Passenger Car	0.5	sec	p 664
Trucks	0.7	sec	p 664
Minor Approach Upgrade (Per each 1%>3%)	0.1	sec	p 664
Site data			
Major Road + Bike Lanes on Left Approach	2.0		p 664
Minor Road Approach Upgrade, if >3%	0	%	p 664

Time Gap based on site data (sec)	B2 & B3	B3 Only
Design Vehicle Gap+Adj for Approach Grade>3%(+Adjs for Add'l Lanes & Median for B3)		
Passenger Car	7.6	8.1
Single-Unit Tuck	10.0	10.7
Combination Truck	12.0	12.7

ISD to left (B2/B3) & right (B3) along Major Rd $SD=1.47V_{major}t_g$ (ft) p 659

			ISD to Left (B2 & B3)	ISD to right (B3 Only)
Passenger Car	calculated	ISD=	391.0	416.7
	design	ISD=	395	420
Single-Unit Tuck	calculated	ISD=	516.6	552.6
	design	ISD=	520	555
Combination Truck	calculated	ISD=	619.5	655.5
	design	ISD=	620	660

*Number of major road lanes is irrelevant in Case B2.

The differences between Case B1 and Cases B2 & B3 are reduced time gaps and time gap adjustment for the minor approach upgrade. p 663

Intersection Sight Distances (cont'd)

			AASHTO Ref
Case F—Left Turns from the Major Road			pp 674ff
Design Vehicle	Time Gap (t_g)		
Passenger Car	5.5	sec	p 674
Single-Unit Tuck	6.5	sec	p 674
Combination Truck	7.5	sec	p 674
Time gap adjustments			
Add'l lanes to cross (1 assumed)			
Passenger Car	0.5	sec	p 674
Trucks	0.7	sec	p 674
Site data			
Opposing Lanes (adj'd for x-wide median)	2.2		
Time Gap based on site data			
Design Vehicle Gap+Adj for Add'l Opposing Lanes			
Passenger Car	6.6	sec	
Single-Unit Tuck	8.0	sec	
Combination Truck	9.0	sec	

ISD to front along Major Road $ISD=1.47V_{major}t_g$ (ft) p 659

Passenger Car	calculated	ISD=	339.6	ft
	design	ISD=	340	ft
Single-Unit Tuck	calculated	ISD=	413.7	ft
	design	ISD=	415	ft
Combination Truck	calculated	ISD=	465.1	ft
	design	ISD=	470	ft

The differences between Case F and Cases B1, B2 & B3 are reduced time gaps and no time gap adjustment for any minor approach upgrade. p 663

SIGHT DISTANCE SUMMARY

Sight Distance Type	Governing Case	Car	SU Truck	Combo Truck
Stopping				
Without effect of grade		250	N/A	N/A
With effect of grade on left		250	N/A	N/A
With effect of grade on right		250	N/A	N/A
Intersection				
To Right	B1	445	570	675
To Left	B2/B3	395	520	620
On Major Road	F	340	415	470

Assumptions and/or Givens

Elements of Design from AASHTO 2004			***AASHTO Ref***
Driver Eye Height			
Passenger Vehicle	3.50	ft	p 127
Truck	7.60	ft	p 127
Object Height			
Stopping Sight Distance	2.00	ft	p 127
Passing Sight Distance	3.50	ft	p 127
Vehicle Height	4.25	ft	p 127
Driver Eye Location			
From Edge of Major Rd Traveled Way	14.50	ft	p 657
Deceleration Rate (a)			
Passenger Vehicle	11.20	ft/sec^2	p 111
Truck	N/A	ft	
Brake reaction time (t)	2.50	sec	p 113

Site Specific Data

Major Street Design Speed (V_{major})	50	MPH	
Grades - Approaching Minor Street from: (— = approaching downhill)			
Left (G_L)	0.00	%	
Right (G_R)	0.00	%	
Approach Grade Adjustment Factor Left	1.0		p 658
Right	1.0		
Major Road Through Lanes on Each Approach	2.0		
Median Width (in "Lane Equivalents")	1.2		
Bicycle Lane Width (in "Lane Equivalents")	0.0		
Minor Road Approach Upgrade, if >3%	0.00	%	
Minor Road Access (check restricted)			
	LI	LO/Th	RO

Stopping Sight Distance = Brake Reaction Distance + Braking Distance

Neglecting Effect of Grade $d=1.47Vt+1.075\frac{V^2}{a}$ p 113

Calculated d= 423.8 ft
Design d= 425 ft

With Effect of Grade $d=1.47Vt+\frac{V^2}{30((\frac{a}{32.2})\pm G)}$ p 114

Calculated d= 423.6 ft - left
425 ft - right
Design d= 423.6 ft - left
425 ft - right

SSD's do not consider design for truck operations, since better visibility is considered to offset longer braking distance. p 114

Intersection Sight Distances

Case B—Intersections with Stop Control on the Minor Road ***AASHTO Ref*** p 657

Case B1—Left Turn from the Minor Road pp 657ff

Design Vehicle	Time Gap (t_g)		
Passenger Car	7.5	sec	p 660
Single-Unit Tuck	9.5	sec	p 660
Combination Truck	11.5	sec	p 660
Time gap adjustments			
Add'l lanes to cross (1st is assumed)			
Passenger Car	0.5	sec	p 660
Trucks	0.7	sec	p 660
Minor Approach Upgrade (Per each 1%>3%)	0.2	sec	p 660

Site data

Major Road + Bike Lanes on Left Approach	2.0		p 660
Minor Road Approach Upgrade, if >3%	0	%	p 660

Time Gap based on site data

Design Vehicle Gap+Adj for Approach Grade>3%+Adjs for Add'l Lanes & Median

Passenger Car	8.6	sec
Single-Unit Tuck	11.0	sec
Combination Truck	13.0	sec

ISD to left & right along Major Road $ISD=1.47V_{major}t_g$ (ft) p 659

			ISD to Left and Right	
Passenger Car	calculated	ISD=	632.1	ft
	design	ISD=	635	ft
Single-Unit Tuck	calculated	ISD=	811.4	ft
	design	ISD=	815	ft
Combination Truck	calculated	ISD=	958.4	ft
	design	ISD=	960	ft

SCHEDULE 2
TO
THE RITZ-CARLTON STIPULATIONS

Post-Approval Community Outreach Plan

Subsequent to approval of SUP 15-01, the Owner will keep neighbors apprised of the status of the project at follows:

1. The Owner will send a quarterly report to Paradise Valley property owners within one thousand (1,000) feet of the Property, advising them of current status, any changes, and anticipated construction commencement dates if known.

2. These quarterly reports will continue during construction of the Property and include anticipated construction schedules and progress.

3. There will be two annual reports upon completion of construction of the Property. The first of these will announce that construction is complete and the second, approximately one year later, will indicate that the post-approval communication process has been completed.

Each communication will contain a name and contact information for the Owner (which may vary depending on the project status at the time) so that any neighbors with a question or concern will be able to contact a Resort representative with their question or concern.

SCHEDULE 3
TO
THE RITZ-CARLTON STIPULATIONS

Town Code and Zoning Ordinance as of the Approval Date

These documents are on file at the Town of Paradise Valley Clerk's Office and may be viewed during normal business hours

Town Hall
6401 E. Lincoln Drive
Paradise Valley, AZ 85253

PARADISE VALLEY MUNICIPAL CODE
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CHAPTER 1 GENERAL

Article 1-1 HOW CODE DESIGNATED AND CITED

The ordinances embraced in the following chapters and sections shall constitute and be designated "The Code of the Town of Paradise Valley, Arizona," and may be so cited. Such Code may also be cited as the "Paradise Valley Town Code."

Article 1-2 CONSTRUCTION OF ORDINANCES

The rules and the definitions set forth in this chapter shall be observed in the construction of this Code and the ordinances of the Town unless such construction would be inconsistent with either the manifest intent of the Council or the context of this Code or the ordinances of the Town.

Article 1-3 DEFINITIONS [156]

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Section 1-3-1 General Rules Regarding Definitions

All words and phrases shall be construed and understood according to the common and approved usage of the language; but technical words and phrases and such others as may have acquired a peculiar and appropriate meaning in the law shall be construed and understood according to such peculiar and appropriate meaning.

Section 1-3-2 Acts by Agents

When an ordinance requires an act to be done which may by law as well be done by an agent as by the principal, such requirement shall be construed to include all such acts when done by an authorized agent.

Section 1-3-3 Code

The words "the Code" or "this Code" shall mean "The Code of the Town of Paradise Valley, Arizona," unless the context indicates otherwise.

Section 1-3-4 Council

Whenever the word "Council" is used, it shall be construed to mean the Common Council of the Town of Paradise Valley, Arizona.

Section 1-3-5 Day

A "day" is the period of time between any midnight and the midnight following.

Section 1-3-6 Daytime, Nighttime

"Daytime" is the period of time between sunrise and sunset. "Nighttime" is the period of time between sunset and sunrise.

Section 1-3-7 Department, Board, Commission, Office, Officer, or Employee

Whenever any "department, board, commission, office, officer, or employee" is referred to, it shall mean a department, board, commission, office, officer, or employee of the Town, unless the context clearly indicates otherwise.

Section 1-3-8 Reserved [156]

Section 1-3-9 Gender; Singular and Plural

Words of the masculine gender include the feminine; and words in the singular number include the plural, and words in the plural number include the singular.

Section 1-3-10 In the Town

The words "in the Town" or "within the Town" shall mean and include all territory over which the Town now has, or shall hereafter acquire, jurisdiction for the exercise of its police powers or other regulatory powers.

Section 1-3-11 Joint Authority

All words purporting to give a joint authority to three or more Town officers or other persons shall be construed as giving such authority to a majority of such officers or other persons unless it shall be otherwise expressly declared in the law giving the authority.

Section 1-3-12 Month

The word "month" shall mean a calendar month.

Section 1-3-13 Oath

"Oath" includes affirmation or declaration.

Section 1-3-14 Or, And

"Or" may be read "and," and "and" may be read "or" if the sense requires it.

Section 1-3-15 Person

The word "person" shall extend and be applied to firms, corporations, partnerships, or voluntary associations, as well as to individuals, unless plainly inapplicable.

Section 1-3-16 Personal Property

"Personal property" includes every species of property, except real property as defined in this Article.

Section 1-3-17 Preceding, Following

The words "preceding" and "following" mean next before and next after, respectively.

Section 1-3-18 Property

The word "property" shall include real and personal property.

Section 1-3-19 Real Property

"Real property" shall include lands, tenements, and hereditaments.

Section 1-3-20 Shall, May

"Shall" is mandatory, and "may" is permissive.

Section 1-3-21 Shall Have Been

The words "shall have been" include past and future cases.

Section 1-3-22 Signature or Subscription by Mark

"Signature" or "subscription" includes a mark when the signer cannot write, such signer's or subscriber's name being written near the mark by a witness who writes his own name near the signer's or subscriber's name; but a signature or subscription by mark can be acknowledged or can serve as a signature of subscription to a sworn statement only when two witnesses so sign their own names thereto.

Section 1-3-23 State

The words "the State" shall be construed to mean the State of Arizona.

Section 1-3-24 Tenant or Occupant

The word "tenant" or "occupant" applied to a building or land shall include any person holding a written or an oral lease of or who occupies the whole or part of such building or land, either alone or with others.

Section 1-3-25 Tenses

The present tense includes the past and future tenses, and the future includes the present.

Section 1-3-26 Time-Reasonable

In all cases where any section of this Code shall require any act to be done in a reasonable time or reasonable notice to be given, such reasonable time or notice shall be deemed to mean such time only as may be necessary for the prompt performance of such duty, or compliance with such notice.

Section 1-3-27 Time-Computation [538]

The time within which an act is to be done as provided in this Code or in any order issued pursuant to any ordinance, when expressed in days, shall be computed by excluding the first day and including the last, except that if the last day is a Saturday, Sunday or holiday, it shall be excluded; and when such time is expressed in hours, the whole of Saturday, Sunday or a holiday, from midnight to midnight, shall be excluded.

Section 1-3-28 Town

Whenever the word "Town" is used, it shall be construed to mean the Town of Paradise Valley, Arizona.

Section 1-3-29 Truck [156]

The word "truck" shall mean any motor vehicle with a gross vehicle weight of 10,000 pounds or heavier designed or used primarily for the carrying of property other than the effects of the driver or passengers.

Section 1-3-30 Truck Route [156]

The term "truck route" shall mean a way over certain streets, as designated in Section 11-2-17 along which trucks coming into and going out of the Town must operate.

Section 1-3-31 Week

A "week" consists of seven consecutive days.

Section 1-3-32 Writing

"Writing" includes any form of recorded message capable of comprehension by ordinary visual means. Whenever any notice, report, statement, or record is required or authorized by this Code, it shall be made in writing in the English language unless it is expressly provided otherwise.

Section 1-3-33 Year

The word "year" shall mean a calendar year, except where otherwise provided.

Article 1-4 REFERENCE TO CHAPTERS, ARTICLES OR SECTIONS: CONFLICTING PROVISIONS

1-4-1 Additional Rules of Construction
1-4-2 References to this Code
1-4-3 Conflicting Provisions--Different Chapters
1-4-4 Conflicting Provisions--Same Chapter

Section 1-4-1 Additional Rules of Construction

In addition to the rules of construction specified in the previous Article, the rules set forth in Section 1-4-2, 1-4-3, and 1-4-4 shall be observed in the construction of this Code.

Section 1-4-2 References to This Code

All references to chapters, Articles, or sections are to be chapters, Articles, and sections of this Code unless otherwise specified.

Section 1-4-3 Conflicting Provisions--Different Chapters

If the provisions of different chapters of this Code conflict with or contravene each other, the provisions of each chapter shall prevail as to all matters and questions growing out of the subject matter of such chapter.

Section 1-4-4 Conflicting Provisions--Same Chapter

If conflicting provisions are found in different sections of the same chapter, the provisions of the section which is last in numerical order shall prevail unless such construction is inconsistent with the meaning of such chapter.

Article 1-5 SECTION HEADINGS

Headings of the several sections of this Code are intended as a convenience to indicate the contents of the section and shall not be deemed to taken to be titles of such section, nor as any part of the section, nor unless expressly so provided, shall they be so deemed when any of such section, including the headings, is amended or re-enacted.

Article 1-6 EFFECT OF REPEAL

When any ordinance repealing a former ordinance, clause, or provision, shall be itself repealed, such repeal shall not be construed to revive such former ordinance, clause or provision, unless it shall be expressly so provided. The repeal of an ordinance shall not affect any punishment or penalty incurred before the repeal took effect nor any suit, prosecution or proceeding pending at the time of the repeal, for any offense committed under the ordinance repealed.

Article 1-7 SEVERABILITY OF PARTS OF CODE

It is hereby declared to be the intention of the Council that the sections, paragraphs, sentences, clauses, and phrases of this Code shall be severable, and if any provision of this Code is held unconstitutional or illegal for any reason by a court of competent jurisdiction, such unconstitutionality or illegality shall not affect any of the remaining provisions of the Code.

Article 1-8 FISCAL YEAR

The fiscal year of the Town shall commence on the first day of July of each year and shall end on the thirtieth day of June of each year thereafter.

Article 1-9 PENALTY [1 178 496]

Section 1-9-1 Unlawful Acts as Misdemeanor
Section 1-9-2 Punishment for Misdemeanor When Not Otherwise Prescribed
Section 1-9-3 Civil Penalties Prescribed
Section 1-9-4 Repeat Offender

Section 1-9-1 Unlawful Acts as Misdemeanor

When an act or omission is declared by statute or by this code or by any ordinance of the Town to be unlawful and no penalty is prescribed by such statute, code or ordinance, the act or omission is punishable as a misdemeanor.

Section 1-9-2 Punishment For Misdemeanor When Not Otherwise Prescribed

Except when a different punishment is prescribed, an unlawful act or omission which is declared to be a misdemeanor is punishable by imprisonment for a period of time not to exceed six months or by a fine not to exceed two thousand five hundred dollars or by both such fine and imprisonment. Each day that a violation continues shall be a separate offense punishable as described.

Section 1-9-3 Civil Penalties Prescribed [550]

Any violation of the provisions of this Code or amendments thereto shall also constitute a civil offense, and any person who is served with a citation charging such violation and who admits, or is found responsible for such offense shall be liable to pay to the Town a civil sanction in an amount not to exceed seven hundred and fifty ($750) dollars. Each day that a violation continues shall be a separate offense punishable as described.

Section 1-9-4 Repeat Offender

A person who commits a violation of the provisions of this Code or amendments thereto after previously having been found responsible for committing two (2) or more civil violations of this Code within a twenty-four (24) month period - whether by admission, by payment of the fine, by default or by judgment after hearing – shall be guilty of a criminal misdemeanor. The Town Prosecutor is authorized to file a criminal misdemeanor complaint in the Paradise Valley Court against repeat offenders who violate this section. Punishment will be as prescribed under Section 1-9-2. For purposes of calculating the twenty-four (24) month period under this paragraph, the dates of the commission of the offenses are the determining factor.

Article 1-10 REPEAL OF EXISTING ORDINANCES

1-10-1 Effective Date of Repeal
1-10-2 Ordinances Exempt from Repeal

Section 1-10-1 Effective Date of Repeal

All resolutions in conflict with any provisions of this Code; and ordinances of the Town of Paradise Valley except those specially exempted in this Article, now in force and effect are hereby repealed effective at twelve o'clock noon on the 26th day of March, 1974, but all rights, duties, and obligations created by said ordinances shall continue and exist in all respects as if this Code had not been adopted and enacted.

Section 1-10-2 Ordinances Exempt from Repeal

The adoption and enactment of this Code shall not be construed to repeal or in any way to affect or modify unless otherwise specifically provided for herein:

A. Any special ordinances or resolutions regarding franchises, annexations, dedications, traffic control regulations, signs and devices, and speed limits.

B. Any ordinance making an appropriation.

C. Any ordinance affecting any bond issue or by which any bond issue may have been authorized.

D. The running of the statutes of limitations in force at the time this Code becomes effective.

E. The continued existence and operation of any department, agency, commission, or office heretofore legally established or held.

F. Any bond of any public officer.

G. Any taxes, fees, assessments, or other charges incurred or imposed.

H. Any ordinances authorizing, ratifying, confirming, approving, or accepting any compact or contract with any other municipality, the State of Arizona, or any county or subdivision thereof, or with the United States or any agency or instrumentality thereof.

Article 1-11 EFFECTIVE DATE OF CODE

Each and every section of this Code as herein contained and hereby enacted shall take effect and be in force on and after twelve o'clock noon on the 26th day of March, 1974, except that where a later effective date is provided, it shall prevail.

FOOTNOTES

1 Ordinance #146 - 9/29/78
156 Ordinance #275 - 12/17/87
178 Ordinance #302 - 9/28/89
496 Ordinance # 496 – 3/9/00
538 Ordinance # 538 – 01/22/04
550 Ordinance # 550 – 12/16/2004

CHAPTER 2 MAYOR AND COUNCIL

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2-1-2 Corporate Powers
2-1-3 Assumption of Duties [668]
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2-1-5 Compensation [668]
2-1-6 Oath of Office
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Article 2-5 **COMMITTEES AND COMMISSIONS**

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2-5-2 Planning Commission [6, 7, 429, 532 575 623 643 646 684]
2-5-3 Board of Adjustment [8, 9, 81, 176, 189 583 621 623 646 654 685]

2-5-4 Personnel Board [401 466 Repealed]
2-5-5 Personnel Appeals Board [401 655 686]
2-5-6 Hillside Building Committee [425 461 608 629 683]
2-5-7 Special Use Permit Review Committee (SUPREC) [425 474 Repealed]

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CHAPTER 2 MAYOR AND COUNCIL

Article 2-1 COUNCIL

2-1-1 Elected Officers [451 606 668]
2-1-2 Corporate Powers
2-1-3 Assumption of Duties [668]
2-1-4 Vacancies in Council [615 640]
2-1-5 Compensation [668]
2-1-6 Oath of Office
2-1-7 Bond [606 668]

Section 2-1-1 Elected Officers [451 606 668]

A. The elected officers of the Town shall be a Mayor and six Council Members. The Mayor and Council Members shall constitute the Council and shall continue in office until assumption of duties of office by their duly elected successors.

B. The Mayor shall serve a two year term of office.

Section 2-1-2 Corporate Powers

The corporate powers of the Town shall be vested in the Council and shall be exercised only as directed or authorized by law. All powers of the Council shall be exercised by ordinance, resolution, order, or motion.

Section 2-1-3 Assumption of Duties [668]

The Mayor and Council Members shall assume the duties of office at the first regularly scheduled Council meeting in January following the election at which they were elected.

Section 2-1-4 Vacancies in Council [615 640]

A. Council vacancies shall be filled as provided in state law pursuant to A.R.S. § 9-235.

B. The member appointed shall meet the qualifications established in A.R.S. § 9-232, or successor statute, as applicable.

Section 2-1-5 Compensation

The compensation of elective officers of the Town shall be fixed from time to time by resolution of the Council; provided, that the compensation allowed to the Mayor and Council Members shall not exceed that allowed by State statutes.

Section 2-1-6 Oath of Office

All Town officers, whether elected by the people or appointed by the Mayor or Council, shall before entering upon the duties of the office, subscribe to the following oath of office or such other oath as may be prescribed by law:

> I, _____, do solemnly swear (or affirm) that I will support the Constitution of the United States and the Constitution and laws of the State of Arizona; that I will bear true faith and allegiance to the same, and defend them against all enemies, foreign and domestic, and that I will faithfully and impartially discharge the duties of the office of _____ of the Town of Paradise Valley, Arizona, according to the best of my ability, so help me God, (or I so do affirm).

Section 2-1-7 Bond [606 668]

Unless a blanket bond or other equivalent coverage is provided by the Town prior to taking office, every Elected Officer shall execute and file an official bond, enforceable against the principal and his sureties, conditioned on the due and faithful performance of his official duties, payable to the State and to and for the use and benefit of the Town or any such officer in his official capacity. Bonds shall be in such sum as set forth in A.R.S. §38-251, *et seq., as amended* and the premium for such bonds shall be paid by the Town.

Article 2-2 MAYOR

2-2-1 Election of Mayor [606 668]
2-2-2 Vice Mayor [606 638 668]
2-2-3 Acting Mayor [606]
2-2-4 Powers and Duties of the Mayor
2-2-5 Absence of Mayor [606]
2-2-6 Failure to Sign Documents
2-2-7 Powers and Duties of the Vice Mayor [668]

Section 2-2-1 Election of Mayor [606 668]

The Mayor of the Town of Paradise Valley shall be directly elected by the qualified electors of the Town. The term of office shall be two years.

Section 2-2-2 Vice Mayor [606 668]

At the first regular meeting in January of each year, the Council shall designate one of its members as Vice Mayor, subject to a term limit of no more than 2 consecutive yearly terms for any individual member. The Vice Mayor shall perform the duties of the Mayor during his absence or disability.

Section 2-2-3 Acting Mayor

In case of the absence or inability to act of both the Mayor and the Vice Mayor, the Council shall appoint an Acting Mayor from among their number to act in the Mayor's stead.

Section 2-2-4 Powers and Duties of the Mayor

The powers and duties of the Mayor shall include the following:

A. He shall be the Chief Executive officer of the Town.

B. He shall be the chairman of the Council and preside over its meetings. He may make and second motions and shall have a voice and vote in all its proceedings. He may administer oaths and compel the attendance of witnesses.

C. He shall enforce the provisions of this Code.

D. He shall execute and authenticate by his signature such instruments as the Council, or any statutes, ordinances, or this Code shall require.

E. He shall make such recommendations and suggestions to the Council as he may consider proper.

F. He shall take command of the police force of the Town and govern by proclamation in the event of the threat of or occurrence of acts of riot, rout, or affray sufficient to constitute great danger to the Town and its residents.

1. In such areas of the Town as shall be designated by the Mayor by proclamation under the conditions set forth in this section, and within the area within all or any part of the Town so designated by the Mayor, a curfew shall be in effect the hours of each day designated in the proclamation, and all persons living or residing within any such designated area shall go immediately to their homes, and remain there until the curfew is lifted by order of the Mayor, and all other persons not residing within the designated area shall immediately leave.

2. During the imposition of any curfew as set forth in this section, all business establishments in the designated curfew area, having on their premises intoxicating beverages, shall be closed during the state of emergency and until the curfew is lifted.

G. He shall perform such other duties required by State statute and this Code as well as those duties required as Chief Executive Officer of the Town.

Section 2-2-5 Absence of Mayor [606]

The Mayor shall not absent himself from the Town for a greater period than thirty days without the consent of the Council. In the event of the Mayor's death, resignation, or vacation of office for any reason, the Council, by majority vote, shall fill the vacancy by appointment from among the Council to serve the remainder of the Mayor's term. The resulting vacancy on the Council shall be filled pursuant to Section 2-1-4.

Section 2-2-6 Failure to Sign Documents

If the Mayor refuses or fails to sign any ordinance, resolution, contract, warrant, demand, or other document or instrument requiring his signature for five days consecutively, then a majority of the members of the Council may, at any regular or special meeting, authorize the Vice Mayor, or in his absence, an Acting Mayor, to sign such ordinance, resolution, contract, warrant, demand, or other document or instrument which when so signed, shall have the same force and effect as if signed by the Mayor.

Section 2-2-7 Powers and Duties of the Vice Mayor [668]

The powers and duties of the Vice Mayor shall include the following:

A. In the absence of the Mayor, the Vice Mayor shall execute the duties of Mayor.

B. The Vice Mayor shall serve as the Council's liaison to the Planning Commission.

C. The Vice Mayor shall be responsible for coordinating the annual performance reviews for the Town Manager and Town Attorney.

Article 2-3 COUNCIL ELECTION

2-3-1 Consolidated Election Dates [668]
2-3-2 Primary Election [668]
2-3-3 Non-political Ballot [668]
2-3-4 General Election Nomination
2-3-5 Election to Office
2-3-6 Mail Ballot Election [668]
2-3-7 Initiative, Referendum, and Recall Election [546]
2-3-8 Adoption of State Law [546]
2-3-9 Additional Provisions [546]

Section 2-3-1 Consolidated Election Dates [668]

All elections shall be held pursuant to A.R.S. §16-204, as amended.

Section 2-3-2 Primary Election [668]

A. Any candidate who shall receive at the primary election a majority of all the votes cast shall be declared to be elected to the office for which he is a candidate effective as of the date of the general election, and no further election shall be held as to said candidate. If more candidates receive a majority than there are offices to be filled-then those candidates equal in number to the offices to be filled who have received the highest number of votes shall be declared elected.

B. Pursuant to A.R.S. § 9-821.01, as amended, the total of all votes tabulated for the candidates for the office of Mayor shall constitute the total number of votes cast at the election and shall be the basis for calculating whether a candidate for the office of Mayor or the office of Council Member has received a majority of all votes cast at the election.

Section 2-3-3 Non-political Ballot [668]

Elections shall be non-partisan and nothing on the ballot in any election shall be indicative of the support of the candidate. Candidates' names shall appear on the ballot pursuant to the procedure set forth in A.R.S. § 16-464, as amended.

Section 2-3-4 General Election Nomination

If at any primary election held as above provided there be any office or offices for which no candidate or an insufficient number is elected, then as to such office or offices for which no candidate, or an insufficiencies number is elected, said election shall be considered to be a primary election for nomination of candidates for such office or offices, and the second or general municipal election shall be held to vote for candidates to fill such office or offices. Candidates to be placed on the ballot at such second or general municipal election shall be those not elected at such first election, shall be equal in number to twice the number to be elected to any given office or less than that number if there be less than that number named on the primary election ballot, and persons who receive the highest number of votes for the respective offices at such first election shall be the candidate at such second election, provided that if there be any person who, under the provisions of this article, would have been entitled to become a candidate for any office except for the fact that some other candidate received an equal number of votes therefor, then all such persons receiving an equal number of votes shall likewise become candidates for such office.

Section 2-3-5 Election to Office

The candidates equal in number to the persons to be elected who receive the highest number of votes shall be declared elected at the general election.

Section 2-3-6 Mail Ballot Election [668]

The Town Clerk shall conduct all primary and general elections exclusively using mail ballots in accordance with A.R.S. § 16-409, as amended.

Section 2-3-7 Initiative, Referendum, and Recall Election [546]

There is reserved to the qualified electors of the municipality the power of the initiative, referendum, and recall as prescribed by the state constitution. When an initiative, referendum, or recall is required to be placed upon the ballot, the council shall do so at the next regularly scheduled municipal general election, except as set forth below. When a special election permits the issue to be sooner determined, the council may call a special election for this purpose or, if a special election has been called, the initiative or referendum may be placed on the ballot at the special election. Any election at which an initiative or referendum is placed upon the ballot shall be scheduled as provided in Arizona revised statutes section 16-204, or successor statute, as applicable.

Section 2-3-8 Adoption of State Law [546]

The applicable requirements, limitations and authorities of the constitution of Arizona as now constituted and hereafter amended and the applicable provisions of Arizona revised statutes as now constituted and hereafter amended, relating to initiative, referendum, and recall are hereby adopted as provisions of this chapter governing the manner of exercising the initiative, referendum, and recall powers herein reserved.

Section 2-3-9 Additional Provisions [546]

A. Initiative Petitions. Initiative petitions shall be filed at least one hundred twenty days prior to the election at which they are to be voted upon. The total number of registered voters qualified to vote at the last municipal election, whether regular or special, immediately preceding the date upon which any initiative petition is filed shall be the basis upon which the number of qualified electors of the town required to file an initiative petition shall be computed.

B. Recall Petitions. Every public officer of the town holding an elective office, either by election or appointment, is subject to recall from such office by the qualified electors of the town.

Article 2-4 COUNCIL PROCEDURE

2-4-1 Town Council Rules and Procedures [414] [486]
2-4-2 Procedures for Reconsideration of Various Subdivision or Zoning Applications by Town Council and Planning and Zoning Commission [423] [486]

Section 2-4-1 Town Council Rules and Procedures [414] [486]

The Town Council shall adopt by resolution rules and procedures for the setting of meeting dates and times, preparation of the agenda, rules and procedures for debate and voting, and rules of order; with said rules and procedures to be modified as deemed necessary by the Council from time to time by subsequent resolution.

Section 2-4-2 Procedures for Reconsideration of Various Subdivision or Zoning Applications by the Town Council and Planning and Zoning Commission [423] [486]

A. If an application for an amendment to the zoning ordinance or to the general plan or an application for a special use permit is denied by the Town Council or Planning and Zoning Commission, neither the Council nor the Planning and Zoning Commission may reconsider the application nor consider another application for amendment to the zoning ordinance, general plan or special use permit relating to the property described

in the original application or any part thereof for a period of at least one (1) year from the date of denial except as otherwise provided in this Section.

B. If an application for a lot split or subdivision is denied by the Town Council or the Planning and Zoning Commission, neither the Council nor the Planning and Zoning Commission may reconsider the application nor consider another application to split or subdivide property described in the original application or any part thereof for a period of at least one (1) year from the date of denial except as otherwise provided in this Section.

C. Following denial of an application described in Subsections A or B of this Section, a member voting with the majority may move to reconsider the action at the next regular meeting of the Town Council, or Planning and Zoning Commission if applicable, and include in the motion a specific date and any other necessary procedures related to reconsideration, including but not limited to Planning and Zoning Commission reconsideration and other matters related to the application or property. If the motion is approved, the application will be reconsidered in accordance with the terms of the motion.

D. An applicant desiring reconsideration or reapplication of an application described in Subsections A or B of this Section less than one (1) year from the date of denial may file a request for reconsideration or reapplication when material change and substantive new matter not contained in the original application are proposed. The request shall be in writing, stating the changes and new matters for consideration. If the Council, or the Planning and Zoning Commission if applicable, determines, in its sole discretion, that there exists material change and substantive new matter, it may consider a motion to reconsider the application and include in the motion a specific date and any other necessary procedures related to reconsideration, including but not limited to Planning and Zoning Commission reconsideration and other matters related to the application or property. If the motion is approved, the application will be reconsidered in accordance with the terms of the motion. The decision on the existence of material change and substantive new matter is final.

Article 2-5 COMMITTEES AND COMMISSIONS

2-5-1 Committees and Commissions In General [639 646]
2-5-2 Planning Commission [6, 7, 429, 532 575 623 643 646 684]
2-5-3 Board of Adjustment [8, 9, 81, 176, 189 583 621 623 646 654 685]
2-5-4 Personnel Board [401 466 Repealed]
2-5-5 Personnel Appeals Board [401 655 686]
2-5-6 Hillside Building Committee [425 461 608 629 683]
2-5-7 Special Use Permit Review Committee (SUPREC) [425 474 Repealed]

Section 2-5-1 Committees and Commissions in General [639 646]

A. The Council may create such committees, commissions or boards, standing or special, as it deems necessary. They shall consist of as many members and shall perform such duties as the Council may require and shall exist at the pleasure of the Council. All members of such committees, commissions or boards shall serve at the pleasure of the Council.

B. Notwithstanding any other provisions of this Article, or any adopted resolution of the Town, if any member of the committees, commissions or boards created by the Town Council is absent for three consecutive meetings or absent from fifty percent (50%) or more meetings during any six-month period, his office shall be automatically vacated. Attendance at meetings must be reported to the Town Clerk within five (5) business days of the meeting. The Town Clerk shall notify the member in writing by certified, return receipt mail that the office has been automatically vacated.

Section 2-5-2 Planning Commission [575 623 643 646 684]

A. [6, 429] Creation and Membership. The Planning Commission as previously established is hereby continued in full force and effect, and there is established herewith a Planning Commission which shall consist of seven members, each of whom shall be appointed for a term of three years. The Planning Commission as created herewith may be referred to as the Zoning Commission or the Planning and Zoning Commission. Members of the Commission shall be appointed by the Town Council. All persons seeking to be appointed or re-appointed to a term on the Planning Commission shall file a written application for such appointment or re-appointment with the Mayor on or before the date set by the Town of the year that the term subject to appointment would become vacant. However, this written application requirement does not apply to an appointment to serve the balance of a term which has become vacant prior to the expiration of the term. Vacancies shall be filled for the unexpired term of the member whose place has become vacant. The Planning Commission shall, at its first meeting in October of each year, elect one of its members to serve as its Chairman-designate. The member designated to be Chairman shall be approved or

disapproved for the Chairmanship by the Town Council within thirty (30) days of the election by the Commission. If the Chairman-designate is approved for the Chairmanship by the Town Council, he shall become the Chairman immediately upon such approval, and he shall serve as Chairman of the Commission (1) until a successor as Chairman is elected and approved in the following year, or (2) until the Chairmanship shall, for any reason, become vacant. If the Chairman-designate is disapproved for the Chairmanship by the Town Council, the Planning Commission shall, at its next meeting after such Council disapproval, elect another one of its members to serve as its Chairman-designate, and the member so designated shall be approved and become the Chairman or be disapproved pursuant to the procedures described herein. If, for any reason, the position of Chairman becomes vacant, then the Commission, at its next meeting after such position becomes vacant, shall elect a Chairman-designate for the remainder of the term, and the member so designated shall be approved and become the Chairman or be disapproved pursuant to the procedures prescribed herein. No member shall serve as Chairman of the Commission for a period of time in excess of two (2) consecutive terms.

B. Planning Commission Meetings, Administration of Oaths and Compelling Attendance of Witnesses. All meetings of the Planning Commission shall be held at the call of the Chairman and at such other times as the Planning and Zoning Commission may determine. All meetings of the Planning Commission shall be open to the public. The Chairman, or in his absence, the Acting Chairman, may administer oaths and compel the attendance of witnesses.

C. Planning Commission Rules, Regulations, and Records. The Commission shall have power to make and publish rules and regulations to govern its proceedings and to carry into effect the provisions of this section. The Commission shall keep minutes of its proceedings, showing the vote of each member upon every question, or if absent or failing to vote, indicating that fact, and shall also keep records of its examinations and other official actions. Every rule, regulation, or every amendment or repeal thereof, and every order, requirement, decision, or determination of the Commission shall immediately be filed in the office of the Commission and in the office of the Town Clerk and shall be a public record.

D. Time Limits for Commission Action.

1. All applications, cases, or other matters before the Planning Commission shall be heard and considered by the Commission in an expeditious manner and without unreasonable delay, and as provided by the following limits:

   (a) Complete applications for preliminary and final subdivision approval shall be heard, approved or disapproved, and forwarded to the Council within ninety (90) days of the filing of the application for subdivision approval.

(b) Applications for Special Use Permits and amendments to Special Use Permits shall be heard, approved or disapproved, and forwarded to the Council within the time period specified by the Town Council in its Statement of Direction for a particular Special Use Permit application; or in the absence of a specified time period, the time period shall be the lesser of ninety (90) days from the approval of the Statement of Direction or one hundred fifty (150) days from the filing of the application for the Special Use Permit.

(c) Proposed amendments, additions, and repeals of provisions of the Zoning Ordinance shall be heard, approved or disapproved, and forwarded to the Council within these time limits:

(1) Where the proposal is referred to the Commission by the Council, within forty-five (45) days of such Council action.

(2) Where the proposal would amend, supplement or change zoning district boundaries pursuant to Article XVIII of the Zoning Ordinance, within forty-five (45) days after Council initiation of such action pursuant to Section 1801 of the Zoning Ordinance, or within forty-five (45) days after the filing of a petition pursuant to Section 1801 of the Zoning Ordinance with the Town.

(3) [7] Where the proposal is submitted by the Town Manager, within forty-five (45) days after the Town Manager has mailed or delivered or caused to be delivered to the Chairman of the Commission the proposal.

(d) For the purpose of this section, the term "filing" of an application shall mean an application which is filed by the applicant and accepted as complete by the Town, in accordance with applicable Planning Commission rules and regulations, ordinances and laws.

2. <u>Effect of Failure of Commission to Act Within Prescribed Time Limits</u>.

When the Commission fails to hear, approve or disapprove, and forward to the Council any application, case, or other matter within the time limits provided by Subsection D-1 of this Section, the following shall occur:

(a) Applications for preliminary subdivision plat approval, final subdivision plat approval, Special Use Permits, and amendments to Special Use Permits, shall be forwarded to the Council for Council action on such application along with the minutes of all Commission meetings where such application was heard, considered, or discussed, and the Commission shall be deemed to have recommended for approval such application; however, where the Commission finds that it cannot recommend approval or disapproval of an application

because the applicant has failed to appear at a Commission meeting, then such application shall be deemed to have been withdrawn and vacated by the applicant, and the application shall be moot.

(b) A proposed amendment, addition, or repeal of a provision of the Zoning Ordinance shall be forwarded to the Council for Council action on such proposal. The Council shall comply with the provisions of A.R.S. 9-462.04, Subsection A, before enacting any amendment, addition, or repeal of a provision of the Zoning Ordinance.

3. For good cause shown by the applicant, the Commission, by majority vote of those Commission members present at a Commission hearing, may extend the time limits set forth hereinabove for a period not to exceed thirty (30) days. Only one such extension shall be granted.

E. Pre-Application Review Process and Procedures

1. Prior to filing a formal application for development projects that will require an administrative or public approval process, a pre-application review with the Community Development Department is required. The purpose of the pre-application review is:

(a) To provide an opportunity, when deemed necessary by the Community Development Director, for the applicant, adjacent landowners, and Town staff to: 1) Learn about the proposed project; and 2) Identify issues that can be addressed, and necessary changes that can be made to the development plans before the applicant prepares the final plans and other documents for the formal application review process.
(b) To familiarize the applicant with the review process and procedures and application requirements;
(c) To identify the requirements, if any, for citizen participation during the formal application review process;
(d) To streamline the subsequent formal application review process.

2. The Community Development Director shall establish procedures for the Pre-Application review process.

F. Citizen Review Process

1. The purpose of the citizen review process is to provide an opportunity for citizen involvement and public awareness of applications for the rezoning of property or for a new or amended special use permit (collectively called a “Rezoning Application” herein). The citizen review process is not intended to produce complete consensus on all Rezoning Applications, but to ensure that citizens have:

(a) Sufficient time to learn the substance of the Rezoning Application;

(b) Enough information to determine how they might be impacted by the Rezoning Application;

(c) An opportunity to communicate their issues or concerns with respect to the Rezoning Application at an early stage in the process and prior to any public hearings on the Rezoning Application.

2. The citizen review process shall apply to all Rezoning Applications that require a public approval process.

3. Procedures.

(a) The applicant, in coordination with the Community Development Department, shall establish a time, date, and place for a Citizen Review Session to provide a reasonable opportunity for the applicant, adjacent landowners, and other potentially affected citizens to discuss issues or concerns they may have with the Rezoning Application proposed by the applicant. Community Development staff may attend the meeting as an observer and shall not conduct the meeting. The applicant shall supply the Community Development Department with minutes of the neighborhood meeting and a list of all individuals in attendance. The results of the neighborhood meeting shall be made available to the Planning Commission and/or Town Council at such time as they take action on the Rezoning Application, if any.

(b) Written notice of the Citizen Review session shall be given at least 10 days prior to the meeting and shall include the time, date, and location of the citizen review meeting and sufficient details regarding the substance of the proposed Rezoning Application so as to allow citizens and other affected persons to determine how they might be affected by the proposed Rezoning Application.

(c) The applicant shall provide such notice by first class mail to: 1) Each property owner within 1000 feet of the boundary of the property subject to the Rezoning Application; 2) All other interested parties who have requested that they be placed on a notification list maintained by the Community Development Department; and 3) Adjoining municipalities sharing borders with the property subject to the Rezoning Application.

(d) The Community Development Director may establish additional procedures for the Citizen Review Process as is deemed necessary.

G. Text Amendments to the Zoning Code

1. The Town Council may, from time to time as public necessity, convenience, general welfare and good zoning practice require, make changes to the text of the Zoning Ordinance, impose a regulation not previously imposed, or modify a regulation previously established by the Town of Paradise Valley Zoning Ordinance. The Town Council or the Planning Commission on its own motion may initiate such amendments.

2. A citizen review session shall be held at a work-study session of the Planning Commission scheduled at least 10 days prior to the Public Hearing for the consideration of the proposed text amendment. Landowners and other citizens potentially affected by the proposed text amendments will be invited to gather further information regarding the proposed text amendments at the citizen review session and to express any issues or concerns they may have with the proposed text amendment.

3. Notice of the citizen review session shall be given to landowners and other citizens potentially affected by the proposed text amendments at least 10 days prior to the Planning Commission work-study session scheduled for the citizen review of the proposed text amendments. This notice shall state the date, time, and place of the citizen review session and shall include a general explanation of the substance of the proposed text amendment to the zoning ordinance. The form of notice to be used will vary according to the type of text amendment proposed, and any means deemed by the Town to provide the appropriate method of notice for the proposed text amendment shall be considered sufficient. The form of notice given may include, but is not limited to, the following:

(a) Publication in a local newspaper distributed to residents living within the Town of Paradise Valley.

(b) Posting at official Town posting locations.

(c) Posting on the Town's web site.

4. After the citizen Review session, the Planning Commission may take all issues and concerns raised by landowners and other citizens potentially affected by the proposed text amendments at such session into account when it considers its recommendation to the Town Council on the proposed text amendment and shall, prior to the Council's public hearing on the proposed text amendment, report to the Council the issues and concerns raised during the citizen review input and discussion session.

H. Planning Agency. Pursuant to Arizona Revised Statute §9-461.01, the Community Development Department is hereby established as the Planning Agency for all purposes set forth in the Arizona Revised Statutes.

Section 2-5-3 Board of Adjustment [8] [188 583 623 646 654 685]

A. Creation and Membership. The Board of Adjustment as previously established is hereby continued in full force and effect, and there is established herewith a Board of Adjustment which shall consist of seven members, each of whom shall be appointed for a term of three years. The word "Board" when used in this article shall mean the Board of Adjustment. Members of said Board shall be appointed by the Mayor subject to confirmation by majority vote of the Town Council. All persons seeking to be appointed or re-appointed to a term on the Board of Adjustment shall file a written application for such appointment or re-appointment with the Mayor on or before August 15 of the year that the term subject to appointment would become vacant. However, this written application requirement does not apply to an appointment to serve the balance of a term which has become vacant prior to the expiration of the term. Vacancies shall be filled for the unexpired term of the member whose place has become vacant. The Board of Adjustment shall, at its first meeting in October of each year, elect one of its members to serve as its Chairman-designate. The member designated to be Chairman shall be approved or disapproved for the Chairmanship by the Town Council within thirty (30) days of the election of the Board of Adjustment. If the Chairman-designate is approved for the Chairmanship by the Town Council, he shall become the Chairman immediately upon such approval, and he shall serve as Chairman of the Board (1) until a successor as Chairman is elected and approved in the following year, or (2) until the Chairmanship shall, for any reason, become vacant. If the Chairman-designate is disapproved for the Chairmanship by the Town Council, the Board of Adjustment shall, at its next meeting after such Council disapproval, elect another one of its members to serve as its Chairman designate, and the member so designated shall be approved and become the Chairman or be disapproved pursuant to the procedures described herein. If, for any reason, the position of Chairman becomes vacant, then the Board at its next meeting after such position becomes vacant, shall elect a Chairman-designate for the remainder of the term, and the member so designated shall be approved and become the Chairman or be disapproved pursuant to the procedures described herein. No member shall serve as Chairman of the Board for a period of time in excess of two (2) consecutive years.

B. Board of Adjustment, Meeting, Administration of Oaths, and Compelling Attendance of Witnesses. All meetings of the Board shall be held at the call of the Chairman and at such other times as the Board may determine. All meetings of the Board shall be open to the public. The Chairman, or in his absence, the Acting Chairman, may administer oaths and compel the attendance of witnesses.

C. Rules and Regulations, Records, Procedures, Limitations. [176]
The Board shall have power to make and publish rules and regulations to govern its proceedings and to carry into effect the provisions of this section. The Board shall keep minutes of its proceedings, showing the vote of each member upon every question, or if absent or failing to vote, indicating that fact, and shall also keep

records of its examinations and other official actions. Every rule, regulation, or every amendment or repeal thereof, and every order, requirement, decision, or determination of the Board shall immediately be filed in the office of the Board and in the office of the Town Clerk, and shall be a public record.

1. Appeal of a Ruling of the Zoning Administrator.[81 144 176 685]

Application for appeal to the Board of Adjustment for relief from the rulings of the Zoning Administrator of the Town, in which it is alleged there is an error in an order, requirement or decision made by the Zoning Administrator in the enforcement of the zoning ordinance, may be made by any aggrieved person or by any officer, department, board or bureau of the municipality affected by a decision of the Zoning Administrator by filing with the Zoning Administrator and with the Board, within thirty (30) days after the Zoning Administrator's ruling, a notice of appeal specifying the grounds thereof together with an application form and payment of the appeal prescribed in the Town of Paradise Valley Fee Schedule. The Community Development Director shall be the Zoning Administrator for purposes of this article.

2. Variance[176]

a. The Board may authorize such variances from and exceptions to the strict application of the terms of this section as are in harmony with its general purposes and intents, if it shall find that the granting of such variances and exception will serve not merely as a convenience to the applicant but are necessary to alleviate some demonstrable hardship or difficulty so great as to warrant a variance under the circumstances.

b. The commencement of construction, alteration, repair, removal, or demolition of any building or structure without first obtaining a duly licensed building permit from the Town of Paradise Valley shall not constitute a demonstrable hardship under this section, and a variance shall not be granted for such reason alone.

3. Appeal From Board.

A person aggrieved by a decision of the Board, including a Town officer, may, at any time within thirty (30) days after the decision of the Board or, if reviewed by the Town Council, within 30 days of the Town Council decision, bring a special action in the Superior Court of Maricopa County for the purpose of reviewing the Board's decision, pursuant to the "Rules of Procedure for Special Actions." Commencement of the special action shall not stay proceedings upon the decision appealed from unless the court shall otherwise order.

4. The Board of Adjustment May Not:[176 188]

a. Make any changes in the uses permitted in any zoning classification or zoning district, or make any changes in the terms of the Zoning Ordinance provided the restriction in this paragraph shall not affect the authority to grant variances.

b. Grant a variance if the special circumstances, hardship or difficulty applicable to the property are self-imposed by the property owner, or predecessor, special circumstances, hardship, or difficulty which arise out of misunderstanding or mistake are not grounds for a variance.

D. Zoning Code Interpretations.[583]

1. The Community Development Director shall be responsible for interpretation of the Paradise Valley Zoning Ordinance. Interpretations may be considered if there is a question of clarity of any development standard or other provision of this ordinance, or a review is required within the permitted use categories of a specified zone district.

2. An application clearly stating the section requiring interpretation or the characteristics of the desired use and zone district in which it is proposed to be located shall be submitted on a form prescribed by the Community Development Director with the required fee before an interpretation will be made. All requests for written interpretations shall be filed in the Community Development Department.

3. The Community Development Director shall issue a written interpretation within ten (10) working days of the submission of a completed application and request for interpretation. All interpretations shall be maintained in the Community Development Department records.

4. Prior to determining that a use is permitted within a specific zoning district, the Community Development Director shall find that:

   a. The use is described and included in the zoning district;

   b. The intensity of the use will not adversely affect other properties within the district; or

   c. If there is more than one principal use, all of the principal uses are permitted and that the combination of uses will not alter the basic land use characteristics of each principal use or create a different use than that which would otherwise be prohibited.

E Administrative Relief. [583 654]

1. The Community Development Director may authorize administrative relief to a property owner in the Town of Paradise Valley of up to ten (10) percent of any development standard contained in Article X, and for solar device installations only, Article XXII of the Town Zoning Code, unless specifically restricted elsewhere in this ordinance. For gates on hillside properties, administrative relief may be authorized as described in subsection (i) below. Administrative relief shall be subject to the following requirements and limitations:

   a. An application shall be submitted (and the fee set forth in the Town of Paradise Valley Fee Schedule, as such may be amended from time to time, shall be paid) by the property owner requesting administrative relief, on a form prescribed by the Community Development Director for such, identifying the proposed improvement to the property that is subject to the request;

   b. Notice shall be made by first class mail, postmarked at least five (5) days prior to the proposed date of determination by the Community Development Director, to adjacent property owners determined by the Community Development Director as potentially affected by the request for administrative relief;

   c. The proposed improvement requiring relief will not be detrimental to the property requesting relief, any adjacent property, or the Town, as determined by the Community Development Director;

   d. The relief granted is the minimum required to meet the needs of the proposed improvement, as determined by the Community Development Director;

   e. The relief shall not be contrary to the purpose and intent of this ordinance; and

   f. Administrative relief related to a particular property may only be requested once during an eighteen (18) consecutive month period and only twice during the period of ownership by a recorded owner of the property, the term “owner” to be interpreted for purposes of this section to include any person, firm, corporation, partnership, joint venture, trust, or any related persons, parties, firms, corporations, partnerships, joint ventures or trusts, including any successor trusts where the beneficiaries included are the same as any of the persons included as an owner above or as a beneficiary of any preceding trusts.

g. The relief requested is limited to livable primary and accessory structures and walls, gates, and fences. It is not applicable to:
   i. New home construction, except to request relief related to an inadvertent error,
   ii. Properties that are subject to special use permits,
   iii. Floor area ratio limitations,
   iv. Tennis or other types of sport courts,
   v. Gazebos or other similar structures.

h. The Community Development Director may impose reasonable conditions upon any administrative relief granted to ensure that the public health, safety, and general welfare are protected and substantial justice is done.

i. Relief for gates on hillside properties may be allowed. Such relief shall only be granted for the location to allow the gates to be as close as necessary to the property line when the topography of the lot precludes them from meeting the setback. Consideration shall be given to proper stacking of vehicles for public safety. No increase in height or size or other deviations of the code shall be granted.

2. Any relief authorized by the Community Development Director shall be documented with findings consistent with the standards above and filed with the building permit records, subdivision case file, or other department files, as appropriate.

F. Appeals. [583]

All decisions and interpretations by the Community Development Director performed in accordance with Section 2-5-3.E may be appealed to the Board of Adjustment in accordance with the procedures prescribed in Section 2-5-3.C.

Section 2-5-4 Personnel Board [124 401 466 Repealed]

Section 2-5-5 Personnel Appeals Board [401 467 655 686]

A. The personnel appeals board consists of three members appointed by the Mayor and Council to staggered three-year terms. The members of the board must be residents of the Town. The initial terms of the Board will be set by the Council at time of appointment.

B. No person shall be appointed to the board if he is employed by or is an official of the Town of Paradise Valley.

C. Vacancies occurring during a term must be filled by appointment by the Mayor and Council for the balance of the unexpired term.

D. The board shall hear only appeals submitted by regular employees in the classified service who have received a disciplinary suspension of greater than three days, involuntary demotion, disciplinary pay reduction, or dismissal.

E. In an investigation or hearing, the board has the power to examine witnesses under oath.

F. Each member of the board has the power to administer oaths to witnesses.

G. The board has the power to issue subpoenas and compel the attendance of witnesses and production of evidence.

H. Neither the Arizona Rules of Civil Procedure nor the Arizona Rules of Evidence shall be used in proceedings before the board. The chairperson shall have the authority to control the proceedings and to determine if the evidence proposed is relevant to the board's considerations.

I. The board may affirm, modify or reverse the decision from which an appeal is taken.

J. The decision of the board is final.

Section 2-5-6 Hillside Building Committee [425 461 474 608 629 683]

A. The Hillside Building Committee (Committee) is hereby established. The Committee shall review applications for building permits in a Hillside Development Area, as defined under the Zoning Ordinance of the Town.

B. The Committee shall consist of three (3) rotating members of Planning Commission and two citizen members. The citizen members shall be appointed by the Mayor and confirmed by the Town Council. The citizen members must be Town residents, but may not be members of the Planning Commission or Town staff.

C. The term of citizen members shall be two (2) years. The first appointees shall serve individual terms of one year and two years. The rotating terms of the members of the Planning Commission shall coincide with their terms of office, however, such members shall serve on the Committee for staggered intervals as established by the Chair of the Planning Commission.

D. At the start of each rotation cycle, the Committee members shall select the Hillside Committee Chair, who shall serve until the start of a new rotation cycle.

If a Planning Commission member in active service on the Committee will be absent from any meeting of the Committee, a substitute from the Commission may serve. Such substitute member shall be considered a member of the Committee for voting and quorum purposes. Three Committee members shall constitute a quorum.

Section 2-5-7 Special Use Permit Review Committee [425 474 Repealed]

Article 2-6 ORDINANCES, RESOLUTIONS AND CONTRACTS

2-6-1 Prior Approval
2-6-2 Introduction
2-6-3 Requirements for an Ordinance
2-6-4 Effective Date of Ordinances
2-6-5 Publishing Required
2-6-6 Posting Required

Section 2-6-1 Prior Approval

All ordinances, resolutions, and contract documents shall, before presentation to the Council, have been reviewed as to form by the Attorney and shall, when there are substantive matters of administration involved, be referred to the person who is charged with the administration of the matters. Such person shall have an opportunity to present his objections, if any, prior to the passage of the ordinance, resolution, or acceptance of the contract.

Section 2-6-2 Introduction

Ordinances, resolutions, and other matters or subjects requiring action by the Council shall be introduced and sponsored by a member of the Council.

Section 2-6-3 Requirements for an Ordinance

Each ordinance should have but one subject, the nature of which is clearly expressed in the title. Whenever possible, each ordinance shall be introduced as an amendment to this Code or to an existing ordinance, and in such case, the title of the sections to be amended be included in the ordinance.

Section 2-6-4 Effective Date of Ordinances

No ordinance, resolution, or franchise shall become operative until thirty (30) days after its passage by the Council and approval by the Mayor, except measures necessary for the immediate preservation of the peace, health, or safety of the Town, but such an emergency measure shall not become immediately operative unless it states in a separate section the reason why it is necessary that it should become immediately operative, and unless it is approved by the affirmative vote of three fourths of all the members elected to the Council, taken by ayes and nays.

Section 2-6-5 Publishing Required

Only such orders, resolutions, motions, regulations, or proceedings of the Council shall be published as may be required by State statutes or expressly ordered by the Council.

Section 2-6-6 Posting Required

Every ordinance imposing any penalty, fine, forfeiture, or other punishment shall, after passage, be posted by the Clerk in three or more public places within the Town, and an affidavit of the person who posted the ordinances shall be filed in the office of the Clerk as proof of posting.

Article 2-7 FINANCIAL DISCLOSURES FOR ELECTED OFFICIALS [10] [11] [107] [349]

2-7-1	Definitions
2-7-2	Duty to File Financial Disclosure Statement, Contents; Exceptions
2-7-3	Duty to File Financial Disclosure Statement by Candidate for Local Public Office
2-7-4	Effective Date
2-7-5	Repealed [349] [632]

Section 2-7-1 Definitions

In this ordinance, unless the context otherwise requires:

1. "Business" includes any enterprise, organization, trade, occupation or profession, whether or not operated as a legal entity or for profit, including any business trust, corporation, partnership, joint venture or sole proprietorship.

2. "Compensation" means anything of value or advantage, present or prospective, including the forgiveness of debt, received in return for personal or professional services rendered.

3. "Controlled business" means any business in which the local public officer or any member of his household has an ownership or beneficial interest, individually or combined, amounting to more than a fifty percent interest.

4. "Dependent business" means any business in which the local public officer or any member of his household has an ownership or beneficial interest, individually or combined, amounting to more than a ten percent interest, and during the preceding calendar year the business received from a single source more than ten thousand dollars and more than fifty percent of its gross income.

5. "Gift" includes any gratuity, special discount, favor, hospitality, service, economic opportunity, loan or other benefit received without equivalent consideration and not provided to members of the public at large.

6. "License" includes all licenses or permits issued by the Town Council or any agency or department of the Town, including special use permits granted pursuant to the Zoning Ordinance of the Town of Paradise Valley.

7. "Local public officer" means a person holding an elective office of the Town of Paradise Valley.

8. "Member of household" means a local public officer's spouse and any minor child of whom the local public officer has legal custody.

Section 2-7-2 Duty to File Financial Disclosure Statement; Contents; Exceptions

A. In addition to other statements and reports required by law, every local public officer, as a matter of public record, shall file with the Town Clerk on a form prescribed by the Town Clerk a verified financial disclosure statement covering the preceding calendar year ending December 31. The statement shall disclose:

1. The name and address of the local public officer and each member of his household and all names and addresses under which each does business.

2. The name and address of each employer doing business in the Town of Paradise Valley and of each other source of compensation from any source whatsoever that is located or doing business in the Town of Paradise Valley, other than gifts, amounting to more than one thousand dollars received during the preceding calendar year by the local public officer and members of his household in their own names, or by any other person residing or doing business in the Town of Paradise Valley for the use or benefit of the local public officer or members of his household, a description of the services for which the compensation was received and the nature of the employer's business. This paragraph shall not be construed to require the disclosure of individual items of compensation that constituted a portion of the gross income of the business from which the local public officer or members of his household derived compensation.

3. For a controlled business within the Town of Paradise Valley, a description of the goods or services provided by the business, and if any single source of compensation to the business during the preceding calendar year amounts to more than ten thousand dollars and is more than twenty-five percent of the gross income of the business, the disclosure shall also include a description of the goods or services provided to the source of compensation. For a dependent business within the Town of Paradise Valley the statement shall disclose a description of the goods or services provided by the business and a description of the goods or services provided to the source of compensation from which the dependent business derived the amount of gross income described in Section 1, paragraph 4. If the source of compensation for a controlled or dependent business is a business, the statement shall disclose a description of the business activities engaged in by the source of compensation.

4. The names and addresses of all businesses and trusts in which the local public officer or members of his household, or any other person for the use or benefit of the local public officer or members of his household, had an ownership or beneficial interest of over one thousand dollars at any time during the preceding calendar year and which, during the same calendar

year, either directly or through an agent or subsidiary business, conducted business in, received a license or permit issued by, or owned real property in the Town of Paradise Valley, and the names and addresses of all businesses and trusts in which the local public officer or any member of his household held any office or had a fiduciary relationship at any time during the preceding calendar year and which, during the same calendar year, either directly or through an agent or subsidiary business, conducted business in, received a license or permit issued by, or owned real property in the Town of Paradise Valley, together with the amount or value of the interest and a description of the interest, office or relationship.

5. All real property interests and real property improvements, including specific location and approximate size, located in the Town of Paradise Valley, in which the local public officer, any member of his household or a controlled or dependent business held legal title or a beneficial interest at any time during the preceding calendar year, and the value of any such interest, except that this paragraph does not apply to a real property interest and improvements thereon used as the primary personal residence or for the personal recreational use of the local public officer. If a local public officer, any member of his household or a controlled or dependent business acquired or divested any such interest during the preceding calendar year, he shall also disclose that the transaction was made and the date it occurred. If the controlled or dependent business is in the business of dealing in real property interests or improvements, disclosure need not include individual parcels or transactions as long as the aggregate value of all parcels of such property is reported.

6. The names and addresses of all creditors residing or doing business in the Town of Paradise Valley to whom the local public officer or members of his household, in their own names or in the name of any other person, owed a debt of more than one thousand dollars or to whom a controlled business or dependent business listed pursuant to paragraphs 3 and 4 of this subsection owed a debt of more than ten thousand dollars which was also more than thirty percent of the total business indebtedness at any time during the preceding calendar year, listing each such creditor. This paragraph shall not be construed to require the disclosure of debts owed by the local public officer or any member of his household resulting from the ordinary conduct of a business other than a controlled or dependent business. Nor shall disclosure be required of credit card transactions, retail installment contracts, debts on residences or recreational property exempt from disclosure under paragraph 5 of this subsection, debts on motor vehicles not used for commercial purposes, debts secured by cash values on life insurance or debts owed to relatives. It is sufficient disclosure of a creditor if the name and address of a person to whom payments are made is disclosed. If the local public officer, any member of his household or a controlled or dependent business incurred or discharged a debt which is reportable under this

subsection during the preceding calendar year, the report shall disclose that the transaction was made and the date it occurred.

7. The identification and amount of each debt from a source residing or doing business in the Town of Paradise Valley exceeding one thousand dollars owed at any time during the preceding calendar year to the local public officer and member of his household in their own names, or to any other person for the use or benefit of the local public officer or any member of his household. The disclosure shall include the identification and amount of each debt exceeding ten thousand dollars to a controlled business or dependent business listed pursuant to paragraphs 3 and 4 of this subsection which was also more than thirty percent of the total indebtedness to the business at any time during the preceding calendar year. This paragraph shall not be construed to require the disclosure of debts from the ordinary conduct of a business other than a controlled or dependent business. If the local public officer, any member of his household or a controlled or dependent business incurred or discharged a debt which is reportable under this subsection during the preceding year, the report shall disclose that the transaction was made and the date it occurred.

8. The name of each source of any gift, or accumulated gifts from a single source, that has either received a license or is residing or doing business in the Town of Paradise Valley, of more than five hundred dollars received by the local public officer and members of his household in their own names during the preceding calendar year, or by any other person for the use or benefit of the local public officer or any member of his household except gifts received by will or by virtue of intestate succession, or received by way of distribution from any intervivos or testamentary trust established by a spouse or by an ancestor, or gifts received from any other member of the household or relatives to the second degree of consanguinity. Political campaign contributions shall not be construed as gifts if otherwise publicly reported as political campaign contributions as required by law.

9. A list of all licenses issued by the Town of Paradise Valley, and of all business licenses issued by any other governmental agency which requires for its issuance the consideration of the application for such license by the Town Council of the Town of Paradise Valley, to, held by or in which the local public officer or any member of his household had an interest at any time during the preceding calendar year, including the name in which the license was issued, the type of business and its location.

10. A list of all bonds, together with their value, issued by the Town of Paradise Valley, any industrial development authority of the Town or any nonprofit corporation organized or authorized by the Town held at any time during the preceding calendar year by the local public officer or any member of his household, which bonds issued by a single entity had a value in excess of

one thousand dollars. If the local public officer or any member of his household acquired or divested any bonds during the preceding calendar year which are reportable under this paragraph, the fact that the transaction occurred and the date shall also be shown.

B. If an amount or value is required to be reported pursuant to this section, it is sufficient to report whether the amount or value of the equity interest falls within:

1. Category 1, one thousand dollars to twenty-five thousand dollars.

2. Category 2, more than twenty-five thousand dollars to one hundred thousand dollars.

3. Category 3, more than one hundred thousand dollars.

C. This section does not require the disclosure of any information that is privileged by law.

D. The statement required to be filed pursuant to subsection A shall be filed by all persons who qualified as local public officers at any time during the preceding calendar year on or before January 31 of each year, with the exceptions that a local public officer appointed to fill a vacancy shall, within sixty days following his taking of such office, file a financial disclosure statement covering as his annual period the twelve month period ending with the last full month prior to the date of his taking office.

E. The Town Clerk shall prepare written guidelines, forms and samples for completing the financial disclosure statement required by this section. A copy of the guidelines, forms and samples shall be distributed to each local public officer and shall be made available to each candidate required to file a financial disclosure statement pursuant to Section 3 of this resolution.

Section 2-7-3 <u>Duty to File Financial Disclosure Statement by Candidate for Local Public Office</u>

A candidate for local public office as specified in Section 1, paragraph 6, shall file a financial disclosure statement covering the preceding twelve month period and containing the information described in Section 2 on a form prescribed by the Town Clerk at the time of filing nomination papers.

Section 2-7-4 Effective Date

This ordinance shall become effective on the 1st day of January, 1984. Any disclosure statement which is required to be filed as of the effective date hereof shall be filed with the Town Clerk no later than January 31, 1984.

Section 2-7-5 Repealed [349 632]

Article 2-8 INDEMNIFICATION OF OFFICERS AND EMPLOYEES [514]

2-8-1 Persons Covered
2-8-2 Indemnification and Protection of Town Officials
2-8-3 Insurance Coverage
2-8-4 Notice of Claims
2-8-5 Effective Date
2-8-6 Emergency Declaration

Section 2-8-1 Persons Covered

All of the protections and benefits conferred by this article shall be enjoyed by any present or former Mayor, Vice Mayor and each and all of the present or former members of the Council, Town Officers, Town Magistrates and Town Employees and every one of the members of all Town Boards and Commissions, Subcommittees and Advisory Committees, which protected parties are hereinafter referred to individually as a "Town Official" and collectively or jointly as "Town Officials".

Section 2-8-2 Indemnification and Protection of Town Officials

A. Any Town Official and all Town Officials shall be exonerated, indemnified and held harmless by the Town from and against any liability or loss in any manner arising out of, or occasioned by, his service as a Town Official and based upon any claim by any third-party that the Town or such Town Official, by any action or failure to act, damaged the property or infringed the rights of said third party, or of any other person on whose behalf said third-party brings a claim or legal action, provided such Town Official acted, or failed to act, in good faith and in a manner he reasonably believed to be in, or not opposed to, the best interests of the Town.

B. The right to indemnification provided for in subsection A of this section shall extend as well to any claim brought by, or on behalf of, the Town to recover damages alleged to have been occasioned to it, or any of its property, by any act or failure to act of any Town Official, except that no indemnification or exoneration

shall be made in respect of any claim, issue or matter as to which such Town Official shall have been adjudged to be liable to the Town unless and only to the extent that the court in rendering such judgment shall determine upon application that, despite the adjudication of liability but in view of all circumstances of the case, such Town Official is fairly and reasonably entitled to indemnity for such expenses as such court may deem proper. The court in which any such action or suit was brought may determine upon application that, in view of all of the circumstances of the case, indemnity for amounts paid in settlement is proper and may order indemnity for the amount so paid in settlement.

C. In any case where indemnification is required under the provisions of subsections A or B of this section, the Town treasurer shall pay, on behalf of such Town Official, any money judgment and shall perform the onerous provisions of any court order which may be entered against him when such judgment or order has become final and no longer appealable, or has not been stayed pending appeal.

D. In any case where any Town Official is or may be entitled to be exonerated, indemnified and held harmless pursuant to the provisions of subsection A of this section, the Town shall protect and defend him from and against any litigation commenced against him, by engaging and compensating competent legal counsel to conduct his defense, and by paying all court costs, and any fees of opposing legal counsel, taxed or imposed by the court having jurisdiction.

E. In any case where any Town Official is or may be entitled to be exonerated, indemnified and held harmless pursuant to the provisions of subsection B of this section, the Town shall pay the expenses, including attorneys' fees and the cost of a bond or other security pending appeal, incurred in defending the civil action, suit or proceeding by such Officer or Official in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such Town Officer or Official to repay such amount if it is ultimately determined that he is not entitled to be indemnified by the Town as authorized in subsection B of this section.

F. The coverage afforded by this section shall not apply in any case where indemnification is not permissible pursuant to any state statute or any determination that such indemnification would be contrary to public policy or unconstitutional by the decision of any court of competent jurisdiction, however, any such determination shall not affect the validity of the remaining portions thereof.

Section 2-8-3 Insurance Coverage

The Town shall at all times procure insurance policies providing the maximum coverages and limits procurable at reasonable rates to protect its interests and to indemnify and protect all Town Officials entitled to indemnification and protection pursuant to this

article. Acceptance of coverage and undertaking of protection by any such insurance carrier shall be deemed to satisfy the requirements of this article on the part of the Town. However, in any case or instance where an insurance carrier does not in fact accept coverage and defend a Town Official, or where the insurance policy limits are insufficient to cover any judgment entered against any Town Official, the Town shall be bound by the provisions of this article to protect and indemnify pursuant to the provisions of Section 2-8-2.

Section 2-8-4 Notice of Claims

It shall be a precondition to the assertion of any claim for protection and indemnity under this article that any Town Official, after having been served with process commencing litigation against him or them, or after having received written notice of a possible claim alleged to be covered under the provisions of subsections A or B of Section 2-8-2, shall promptly give notice of the pendency of such action, or the presentation of any such claim, to the Town Clerk, who shall in turn present such actual or potential claim to the Council, together with such Town Officials' request for indemnity and protection hereunder. It shall further be a precondition to coverage hereunder that a Town Official claiming the protection and benefits conferred by this article shall at all times, and in every way, cooperate fully with legal counsel appointed by the Town to defend against any threatened or pending litigation under the provisions of subsection D of Section 2-8-2.

Section 2-8-5 Effective Date

This article shall be effective with regard to any and all claims and lawsuits brought against Town Officials or any Town Officer arising out of any act or omission by the Town or any Town Officer since the date of the Town's incorporation on May 24, 1961.

FOOTNOTES:

2 Ordinance #127 - 12/2/76
3 Ordinance #145 - 4/13/78
4 Ordinance #150 - 11/9/78
5 Ordinance #127 - 12/2/76
6 Ordinance #117 - 3/25/76
7 Ordinance #99 - 5/22/75
8 Ordinance #117 - 3/25/76
9 Ordinance #117 - 3/25/76
10 Ordinance #89 - 8/22/74
11 Ordinance #137 - 8/11/77
81 Ordinance #167 - 4/24/80
107 Ordinance #213 - 12/1/83
124 Ordinance #236 - 1/23/86
137 Ordinance #253 - 11/13/86
144 Ordinance #260 - 2/12/87
176 Ordinance #300 - 7/27/89
188 Ordinance #316 - 11/8/90
349 Ordinance #349 - 9/29/92
401 Ordinance #401 - 3/1/95
412 Ordinance #412 - 10/26/95 (Term Limits)
413 Ordinance #413 - 4/25/96 (Repeal Ordinance #413)
414 Ordinance #414 - 4/25/96
423 Ordinance #423 - 9/12/96
425 Ordinance #425 - 9/12/96
429 Ordinance #429 - 10/24/96
433 Ordinance #433 - 1/9/97
435 Ordinance #435 - 1/9/97
451 Ordinance #451 - 12/18/97
461 Ordinance #461 - 6/4/98
466 Ordinance #466 - 8/27/98
467 Ordinance #467 - 8/27/98
474 Ordinance #474 - 12/17/98
486 Ordinance #486 - 6/10/99
514 Ordinance #514 – 7/26/2001
532 Ordinance # 532 – 8/12/2003
546 Ordinance # 546 – 09/23/2004
575 Ordinance # 575 – 02/09/2006
582 Ordinance #582 – 06/05/2006
583 Ordinance #583 – 09/14/2006
606 Ordinance #606 – 01/22/2009 Approved by voters 03/09/10
608 Ordinance #608 – 01/22/2009
615 Ordinance #615 – 09/10/2009
621 Ordinance #621 – 05/13/2010
623 Ordinance #623 – 05/27/2010
629 Ordinance #629 – 10/21/2010
632 Ordinance #632 – 01/27/2011
638 Ordinance #638 – 10/13/2011
639 Ordinance #639 - 10/27/2011
640 Ordinance #640 – 01/12/2012
643 Ordinance #643 – 03/08/2012
646 Ordinance #646 – 04/12/2012
655 Ordinance #655 – 09/27/2012
668 Ordinance #668 – 03/28/2013
654 Ordinance #654 – 03/13/2014
683 Ordinance #683 – 06/11/2015
684 Ordinance #684 – 06/11/2015
685 Ordinance #685 – 06/11/2015
686 Ordinance #686 – 06/11/2015

CHAPTER 3 ADMINISTRATION

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CHAPTER 3 ADMINISTRATION

Article 3-1 OFFICES IN GENERAL

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3-1-7 Criminal History Record Information for Employment and Licensing Purposes and for Public Safety Volunteers [422]

Section 3-1-1 Offices [446 614]

There are hereby created the offices of Town Manager, Town Clerk, Police Chief, Town Engineer, Town Attorney and Town Magistrate.

Section 3-1-2 Additional Offices [446 614 623 687]

The Council or Manager may create and remove from time to time such other offices as deemed necessary and that are not provided for in this Code or State statute. The duties of the offices of Police Chief, Director of Administration and Government Affairs, Public Works Director, Community Development Director, Town Engineer, Town Clerk, and Town Zoning Administrator shall be performed by person(s) appointed or designated by the Town Manager.

Section 3-1-3 Bond

The Council shall require each officer of the Town to give bond for the due discharge of his duties in such sums and with such security as it may direct and approve as determined by resolution, and the Town shall pay the costs of such bond.

Section 3-1-4 Vacancies; Holding More Than One Office

Any vacancy that shall occur in the office of Town Manager shall be filled by appointment by the Council, provided that one person may hold more than one office and that at the discretion of the Council, the functions of a Town official, or an otherwise qualified individual not holding office but employed at the pleasure of the Council. Any vacancy that shall occur in any other Town office shall be filled by appointment by the Town Manager.

Section 3-1-5 Additional Powers and Duties

In addition to any powers and duties prescribed in this Code, each officer shall have such further powers, perform such further duties, and hold such other office as may be provided by the Council through ordinance, resolution, or order.

Section 3-1-6 Oath of Office

Immediately prior to assumption of the duties of office, each officer shall, in public, take and subscribe to the following oath of office or such other oath as may be prescribed by law:

> State of Arizona, County of Maricopa, I, _____, do solemnly swear (or affirm) that I will support the Constitution of the United States and the Constitution and laws of the State of Arizona; that I will bear true faith and allegiance to the same, and defend them against all enemies, foreign and domestic, and that I will faithfully and impartially discharge the duties of the office of _____ (name of office) according to the best of my ability, so help me God (or so I do affirm).
>
> _____
> (Signature of officer of employee)

Section 3-1-7 Criminal History Record Information for Employment and Licensing Purposes and for Public Safety Volunteers [422]

A. Each applicant for:

1) Employment with the Town;

2) Spirituous liquor, solicitor or itinerant merchant, escort, massage or other license or permit as required by the Town; or

3) Public safety volunteer, shall be fingerprinted and shall provide such fingerprint identification and such other information as may be required by the Town Manager or his designee. The fingerprint identification, accompanied by appropriate fees, shall be forwarded to the Arizona Department of Public Safety. The Department of Public Safety is authorized to exchange this fingerprint identification with the Federal Bureau of Investigation for the purpose of obtaining criminal history record information on such persons.

B. The Town Manager may examine criminal history information including non-conviction information concerning any employee or prospective employee, any applicant for license or public safety volunteer for the purpose of evaluating the fitness of such applicants, employees, volunteers and licensees.

Article 3-2 TOWN MANAGER

3-2-1 Office of Town Manager Created
3-2-2 Eligibility of Councilmen
3-2-3 Bond
3-2-4 Compensation
3-2-5 Removal From Office
3-2-6 Powers and Duties [87 447 463 465 488 579 584 599 623 687]
3-2-7 Limitations Upon Responsibility
3-2-8 Conduct

Section 3-2-1 Office of Town Manager Created

The office of the Town Manager of the Town of Paradise Valley is hereby created and established. The Town Manager shall be appointed by the Council wholly on the basis of his administrative and executive ability and qualifications, and his knowledge of accepted practice in respect to the duties of his office. The Town Manager shall appoint an assistant Town Manager who shall act in his place and stead in his absence.

Section 3-2-2 Eligibility of Councilmen

No member of the Council shall be eligible for appointment as Town Manager during the term for which he shall have been elected to the Council.

Section 3-2-3 Bond

The Town Manager shall furnish a corporate surety bond to be approved by the Council in such sum as may be determined by the Council, and shall be conditioned upon the faithful performance of the duties imposed upon the Town Manager as herein prescribed.

Section 3-2-4 Compensation

The Town Manager shall receive such compensation as the Council shall fix from time to time.

Section 3-2-5 Removal From Office

The Town Manager may be removed by the Council by a majority vote of its members.

Section 3-2-6 Powers and Duties [447 463 465 488 579 584 599 623 687]

The Town Manager shall be the Chief Administrative Officer of the government of the Town under the direction and control of the Mayor and Council except as otherwise provided in this chapter. He shall be responsible to the Mayor and Council for the proper administration of all affairs of the Town. In addition to his general powers as administrative head and not as a limitation thereon, it shall be his duty and he shall have the powers set forth in the following subsections:

A. General Administrative Supervision. Execute on behalf of the Mayor and Council general administrative supervision and control of the affairs of the Town, and enforce the provisions of this Code.

B. Appointment and Removal of Officers and Employees. Appoint, remove, suspend, promote, and demote appointive officers and employees of the Town. He may recommend appointment and removal of the Attorney, and Magistrate. The power of appointment and removal of officers and employees is subject to all applicable ordinances, personnel rules, and regulations.

C. Attendance at Council Meetings. Attend meetings of the Town Council with the duty of reporting on or discussing any matter concerning the affairs of the departments, boards, services, or activities under his supervision upon which the Council shall be informed.

D. Coordination of Administrative Functions. Coordinate the administrative functions and operations of the various departments, boards, divisions, and services of the Town government, and on its behalf carry out policies, rules, regulations, and ordinances adopted by it, relating to the administration of the affairs of such departments, boards, divisions, or services.

E. Budget. Cause to be prepared and submitted to him by each department, board, division, or service of the Town government, itemized annual estimates of expenditures required by them for capital outlay, salaries, wages, and miscellaneous operating costs, to tabulate the same into a preliminary consolidated municipal budget and submit the same to the Town Council annually on the date specified by them, with his recommendations as to any increases, decreases, cancellations, transfers, or changes in any of the items included in all preliminary budget.

F. Purchasing. Supervise the expenditures of all departments, divisions, or services of the Town government and act as purchasing agent for the purchase of all supplies, goods, wares, merchandise, equipment, and material which may be required for any of such departments, divisions, or services, in compliance with Article 3-8 of this Code (Procurement and Materials Management). [87 447]

G. Recommendations to Council. Analyze and supervise the functions, duties, and activities of the various departments, boards, and services of the Town government and of all employees thereof, and make such recommendations to the Town Council with reference thereto, as in his judgment will result, if made effective, in the highest degree of efficiency in the overall operation of the Town government.

H. Development of Improvement Projects and Programs. Develop and organize necessary improvement projects and programs and aid and assist the Council and the various departments and boards in carrying the same through to a successful conclusion.

I. Public Relations. Serve as a public relations officer of the Town government, and follow through and endeavor to adjust all complaints filed against any employee, department, or service thereof to the end that every effort may be made to satisfy all citizens that their Town government is being operated in their behalf with the highest degree of efficiency.

J. Community Organizations. Cooperate with all community organizations whose aim and purpose it is to advance the spiritual and material interests of the Town and its residents to provide them with all reasonable assistance obtainable through the Town government within the limitations of the law.

K. Personal Property of Town. Make and keep an up-to-date inventory of all personal property owned by the Town and recommend to the Town Council the purchase of new machinery, equipment, and supplies whenever, in his judgment, the same can be obtained at the best advantage, taking into consideration trade-in value of machinery, equipment, etc., in use.

L. Consolidation, Abolishment, Etc., of Town Offices. Make, or cause to be made, studies and surveys of the duties, responsibilities, and work of the personnel in the various departments and services of the Town government, and to recommend to the Town Council abolition or consolidation of positions whenever in his judgment, such action would increase efficiency in the administration of the Town government.

M. Devotion of Time to Duties. Devote such time to his duties as shall be prescribed by the Town Council in the resolution authorizing his employment.

N. Authority to Sign Town Checks. Town warrants, which shall be in the form of checks drawn on the Town's bank account or accounts issued by order of the Mayor and Council shall be signed as follows: 463 465 488 579 584 599 623 687

1. For any amount that is twenty-five thousand dollars ($25,000) or less, any combination of the Town Manager, Mayor, Vice Mayor, or the Director of Administration and Government Affairs are authorized to sign and countersign. During any period of absence of the Town Manager or the Budget and Finance Director the Town Clerk shall have the same authority to sign and countersign checks as the Town Manager and the Budget and Finance respectively.

2. For any amount greater than twenty-five thousand dollars ($25,000), checks shall be signed by either the Mayor and Vice Mayor, or by one of them with countersignature by either the Town Manager or the Director of Administration and Government Affairs.

O. Additional Duties. Perform such other duties as may be required of him by the Mayor and Town Council, not inconsistent with the laws of the State or the ordinances of the Town.

Section 3-2-7 Limitations Upon Responsibility

The Town Manager shall not exercise any policy making or legislative functions whatsoever, nor attempt to commit or bind the Town Council or any member thereof to any action, plan, or program requiring official action of the Town Council. It is not intended by this article to grant any authority to, or impose any duty upon, the Town Manager which is vested in or imposed by general law or Town ordinances in any Town commission, board, officer, or employee except as herein specifically set forth.

Section 3-2-8 Conduct

In the discharge of his duties as Town Manager, the person holding such position shall endeavor at all times to exercise tact, patience, and courtesy in his contacts with the public and with all Town boards, departments, and employees, and shall use his best efforts to establish and maintain a harmonious relationship between all personnel employed in the government of the Town to the end that the highest possible standards of public service shall be maintained continuously.

Article 3-3 OTHER OFFICES

3-3-1 Town Clerk [12 13 14 449 579 623 687]
3-3-2 Town Marshal [614]
3-3-3 Town Engineer [614]
3-3-4 Repealed [12 446]
3-3-5 Town Attorney [15]
3-3-6 Chief Magistrate and Town Magistrates
3-3-7 Repealed [12 16 446]
3-3-8 Repealed [163 446]

Section 3-3-1 Clerk [12 13 14 449 579 623 687]

A. Records. The Clerk shall keep a true and correct copy of all business transacted by the Council and any other records that either pertain to the business of the Town or that the Council directs. The Clerk shall number, plainly label, and file separately in a suitable cabinet all resolutions, notices, deeds, surveys, leases, paid and unpaid vouchers, inventories, letters, orders, and other documents of whatever nature.

B. Public Inspection of Records. The Clerk shall keep convenient for public inspection all public records and public documents under his control, as provided by State statute.

C. Minutes. The Clerk shall prepare or cause to be prepared all minutes of Council proceedings and ensure their correctness and accuracy.

D. Ordinances, Resolutions, Budgets, and Notices. The Clerk shall process, record, file, publish, and post ordinances resolutions, budgets, and notices in accordance with state statutes. [449]

E. Treasurer. The Clerk shall delegate the duties of treasurer of the Town to the Director of Administration and Government Affairs, who shall have the care, control and custody of the money of the Town.

F. Election Official. The Clerk shall be the Town election official and perform those duties required by State statute.

G. Licenses. The Clerk shall issue or cause to be issued all licenses that may be prescribed by State statute or this Code.

H. The Town Clerk shall have a formal Seal of Office, and this Seal of Office, when stamped upon or affixed to any Town document or record, shall be prima facie evidence that such a Town document or record is genuine and authentic, and a Town document or record certified as provided by this subsection shall be

admissible in any judicial or administrative proceeding without further foundation. [13]

I. At any meeting of the Town Council, the Town Clerk may administer an oath to tell the truth to any person who wishes to speak to or present evidence to the Council, as provided by Section 2-4-5 (D) of this Code. [14]

Section 3-3-2 Police Chief [614 623 687]

The Police Chief shall also be appointed as the Town Marshal, and as Town Marshal, shall assign all duties related to the collection of taxes to Director of Administration and Government Affairs. The Police Chief shall be responsible to the Town Manager for the proper administration of the law enforcement department. In addition to his general powers as administrative head, the Police Chief shall:

A. Be responsible for the enforcement of all Town of Paradise Valley ordinances and laws of the State and the nation which provide for police enforcement.

B. Recommend appointment, discharge, or suspension of all employees of the department to the Town Manager.

C. Conduct investigations as required or necessary.

Section 3-3-3 Town Engineer [614]

The Engineer shall perform all duties requested of him by the Town Manager. The Engineer's responsibility shall include but not be limited to the following:

A. Safety Recommendations. The Engineer shall be the Town Traffic Engineer and make traffic safety recommendations to the Town Manager.

B. Capital Improvements. The Engineer shall investigate the feasibility and establish the design criteria for all public improvement projects.

C. Hillside Development. The Engineer shall hold preliminary discussion with persons wishing to develop property subject to the Hillside Development Regulations. He shall investigate the feasibility of such projects and serve on the Hillside Building Committee to determine the conformance of such projects with the regulations.

D. Issuance of Permits. The Engineer shall issue permits and charge appropriate fees as established by the Town Council for all construction and utility installations not covered by building permits.

E. Plans Check. The Engineer shall check all improvement plans and drainage studies and make recommendations based on his investigation regarding their conformance with good engineering practice.

F. Attendance at Council Meetings. The Engineer shall attend meetings of the Town Council and be prepared to discuss any current recommendations.

G. Attendance at Planning and Zoning Commission Meetings. The Engineer shall attend meetings of the Planning and Zoning Commission and be prepared to discuss any current recommendations. In this vein, the Engineer shall be familiar with the latest revision of the Zoning Ordinance and Subdivision Regulations.

Section 3-3-4 Repealed [12] [446]

Section 3-3-5 Town Attorney [15]

The Town Attorney or such other legal counsel as may be retained by the Council shall act as the legal counselor and advisor of the Council and other Town officials, as such shall give his opinion in writing when requested. He shall draft all deeds, contracts, conveyances, ordinances, resolutions, and other legal instruments when required by the Council. He shall approve or disapprove as to form, in writing, all drafts of contracts and all official or other bonds before final approval or acceptance thereof by the Council. He shall return, within ten days, all ordinances and resolutions submitted to him for consideration by the Council, with his approval or disapproval as to form noted thereon, together with his reasons therefore. He shall prosecute and defend all suits, actions, or causes where the Town is a party, except where provided otherwise by insurance contract, and shall report to the Council, periodically, the condition of any suit or action to which the Town is a party. He shall prosecute, on behalf of the State or Town, all misdemeanor cases where (1) a violation of the Town Code or Town Zoning Ordinance is charged, or (2) a misdemeanor violation of the Arizona Revised Statutes is charged in a complaint filed with the Town Magistrate's Court, or the Maricopa County Superior Court-Juvenile Traffic Court.

Section 3-3-6 Presiding Magistrate and Associate Magistrates [105]

The Presiding Magistrate shall be the chief officer of the Magistrate's Court. The Presiding Magistrate shall be selected by the Council and shall perform those functions necessary to the maintenance of the Magistrate's Court as provided by the Arizona Constitution, Arizona Revised Statutes, and as outlined in Chapter 12 of this Code.

Section 3-3-7 Repealed [12] [16] [446]

Section 3-3-8 Repealed [163] [446]

Article 3-4 PERSONNEL SYSTEM

3-4-1 Creation and Scope
3-4-2 Conditions of Employment [123]
3-4-3 Rules and Regulations
3-4-4 Political Contributions
3-4-5 Bargaining Prohibited [17]
3-4-6 Strike or Work Interruption [17]
3-4-7 Supervisory Employees [17]

Section 3-4-1 Creation and Scope

There is hereby adopted a merit system for the employees of the Town, the provisions of which shall apply to all employees of the Town except elected officials, persons engaged under contract to supply expert, professional, or technical services, temporary employees, volunteer firemen, and volunteer personnel who receive no regular compensation from the Town.

Section 3-4-2 Conditions of Employment [123]

The appointment, promotion, and tenure of every employee shall be conditioned solely on merit and fitness and the satisfactory performance of the duties and responsibilities assigned. No employee or applicant for employment shall be discriminated against or harassed on the basis of race, color, religion, sex, age, handicap, or national origin.

Section 3-4-3 Rules and Regulations

The Council may adopt by resolution rules and regulations to give effect to this section, which may be modified or changed from time to time, but such rules and regulations shall follow the generally accepted principles of good personnel administration.

Section 3-4-4 Political Contributions

No officer, official, or employee of the Town shall use any influence or pressure upon any employee to obtain any assessment or contribution of money or time, either direct or indirect, for any political campaign or personal gain.

Section 3-4-5 Bargaining Prohibited [17]

The Town shall not bargain collectively with any employee, group of employees, employee organizations, or any representative of any employee organization with respect to wages, hours, working conditions, or any other employee related matter.

Section 3-4-6 Strike or Work Interruption [17]

It is hereby declared to be contrary to the public interest and a threat to the public health and safety and unlawful for any Town employee, directly or indirectly, to instigate, institute, encourage, authorize, or participate in a strike, cessation of work, slowdown, speed up or other form of job action or work interruption, and any Town employee who participates in any way in such activity or supports it shall automatically abandon and terminate his appointment or employment and shall no longer hold such position or be entitled to any of the rights or emoluments thereof, except as to any rights already vested in any Town or State employee retirement program. Neither the employee's supervisor, Town Manager, Personnel Board nor Town Council shall reinstate an employee if the employee has in fact engaged in conduct prohibited by this section. If any supervisor or the Town Manager fails to enforce the provisions of this section, the supervisor or Town Manager shall be terminated from employment.

Section 3-4-7 Supervisory Employees [17]

Those employees whose job classification includes supervisory responsibilities are prohibited from joining the same collective bargaining unit as non-supervisory employees. The job positions in this category shall be listed in the Town's Personnel Rules and Regulations.

Article 3-5 RESERVED [576]

Article 3-6 REWARDS FOR INFORMATION FROM PERSONS ON CRIMES

Section 3-6-1 Authorization of Resolution Offering A Reward [539]

The Town Council may from time to time offer rewards for information leading to the apprehension and conviction of any person who may have committed a crime in the Town of Paradise Valley and to authorize the payment thereof. All rewards offered pursuant to this article shall be authorized by resolution and adopted by the Town Council. Payment of a reward shall be subject to any conditions or terms as specified in said resolution.

Article 3-7 CIVIL DEFENSE AND DISASTER PREPAREDNESS

3-7-1 Purposes
3-7-2 Definitions
3-7-3 Office of Director of Civil Preparedness
3-7-4 Powers and Duties
3-7-5 Mutual Aid
3-7-6 Immunity of Town and its Agents, Officers and Employees
3-7-7 Enforcement of Orders, Rules and Regulations
3-7-8 Penalty [19]

Section 3-7-1 Purposes

The purposes of this Article are to:

(1) Reduce vulnerability of people and the community to damage, injury, and loss of life and property resulting from natural and man-made catastrophes, riots, or hostile military or para-military action;

(2) Prepare for prompt and efficient rescue, care, and treatment of persons victimized or threatened by disaster;

(3) Provide a setting conducive to the rapid and orderly start of restoration and rehabilitation of persons and property affected by disasters;

(4) Clarify and strengthen the roles of the Mayor, Town Council, Town Manager, and Town agencies in prevention of, preparation for, and response to and recovery from disasters;

(5) Authorize and provide for cooperation in disaster prevention, preparedness, response and recovery;

(6) Authorize and provide for coordination of activities relating to disaster prevention, preparedness, response, and recovery by agencies and officers of this Town, agencies of the private sector, and similar activities in which the federal government, the state and its political subdivisions may participate; and

(7) Provide a disaster management system embodying all aspects of pre-disaster preparedness and post-disaster response.

Section 3-7-2 Definitions

As used in this Article:

(1) "Civil Preparedness" means the organization, administration, trained manpower, facilities, equipment, material, supplies, programs, emergency plans, ability to execute emergency plans, and all other measures necessary and incidental thereto relating to disaster prevention, preparedness, response, and recovery by all governmental and private sector agencies to protect or save health, life or property;

(2) "Director" means the Town of Paradise Valley Director of Civil Preparedness;

(3) "Disaster" means the occurrence of imminent threat of widespread or severe damage, injury or loss of life or property, or extreme peril to the safety of persons or property, resulting from any natural or man-made causes, including but not limited to fire, flood, earthquake, wind, storm, blight, drought, famine, infestation, air contamination, epidemic, explosion, riot or other acts of civil disobedience which endanger life or property, or hostile military or paramilitary action;

(4) "Emergency Forces" means all Town governmental and private sector agencies, volunteers, facilities, equipment, trained manpower, and other resources required to perform civil preparedness functions;

(5) "Emergency" means the existence of a disaster within the Town limits requiring immediate action by the emergency forces of the Town;

(6) "Local Emergency" means the existence of a disaster within the Town limits, and the situation is or is likely to be beyond the capability and resources of the Town as determined by the Mayor and which requires the combined efforts of other political subdivisions;

(7) "Regulations" means the orders, rules and emergency procedures deemed essential for civil preparedness;

(8) "State of Emergency" means the duly proclaimed existence of a disaster within the state except a disaster resulting in a state of war emergency which is or is likely to be beyond the capabilities and resources of any single county, city or town, and requires the combined efforts of the state and the political subdivision;

(9) "State of War Emergency" means the situation which exists immediately whenever this nation is attacked or upon receipt by this state of a warning from the federal government indicating that such an attack is imminent.

Section 3-7-3 Office of Director of Civil Preparedness

The office of the Director of Civil Preparedness of the Town of Paradise Valley is hereby created and established. The Director of Civil Preparedness shall be appointed by the Town Manager. The appointee to this office may be a person who holds another office or employment with the Town of Paradise Valley.

Section 3-7-4 Powers and Duties

(1) The Town Council:

(a) Shall have the power to make, amend, and rescind regulations, not inconsistent with regulations promulgated by the governor, necessary for civil preparedness, which regulations shall have the full effect of this Ordinance when a copy is filed in the office of the Town Clerk, and has been posted by direction of the Town Clerk in three or more public places within the Town and an affidavit of the person who posted the regulations(s) has been filed in the office of the Town Clerk as proof of such posting. Existing ordinances and regulations, or ordinances and regulations issued under authority of A.R.S. Title 26, Chapter 2, in conflict therewith, are suspended during the time and to the extent they are in conflict;

(b) May appropriate and expend funds, make contracts, obtain and distribute equipment, materials and supplies for civil preparedness purposes;

(c) In the absence of specific authority in state emergency plans and procedures, the Council shall take emergency measures as deemed necessary to carry out the provisions of A.R.S. Title 26, Chapter 2.

(d) In a state of war emergency the Council may waive procedures and formalities required by law pertaining to the performance of public work, entering into contracts, incurring obligations, employing permanent and temporary workers, utilizing volunteer workers, renting equipment, purchasing and distributing supplies, materials and facilities and appropriating and expending public funds when the Council determines and declares that strict compliance with such procedures and formalities may prevent, hinder or delay mitigation of the effects of the state of war emergency. The Town shall be exempt during such emergency from budget limitations prescribed by A.R.S., Section 42-303.

(2) The Mayor:

(a) In addition to the powers granted by other provisions of law, the Mayor may, by proclamation, declare an emergency or a local emergency to exist. The proclamation may be rescinded by a majority of the Town Council twenty-four (24) hours after such proclamation by the Mayor.

(b) During an emergency or local emergency, the Mayor shall govern the Town by Proclamation and shall have the authority to impose all necessary regulations to preserve the peace and order of the Town, including, but not limited to:

(1) imposition of curfews in all or in a portion of the Town;
(2) ordering the closing of any business;

(3) closing to public access any public building, street, or other public place;

(4) calling upon regular or auxiliary law enforcement agencies and organizations within or without the Town for assistance.

(3) The Director:

(a) The director is responsible in non-emergency periods to act on behalf of the Town Manager to develop a readiness for the Town's civil preparedness and for coordinated operations in disaster situations.

(b) During emergencies, the director shall act as the principal advisor or aide to the Mayor on emergency operations. His major responsibility is to assure coordination among emergency forces and higher and adjacent governments, by assuring that the Town government functions effectively. He shall assist the Mayor in the execution of operations, plans and procedures required by the emergency.

(c) The director shall prepare a comprehensive disaster plan which shall be adopted and maintained by resolution of the Council upon the recommendation of the Manager. In the preparation of this plan as it pertains to Town organization, the services, equipment, facilities and personnel of all existing departments and agencies should be used to the fullest extent.

(d) The disaster plan shall be considered supplementary to this ordinance and have the effect of law whenever emergencies, as defined in this ordinance, have been proclaimed.

Section 3-7-5 <u>Mutual Aid</u>

In periods of local emergency as declared heretofore, the Town is hereby granted full power to provide mutual aid to any affected area in accordance with local ordinances, resolutions, emergency plans or agreements therefor. The Town may request from state agencies mutual aid, including personnel, equipment and other available resources to

assist the Town during the local emergency in accordance with emergency plans or at the direction of the governor.

Section 3-7-6 Immunity of Town and Its Agents, Officers and Employees

(1) The Town shall not be liable for any claim based upon the exercise or performance, or the failure to exercise or perform, a discretionary function or duty on the part of the Town or any employee of the Town excepting willful misconduct, gross negligence, or bad faith of any such employee, in carrying out the provisions of A.R.S. Title 26, Chapter 2.

(2) The immunities from liability, exemptions from laws, ordinances and rules, all pensions, relief, disability workmen's compensation and other benefits which apply to the activity of officers, agents or employees of the Town when performing their respective functions within the limits of the Town shall apply to them to the same degree and extent while engaged in the performance of any of their functions and duties extra-territorially under the provisions of this ordinance, excepting willful misconduct, gross negligence or bad faith.

(3) Volunteers duly enrolled or registered for services in a local emergency, a state of emergency, or a state of war emergency, in carrying out, complying with or attempting to comply with any regulations issued pursuant to A.R.S. Title 26, Chapter 2 or any local ordinance, or performing any of their authorized functions or duties, shall have the same degree of responsibility for their actions and enjoy immunities as officers and employees of the state and its political subdivisions performing similar work.

Section 3-7-7 Enforcement of Orders and Regulations

The Town Marshal and his deputies shall enforce orders and regulations issued pursuant to this Article.

Section 3-7-8 Penalty [19]

Any person who violates any provision of this ordinance or who refuses or willfully neglects to obey any lawful regulation or order issued as provided in this ordinance shall be guilty of a misdemeanor. This provision, however, does not apply to the refusal of any private organization or members thereof to participate in an emergency, local emergency, or state of emergency as defined by this ordinance.

Article 3-8 PROCUREMENT AND MATERIALS MANAGEMENT

Section 3-8-1 Purchases, how made. [465 599]

A. All purchases of supplies, materials, equipment and contractual services for the Town shall be made by the Town Manager or his designee in accordance with purchase authorizations issued by the Town Manager.

B. Every contract for, or purchase of, supplies, materials, equipment or contractual services for more than twenty-five thousand dollars ($25,000.00) in a single transaction shall require the prior action of the Town Council. When the Council has previously budgeted sufficient funds therefore, the following contracts or purchases may be made without prior approval of the Town Council:

1. Supplies, materials, equipment or contractual services purchased from another unit of government at a price deemed below that obtainable from private dealers, including surplus;

2. Contractual services, including but not limited to gas, electricity, telephone and public utility services, purchased from a public utility at a price or rate determined by the Arizona Corporation Commission or other government authority;

3. Supplies, materials, equipment or contractual services when purchased at a price not exceeding a price set therefore by the state purchasing agency or any other state or federal agency authorized to regulate prices for things purchased by the state, whether such price is determined by a contract negotiated with a vendor or otherwise;

4. Supplies, materials, equipment or contractual services which can only be furnished by a single dealer or which have a uniform price wherever bought;

5. Supplies, materials, equipment or contractual services procured pursuant to contract or agreement previously approved by the Town Council; and

6. Emergency purchases.

FOOTNOTES

12 Ordinance #153 - 5/10/79
13 Ordinance #122 - 8/22/76
14 Ordinance #127 - 12/2/76
15 Ordinance #106 - 9/25/75
16 Ordinance #153 - 5/10/79
17 Ordinance #159 - 1/10/80
18 Ordinance #116 - 3/11/76
19 Ordinance #104 - 8/14/75
87 Ordinance #184 - 7/9/81
105 Ordinance #210 - 11/10/83
123 Ordinance #235 - 1/23/86
163 Ordinance #287 - 7/14/88
364 Ordinance #364 - 8/30/93
395 Ordinance #395 - 2/23/95
422 Ordinance #422 - 7/11/96
446 Ordinance #446 - 11/13/97
447 Ordinance #447 - 12/4/97
449 Ordinance #449 - 1/8/98
463 Ordinance #463 - 6/15/98
465 Ordinance #465 - 7/23/98
488 Ordinance #488 - 7/8/99
539 Ordinance #539 – 2/12/2004
576 Ordinance #576 – 02/23/2006
579 Ordinance #579 – 06/08/2006
584 Ordinance #584 – 09/14/2006
599 Ordinance #599 – 12/06/2008
614 Ordinance #614 – 07/09/2009
623 Ordinance #623 – 05/27/2010
687 Ordinance #687 – 06/11/2015

CHAPTER 4 BUSINESS

Article 4-1 **BUSINESS LICENSE** [570]
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4-1-3 Payment
4-1-4 Licenses to be Exhibited
4-1-5 Inspection of Licenses
4-1-6 Duties of Inspectors
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Article 4-2 **RETURNED CHECK FEE / ELECTRONIC DIRECT DEBIT/CREDIT CARD CHARGE** [494]

CHAPTER 4 BUSINESS LICENSE

Article 4-1 BUSINESS LICENSE [570]

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Section 4-1-1 Business License Required

A. It is unlawful for any person to practice, transact or carry on any trade, calling, profession, occupation or business within the municipal limits of the Town of Paradise Valley, without first having procured a business license for such purpose from the Town, unless exempted pursuant to Subsection B. No license shall be issued for such trade, calling, profession, occupation, or business that is in violation with the Town Code or Zoning Regulations.

B. The following activities shall be exempted from the licensing requirements of this article:
   1. Non-profit fraternal and service clubs, bonafide religious organizations, and agencies of any federal, state or local governments, and all educational institutions.
   2. Non-profit private clubs where a basic membership fee covers the cost of the use of facilities.
   3. Fund raising projects of non-profit and bona fide religious organizations.
   4. Any person whose primary business location is outside the municipal limits of the town.

C. It shall be the duty of the Clerk or designee to prepare and issue a license for every person that applies and to state in each license the period of time covered, the name of the person for whom issued, the trade, calling, profession, occupation or business licensed, and the location or place of business where such trade, calling, profession, occupation or business is to be practiced, transacted or carried on.

D. The granting of a license is not deemed as evidence or proof that the business is in compliance with the provisions of this article or other ordinances of the Town, nor shall it stop the prosecution by the Town for any such violations of the Town Code.

Section 4-1-2 Mistakes of Collector

A. In no case shall any mistake made by the Clerk in issuing any license or collecting the fee amount prevent, prejudice, or stop the Town from collecting the correct fee amount actually due from any person required to pay for a license as provided herein, or revoking any license erroneously issued and refunding the fee collected.

B. No greater or lesser amount of money shall be charged or received for any license than is provided for herein, and no license shall be issued for any period of time other than as provided herein.

Section 4-1-3 Payment

A. All licenses required by this chapter shall be paid in advance, in legal currency of the United States of America at the office of the Clerk.

B. The licenses provided for in this chapter shall be due and payable to the Town on the first day of January and shall expire on the last day of December of each year.

Section 4-1-4 Licenses to be Exhibited

Every person having a license under the provisions of this chapter and carrying on a trade, calling, profession, occupation or business at a fixed place of business shall keep such license posted and exhibited, while in force, in some conspicuous part of the place of business. Every person having such a license and not having a fixed place of business shall carry such a license or identification card issued by the Town Clerk with him at all times while carrying on the trade, calling, profession, occupation or business for which the same was granted. Every person having a license under the provisions hereof shall produce and exhibit the same whenever requested to do so by any police officer of by any officer authorized to issue, inspect or collect licenses.

Section 4-1-5 Inspection of Licenses

A. The Clerk shall be inspector of licenses for the Town, and all law enforcement officers of the Town are hereby appointed assistant inspectors of licenses, and in addition to their several duties as law enforcement officers, are hereby required to see that such licenses are obtained.

B. Each law enforcement officer, as such assistant inspector of licenses, shall report to the Clerk the name of all such persons, doing business without a license, immediately upon the facts coming to his knowledge.

Section 4-1-6 Duties of Inspectors

The Clerk in the discharge and performance of his official duties, and all law enforcement officers, shall have and exercise the power:

A. To make arrests for the violation of any of the provisions hereof.

B. To enter, free of charge, at any time, any place of business for which a license is required and to demand the exhibition of such license for the current term, from any person engaged or employed in the transaction of such business, and if such person shall then and there fail to exhibit such license, such person shall be liable to the penalty provided for a violation hereof.

C. It is the duty of the Clerk or of the Chief of Police to cause complaints to be filed against all persons violating any of the provisions hereof.

D. When any license fee provided for herein shall become delinquent, the Clerk shall, on the day the same becomes delinquent, add thereto an amount equal to twenty-five percent of the total amount of such delinquent fee as a penalty, and no receipts shall be issued by said Clerk until the delinquent fee and the penalty added thereto have been paid in full.

Section 4-1-7 Transfer of License

No license granted or issued under any of the provisions hereof shall be in any manner assignable or transferable to any other person, other than is therein mentioned or named to do business or authorize any other business than is therein mentioned or named to be done or transacted, or at any place other than is therein mentioned or named, without first obtaining permission from the Town.

Section 4-1-8 Schedule of Fees [144]

The annual fee for a business license shall be that prescribed in the Town of Paradise Valley Fee Schedule.

Section 4-1-9 Denial / Suspension / Revocation

A license may be denied, suspended or revoked by the Town for any of the following causes:

1. Fraud, misrepresentation or false statement contained in the application for license;
2. Fraud, misrepresentation or false statement made in the course of carrying on the business;
3. Conducting a business in violation of any Town ordinance, county ordinance or state law;
4. Conviction of any felony or any misdemeanor involving moral turpitude.

Section 4-1-10 Appeal

A. Notice of the hearing for suspension or revocation of a license shall be given in writing, by the Town Clerk, setting forth specifically the grounds for the suspension or revocation and the time and place of the hearing. Such notice shall be mailed to the licensee at the address listed on the business license application at least ten days prior to the date set for the hearing. The mailing of such notice shall constitute proper notice to the licensee.

B. Any person aggrieved by the denial of an application for license or by the suspension or revocation of such license shall have the right of appeal to the Town Manager or his designee. Such appeal shall be taken by filing with the Town Clerk, within fourteen days after such denial, suspension or revocation, a written statement setting forth fully the grounds for the appeal. The Town Manager or his designee shall set a time and a place for hearing of such appeal, and notice of such hearing shall be given to the appellant in the same manner as provided for notice of a hearing on suspension or revocation. The decision and order of the Town Manager or his designee on such appeal shall be final.

Article 4-2 RETURNED CHECK FEE / ELECTRONIC DIRECT DEBIT/CREDIT CARD CHARGE [494]

Anytime a check or electronic direct debit or credit card charge made payable to the Town of Paradise Valley is returned for any reason, a fee shall be charged in an amount set out in the Paradise Valley Fee Schedule.

Article 4-3 Repealed [651]

FOOTNOTES

21 Ordinance #141-12/1/77
22 Ordinance #141-12/1/77
23 Ordinance #144-2/23/78
24 Ordinance #141-12/01/77
25 Ordinance #152 - 05/10/79
78 Ordinance #170 - 06/26/80
91 Ordinance #194 - 03/11/82
100 Ordinance #205 - 04/28/83
103 Ordinance #208 - 08/28/83
140 Ordinance #256 - 12/18/86
411 Ordinance #411 - 09/07/95
494 Ordinance #494 – 1/27/00
570 Ordinance #570 – 01/12/2006
618 Ordinance #618 – 11/19/2009
623 Ordinance #623 – 05/27/2010
651 Ordinance #651 – 06/28/2012 (Repeal Ord 618)

CHAPTER 5 BUILDING AND CONSTRUCTION [587]

Article 5-1 **BUILDING CODE**

5-1-1 International Building Codes; 2012 Edition [489 562 588 648]
5-1-2 Amendments [489 552 551 562 588 612 648]
5-1-3 Must Conform to Zoning Ordinance [562 594]
5-1-4 Adobe Code [489 562]
5-1-5 Repealed and Reserved [562]
5-1-6 Arizonans with Disabilities Regulations [439 562]
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Article 5-2 **RESIDENTIAL CODE**

5-2-1 International Residential Code 2012 [489 588 648]
5-2-2 Amendments [489 588 612 648]
5-2-3 Clean-Burning Fireplace Standards [480 562 590]
5-2-4 Fuel-Fired Generators [489 562 590]
5-2-5 Crime Prevention Requirements for Residential Buildings, Garages and Accessory Structures [28 562 588]

Article 5-3 **ELECTRICAL CODE**

5-3-1 National Electrical Code 2011; International Code Council Electrical Code Administrative Provisions 2006 [489 562 588 648]
5-3-2 Amendments [588 648]

Article 5-4 **MECHANICAL CODE**

5-4-1 International Mechanical Code 2012 [489 562 588 648]
5-4-2 Amendments [588 648]

Article 5-5 **PLUMBING CODE**

5-5-1 International Plumbing Code 2012 [489 588 648]
5-5-2 Amendments [489 588 648]

Article 5-6 **PROPERTY MAINTENANCE CODE** [33 356 489 562 588]

5-6-1 International Property Maintenance Code 2012 [588 648]
5-6-2 Amendments [588 648]

Article 5-7 **FUEL GAS CODE** [588]

5-7-1 International Fuel Gas Code 2012 [588 648]
5-7-2 Amendments [588 648]

Article 5-8 **BUILDING** [169 183 199 373 380 430 459 478 489 513 543 571 572 577 587 588]

5-8-1 When Required [543 572 588]
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5-8-3 Revocation
5-8-4 Native Plant Preservation [577]
5-8-5 Demolition [515 594]

Article 5-9 **ENERGY CONSERVATION CODE** [588]

5-9-1 International Energy Conservation Code 2012 [588 648]
5-9-2 Amendments [588 648]

Article 5-10 **DEVELOPMENT**

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5-11-23 Standards for Recreational Vehicles
5-11-24 Floodways
5-11-25 Nature of Variances
5-11-26 Appeal Board
5-11-27 Conditions for Variances

CHAPTER 5 BUILDING AND CONSTRUCTION [587]

Article 5-1 BUILDING CODE

5-1-1 International Building Code; 2012 Edition [489 562 588 648]
5-1-2 Amendments [489 551 552 562 588 612 648]
5-1-3 Must Conform to Zoning Ordinance [562 588 594]
5-1-4 Adobe Code [489 562]
5-1-5 Repealed and Reserved [562]
5-1-6 Arizonans with Disabilities Regulations [439]
5-1-7 Fuel-Fired Generators [489 562 590]

Section 5-1-1 International Building 2012 [26 95 143 356 489 562 588 648]

That certain document, known as the International Building Code, 2012 Edition, three copies of which are on file in the office of the Town Clerk of Paradise Valley, Arizona, is adopted as a part of this chapter as if fully set out in this Section.

Section 5-1-2 Amendments [143 489 552 551 562 588 612 648]

The 2012 International Building Code Shall Be Amended as Follows:

A. Chapter 1, Administration, of the International Building Code is amended to read:

1. **Section 101.1 Title**, insert the words "Town of Paradise Valley" as the name of jurisdiction. Also add: "The fees and administrative provisions of Chapter 1 of this code shall apply to all the adopted technical codes. Where there is a conflict between these provisions and those of another technical code, these provisions shall apply. Where there is an administrative provision contained in another technical code and not in this code, then the administrative provision of the technical code shall apply."

2. **Section 101.2.1 Appendices**, add the following sentence: "The provisions in Appendix I, Patio Covers are hereby adopted."

3. **Section 104.2 Applications and permits** delete the word "issue" and replace with the word "grant" in the first sentence.

4. **Section 105.1 Required**, add the following sentence: "All permits applied for after the effective date of the adoptive ordinance of this code shall be regulated by this code."

5. **Section 105.2 Work exempt from permit**, delete item 1 and change item 2 to read, "Structures not over 8 inches (20.32 cm) high."

6. **Section 105.3.1. Action on application**, delete the word "issue" and replace with the word "grant" in the last sentence.

7. **Section 105.3.2 Time limitation of application**, delete the text of the section and replace with the following language: "An application for a permit for any proposed work shall be deemed to have been abandoned 270 days after the date of filing. The approval of the application shall conclude the application period. From the conclusion of the application period to the granting of the permit shall be not greater than 90 days. There shall be no extensions awarded."

8. **Section 105.4 Validity of Permit**, delete the words "issuance of" in the first sentence and delete the word "issuance" and replace with "grant" in the fourth sentence. Add the following sentence to the end of the section: "All nonconformities which may affect health, safety, and welfare must be corrected to the satisfaction of the Director of Building Inspection prior to issuance of a permit."

9. **Section 105.5 Expiration**, delete the text of the section and replace with the following language: "Every permit issued shall become invalid unless the work authorized by such permit is commenced and required inspection(s) are requested by the permittee and approved by the Building Official within 180 days after its being granted, or if more than 180 days elapses between approval of required inspections.

   Any permittee holding an active permit may apply for an extension of the time within which work may commence or be completed under that permit when the permittee is unable to commence or complete work within the time required by this section. The Building Official may extend the time for either commencement or completion of work by the permittee by granting up to three additional "extension dates" for periods not exceeding 180 days each. On written request by the permittee the Building Official's granting of each 180 day extension date shall be based on a hardship or other circumstance beyond the permittee's control and only after payment of the extension date fees specified herein. Permits for swimming pools may be extended more than three times at the discretion of the building official when required by the construction sequence.

   If a 180-day permit extension date is granted, there will be no charge. If a second 180-day permit extension date is granted, there will be a charge equal to 50% of the original permit fee. If a third 180-day permit extension date is granted, there will be a charge equal to 100% of the original permit fee. A total of no more than three extension dates may be granted.

A permit issued for a non-hillside structure on residential property, including grading for such structure, shall expire nine hundred (900) days after the date of issuance of a building permit and/or a grading permit for such structure. A permit issued for a hillside structure on residential property, including grading for such structure, shall expire twelve hundred sixty (1260) days after the date of issuance of a building permit and/or a grading permit for such structure.

A late fee shall be assessed against any property for which the nine hundred (900) or twelve hundred sixty (1260) day permit has expired. Said late fee shall be in the amount of $1,000 for each month or part thereof that construction continues past the permit expiration date, including the final extension date, if any, on the building permit. All late fees shall be paid prior to the issuance of a certificate of occupancy."

10. **Section 106.5 Retention of construction documents** delete the word "180" and replace with the word "90".

11. **Section 108.2 Schedule of permit fees**, delete the words "schedule as established by the applicable governing authority" and replace with "Town of Paradise Valley Fee Schedule, of which three copies are filed with the Office of Clerk".

12. **Section 108.3 Building permit valuations**, add the following paragraph: "For purposes of determining valuations, the most current building valuation data as stated in the Town of Paradise Valley Master Fee Schedule shall be used. The valuation for any shell-only building shall be permitted to be reduced by 20%."

13. **Section 108.4 Work commencing before permit issuance**, delete the word "issuance", replace with the word "granting" in the title and add the following paragraph: "This fee shall be equal to the amount of the permit fee required by the adopted fee schedule. The payment of such fee shall not exempt an applicant from all other provisions of either this code or other requirements nor from the penalty prescribed by law."

14. **Section 108.6 Refunds**, delete the text of the section and replace with the following language: "The Building Official shall be permitted to authorize refunding of a fee paid hereunder which was erroneously paid or collected. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the permit fee paid when no work has been done under a permit issued in accordance with this code. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any examination time has been expended. The Building Official shall not be permitted to authorize refunding of any permit fee paid except upon written application filed by the original permittee not later than 90 days after the date of fee payment."

15. **Section 112.1 General**, delete the sentence "The board of appeals shall be appointed by the governing body and shall hold office at its pleasure" and replace with "The board of appeals shall be the Town Council."

16. **Section 112.3 Qualifications**, delete this subsection in its entirety.

17. **Section 114.1 Authority**, delete the text of this section and replace with the following language: "Whenever the Building Official determines that an action being taken is in conflict with this code, or when the violation threatens the health and safety of the public or the environment, he shall cause to be issued a stop work order, which shall prohibit any work or other activity at the site."

18. **Section 114.2 Issuance**, delete the text of this section and replace with the following language: "The stop work order shall set forth the alleged violations and may list remedies to be taken to correct the violations. The stop work order shall be effective upon issuance and shall remain in effect until a finding is made by the building official that the circumstances giving rise to its order no longer exist."

19. **Section 114.3 Unlawful continuance,** delete the text of this section and replace with the following language: "Whenever a stop work order has been posted, no person shall remain in, perform work on, or enter any building that has been so posted. No person shall remove or deface any such notice after it is posted until the required actions have been completed and the order has been removed by the Building Official. It shall be unlawful to violate a stop work order subject to penalties as prescribed by law."

20. Add a new section, "**114.4 Penalty**. Any person who shall violate any of the provisions of this chapter shall be guilty of a class 1 misdemeanor and upon conviction thereof shall be punished by a fine not to exceed two thousand five hundred dollars ($2,500.00) or by imprisonment for a period not to exceed six months or by both fine and imprisonment. In the alternative to the criminal penalty, civil prosecution may proceed pursuant to Article 1-9 of this Code."

B. **Chapter 2, DEFINITIONS**, of the International Building Code is amended to read:

1. **Section 201.3 Terms defined in other codes**, delete the text of the section, and replace with the following: "When terms are not defined in this code and are defined in another adopted code, such terms shall have the meanings ascribed to them in those codes."

C. **Chapter 3, USE AND OCCUPANCY CLASSIFICATION**, of the International Building Code is amended to read:

1. **Section 308.2 Group I-1**, delete the text of the section and replace with the following language: "This occupancy shall include buildings, structures, or parts thereof housing more than 10 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a residential environment that provides

supervisory care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to the following:

Residential board and care facilities
Assisted living centers
Halfway houses
Group homes
Congregate care facilities
Social rehabilitation facilities
Alcohol and drug abuse centers
Convalescent facilities

A facility such as the above with 10 or fewer persons shall be classified as A Group R-4 Condition 1 or shall comply with the International Residential code in accordance with Section 101.2 where the building is in compliance with Section 421 of this code."

2. **Section 308.3 Group I-2**, delete the text of the section and replace with the following language: "This occupancy shall include buildings or structures used for medical, surgical, psychiatric, nursing, custodial, personal, or directed care on a 24-hour basis of more than 5 persons who are not capable of self-preservation by responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to the following:

   Hospitals
   Nursing homes (both intermediate care and skilled nursing facilities)
   Mental hospitals
   Detoxification facilities

   A facility such as the above with five or fewer persons shall be classified as group R-3 or shall comply with the International Residential Code in accordance with Section 101.2.

   This occupancy shall also include buildings and structures used for assisted living homes providing supervisory, personal, or directed care on a 24-hour basis to more than 10 persons who are not capable of self-preservation by responding to an emergency situation without physical assistance from staff. A facility such as the above with 10 or fewer persons shall be classified as R-4 Condition 2."

3. **Section 310.1 Residential Group R**

   R-4, delete the text of the section, and replace with the following language: "Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living homes including not more than 10 occupants, excluding staff.

310.1.1 Condition 1. This occupancy condition shall include facilities licensed to provide supervisory care services, in which occupants are capable of self-preservation by responding to an emergency situation without physical assistance from staff. Condition 1 facilities housing more than 10 persons shall be classified as a Group I-1.

310.1.2 Condition 2. This occupancy condition shall include facilities licensed to provide personal or directed care services, in which occupants are incapable of self-preservation by responding to an emergency situation without physical assistance from staff. Condition 2 facilities housing more than 10 persons shall be classified as Group I-2.

R-4 occupancies shall meet the requirements for construction as defined in Group R-3 except as otherwise provided for in this code and Section 421 or shall comply with the International Residential Code in accordance with Section 101.2, where the building is in compliance with Section 421 of this code.

4. **Section 310.2 Definitions**, delete the definitions for Personal Care Service and Residential Care/Assisted Living Home and replace with the following:

   Personal Care Service. Assistance with activities of daily living that can be performed by persons without professional skills or professional training and includes the coordination or provision of intermittent nursing services and the administration of medications and treatments.

   Residential Care/Assisted Living Home. A building or part thereof housing a maximum of 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides supervisory, personal or directed care services. This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living homes, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.

   Add the following definitions:

   Supervisory Care Service. General supervision, including daily awareness of resident functioning and continuing needs.

   Directed Care Services. Care of residents, including personal care services, who are incapable of recognizing danger, summoning assistance, expressing need or making basic care decisions.

D. **Chapter 4, SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY**, of the International Building Code is amended to read:

1. Add a new **Section 421** Residential Care/Assisted Living Homes, as follows:

421.1 Applicability. The provisions of this section shall apply to a building or part thereof housing not more than 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment, which provides licensed care services. Except as specifically required by this division, R-4 occupancies shall meet all applicable provisions of Group R-3.

421.2 General. Buildings or portions of buildings classified as R-4 occupancies shall meet all the applicable provisions of Group R-3, may be constructed of any materials allowed by this code, shall not exceed two stories in height nor be located above the second story in any building and shall not exceed 2000 square feet above the first story, except as provided in Section 506.

421.3 Special provision. R-4 occupancies having more than 2000 square feet of floor area above the first floor shall be of not less than one-hour fire-resistive construction throughout.

421.3.1 Mixed uses. R-4 occupancies shall be separated from other occupancies as provided in Table 508.3.3.

421.4 Access and Means of Egress Facilities.

421.4.1 Accessibility. R-4 occupancies shall be provided with at least one accessible route per the Arizonans with Disabilities Act.
Exception: Existing buildings shall comply with section 3409. Bathing and toilet facilities need not be made accessible, but shall be provided with grab bars in accordance with ICC/ANSI A117.1.

421.4.2 Exits.

421.4.2.1 Number of exits. Every story, basement or portion thereof shall have not less than two exits.

Exception: Basements and stories above the first floor containing no sleeping rooms used by residents may have one means of egress as provided in Chapter 10.

421.4.2.2 Distance to Exits. The maximum travel distance shall comply with Section 1016, except that the maximum travel distance from the center point of any sleeping room to an exit shall not exceed 75 feet.

421.4.2.3 Emergency Exit Illumination. In the event of a power failure, exit illumination shall be automatically provided from an emergency system powered by storage batteries or an onsite generator set installed in accordance with the ICC Electric Code.

421.4.2.4 Emergency Escape and Rescue. R-4 occupancies shall comply with the requirements of Section 1026, except that exception 1 to Section 1026.1 does not apply to R-4 occupancies.

421.4.2.5 Delayed Egress Locks. In R-4 Condition 2 occupancies, delayed egress locks shall be permitted in accordance with Sections 1008.1.3.4 and 1008.1.8.6, items 1, 2, 4, 5 and 6.

421.5 Smoke Detectors and Sprinkler Systems.

421.5.1 General. All habitable rooms and hallways and R-4 occupancies shall be provided with smoke alarms installed in accordance with Section 907.2.10.

421.5.2 Sprinkler Systems. R-4 occupancies shall be provided with a sprinkler system installed in accordance with Section 903.3.1.3. Sprinkler systems installed under this section shall be installed throughout, including attached garages, and in Condition 2 facilities, shall include concealed spaces of or containing combustible materials. Such systems may not contain unsupervised valves between the domestic water riser control valve and the sprinklers. In R-2 Condition 2 occupancies, such systems shall contain water flow switches electrically supervised by an approved supervising station, and shall sound an audible signal at a constantly attended location.

E. **Chapter 9, FIRE PROTECTION SYSTEMS**, of the International Building Code is amended to read:

1. **Section 901.5 Acceptance tests**, delete the last sentence and replace with the following language: "It shall be unlawful to use, occupy, or furnish any portion of a structure until the fire protection systems of the structure have been tested and approved."

2. **Section 903.2 Where required**, delete the text of the section, retaining the exception, and replace with the following language: "Except as otherwise exempted by the Fire Chief, including cases of minor repair, minor additions, changes in occupancy and low fire load, a complete automatic sprinkler system shall be installed throughout all new buildings and structures regulated by this code."

F. **Chapter 10, MEANS OF EGRESS**, of the International Building Code is amended to read:

1. **Section 1008.1.2 Door swing**, delete the text of exception #4 and replace with the following language: "Doors within or serving a single dwelling unit in Groups R-2 and R-3, as applicable in Section 101.2, and R-4.

G. **Chapter 11, ACCESSIBILITY**, of the International Building Code is amended to read:

1. **Section 1101.1 Scope**, delete the text of the section and replace with the following language: "The provisions of this chapter and the Arizona Revised Statutes (ARS) Section 41-1492 through 41-1492.12 shall control the design and construction of facilities for accessibility to physically disabled persons.

2. **Section 1101.2 Design**, delete the text of the section and replace with the following language: "Buildings and facilities shall be designed and constructed to be accessible in accordance with this code, ICC A117.1, and in accordance with the provisions of the State of Arizona Attorney General Administrative Rules R-10-3-401 through R-10-3-404, whichever standard provides the greater degree of accessibility. This dual-reference provision shall apply in all cases where ICC A117.1 is referenced in this chapter.

3. **Section 1103.2.6 Construction sites**, add the following sentences: "The public portions of temporary sales offices/trailers are required to be accessible. There shall be accessible parking and an accessible route from the accessible parking aisle to the sales office/trailer and throughout the public portion of the sales office/trailer, including the design center. Accessible toilet rooms shall be provided according to this code."

4. **Section 1109.2.2 Water closet compartment**, add the following sentence: "A baby changing station shall not be located within a water closet compartment."

5. **Section 1109.3 Sinks**, rewrite the exception to read:
   1. Mop or service sinks are not required to be accessible.
   2. Manufacturing process sinks
   3. Commercial sinks in kitchens, other than hand sinks.

H. **Chapter 16, STRUCTURAL DESIGN**, of the International Building Code is amended to read:

1. **Table 1607.1 MINIMUM UMIFORMLY DISTRIBUTED LIVE LOADS AND MINIMUM CONCENTRATED LIVE LOADS**, for item 28 Residential, replace the 30 psf for One- and two-family dwellings Habitable attics and sleeping rooms with 40 psf.

I. **Chapter 29, PLUMBING SYSTEMS**, of the International Building Code is amended to read:

1. **Table 2902.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES**, delete the requirement for a service sink in B (No. 2) and M (No. 6) Occupancies.

J. **Chapter 31, SPECIAL CONSTRUCTION**, of the International Building Code is amended as follows:

1. **Section 3109 SWIMMING POOL ENCLOSURES AND SAFETY DEVICES**, delete in its entirety.

K. **Chapter 34, EXISTING STRUCTURES**, of the International Building Code is amended as follows:

1. **Section 3410.2 Applicability**, insert the date, "July 1, 2007" in the first sentence.

Section 5-1-3 Must Conform to Zoning Ordinance [562 588 594]

A. The issuance of a permit shall not be construed to be a permit for, or an approval of any violation of the provisions of the Town Code, Zoning Ordinance or Special Use Permit. No permit presuming to grant authority to violate the Town Code, Zoning Ordinance, or Special Use Permit is valid.

B. Whenever any work is being done contrary to the provisions of the Town Code, Zoning Ordinance, or Special Use Permit the Director of Building Inspection shall order the work stopped by notice in writing served on any person engaged in the doing or causing such work to be done. Work shall not begin again until authorized by the Director of Building Inspection.

C. Notwithstanding any other provision of this Code, the requirements set forth in this chapter shall not apply to governmental buildings or structures.

Section 5-1-4 Adobe Code [114 562 588]

A. General

The use of unreinforced masonry of unburned clay units shall be limited to buildings of Group R Division 3 and Group U occupancies of no more than one (1) story in height. The design and structural calculations shall be prepared by an architect or engineer. A national recognized standard for adobe construction shall be used.

Section 5-1-5 Repealed and Reserved [562]

Section 5-1-6 Arizonans with Disabilities Regulations [439 562]

A. Standards and specifications set forth in Title 41, Chapter 9, Article 8, Arizona Revised Statutes (Arizonans with Disabilities Act), and its implementing rules, including

"Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities", declared a public record by Resolution 899, as applying to public entities, are hereby adopted and incorporated as an amendment to the Town's Building Code, adopted in Section 5-1-1 of the Town Code and made part thereof as though fully set forth therein. Such standards and specifications shall apply to new construction and alterations and are not required in buildings or portions of existing buildings that do not meet the standards and specifications.

B. Standards and specifications set forth in Title 41, Chapter 9, Article 8, Arizona Revised Statutes (Arizonans with Disabilities Act), and its implementing rules, including "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities", declared a public record by Resolution 899, as applying to public accommodations and commercial facilities, are hereby adopted and incorporated as an amendment to the Town's Building Code, adopted in Section 5-1-1 of this Code, and made part thereof as though fully set forth therein. Such standards and specifications shall apply to new construction and alterations commenced after September 3, 1996.

C. If a provision of this Section or the rules adopted herein are in conflict with the Town's Building Code, as adopted in Section 5-1-1 or any future Building Code, then the provisions of this Section shall supersede and control.

D. The owner or his agent is responsible for certifying compliance with this Section on new construction and alterations and to pay, in addition to the applicable permit cost set in the Town's fee schedule, any other costs incurred by the Town associated with ADA inspection or approval of the new construction or alteration.

489 562 590

Section 5-1-7 Fuel-Fired Generators

The use and operation of fuel-fired generators on any construction site, new, existing or remodeling, is hereby prohibited, unless temporary power is unavailable.

Article 5-2 RESIDENTIAL CODE

5-2-1 International Residential Code 2012 [588 648]
5-2-2 Amendments [588 612 648]
5-2-3 Clean-Burning Fireplace Standards [590]
5-2-4 Fuel-Fired Generators [590]
5-2-5 Crime Prevention Requirements for Residential Buildings, Garages and Accessory Structures

Section 5-2-1 International Residential Code 2012 Edition

That certain document, known as the International Residential Code, 2012 Edition, three copies of which are on file in the office of the Town Clerk of Paradise Valley, Arizona, is adopted as a part of this chapter as if fully set out in this Section.

Section 5-2-2 Amendments [588 612 648]

The 2012 International Residential Code shall be amended as follows:

A. **Chapter 1, ADMINISTRATION**, of the International Residential Code is amended to read:

1. **Section R101.1 Title**, insert the words "Town of Paradise Valley" as the name of jurisdiction.

2. **Section R102.5 Appendices**, add the following sentence: "The provisions of appendices A, B, C, D, G (as amended), H, J, M and P are hereby adopted."

3. **Section R104.2 Applications and permits**, delete the word "issue" and replace with the word "grant" in the first sentence.

4. **Section R105.2**, **Work exempt from permit**, delete item 1, change item 2 to read, "Structures not over 8 inches (20.32 cm) high." and delete the words "24 inches (610mm)" in sub-paragraph #7 of "Building" and replace with "18 inches (454 mm)".

5. **Section R105.3.1. Action on application**, delete the word "issue" and replace with the word "grant" in the last sentence

6. **Section R105.3.2 Time limitation of application**, delete the text of the section and replace with the following language: "An application for a permit for any proposed work shall be deemed to have been abandoned 270 days after the date of filing. The approval of the application shall conclude the application period. From the conclusion of the application period to the granting of the permit shall be not greater than 90 days. There shall be no extensions awarded."

7. **Section R105.4 Validity of Permit**, delete the words "issuance of" in the first sentence and delete the word "issuance" and replace with "grant" in the fourth sentence. Add the following sentence to the end of the section: "All nonconformities which may affect health, safety, and welfare must be corrected to the satisfaction of the Director of Building Inspection prior to issuance of a permit."

8. **Section R105.5 Expiration**, delete the text of the section and replace with the following language: 551 562 612

   "Every permit issued shall become invalid unless the work authorized by such permit is commenced and required inspection(s) are requested by the permittee and approved by the Building Official within 180 days after it's being granted, or if more than 180 days elapses between approval of required inspections.

   Any permittee holding an active permit may apply for an extension of the time within which work may commence or be completed under that permit when the permittee is unable to commence or complete work within the time required by this section. The Building Official may extend the time for either commencement or completion of work by the permittee by granting up to three additional "extension dates" for periods not exceeding 180 days each. On written request by the permittee the Building Official's granting of each 180 day extension date shall be based on a hardship or other circumstance beyond the permittee's control and only after payment of the extension date fees specified herein. Permits for swimming pools may be extended more than three times at the discretion of the Building Official when required by the construction sequence.

   If a 180-day permit extension date is granted, there will be no charge. If a second 180-day permit extension date is granted, there will be a charge equal to 50% of the original permit fee. If a third 180-day permit extension date is granted, there will be a charge equal to 100% of the original permit fee. A total of no more than three extension dates may be granted.

   A permit issued for a non-hillside structure on residential property, including grading for such structure, shall expire nine hundred (900) days after the date of issuance of a building permit and/or a grading permit for such structure. A permit issued for a hillside structure on residential property, including grading for such structure, shall expire twelve hundred sixty (1260) days after the date of issuance of a building permit and/or a grading permit for such structure.

   A late fee shall be assessed against any property for which the nine hundred (900) or twelve hundred sixty (1260) day permit has expired. Said late fee shall be in the amount of $1,000 for each month or part thereof that construction continues past the permit expiration date, including the final extension date, if any, on the building

permit. All late fees shall be paid prior to the issuance of a certificate of occupancy."

9. **Section R106.5 Retention of construction documents**, delete the word "180" and replace with "90".

10. **Section R108.2 Schedule of permit fees**, delete the words "schedule as established by the applicable governing authority" and replace with "Town of Paradise Valley Fee Schedule, of which three copies are filed with the Office of Clerk".

11. **Section R108.3 Building permit valuations**, add the following paragraph: "For purposes of determining valuations, the most current building valuation data as stated in the Town of Paradise Valley Master Fee Schedule shall be used."

12. **Section R108.5 Refunds**, delete the text of the section and replace with the following language: "The Building Official shall be permitted to authorize refunding of a fee paid hereunder which was erroneously paid or collected. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the permit fee paid when no work has been done under a permit issued in accordance with this code. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any examination time has been expended. The Building Official shall not be permitted to authorize refunding of any permit fee paid except upon written application filed by the original permittee not later than 90 days after the date of fee payment."

13. Add a new section, "**Section R108.6 Work commencing before permit issuance**. Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary permits shall be subject to a fee established by the building official that shall be in addition to the required permit fee. This fee shall be equal to the amount of the permit fee required by the adopted fee schedule. The payment of such fee shall not exempt an applicant from all other provisions of either this code or other requirements nor from the penalty prescribed by law."

14. **Section R112.1 General**, delete the sentence "The board of appeals shall be appointed by the governing body and shall hold office at its pleasure" and replace with "The board shall be the Town Council."

15. **Section R112.3 Qualifications**, delete this subsection in its entirety.

16. **Section R114.1 Notice to owner**, delete the text of this section and replace with the following language: "**Authority**. Whenever the Building Official determines that an action being taken is in conflict with this code, or when the violation threatens the health and safety of the public or the environment, he shall cause to be

issued a stop work order, which shall prohibit any work or other activity at the site."

17. **Section 114.2 Unlawful continuance**, delete the text of this section and replace with the following language: "**Issuance**. The stop work order shall set forth the alleged violations and may list remedies to be taken to correct the violations. The stop work order shall be effective upon issuance and shall remain in effect until a finding is made by the building official that the circumstances giving rise to its order no longer exist."

16. Add a new section, "**Section R114.3 Unlawful continuance.** Whenever a stop work order has been posted, no person shall remain in, perform work on, or enter any building that has been so posted. No person shall remove or deface any such notice after it is posted until the required actions have been completed and the order has been removed by the Building Official. It shall be unlawful to violate a stop work order subject to penalties as prescribed by law."

17. Add a new section, "**R114.4 Penalty**. Any person who shall violate any of the provisions of this chapter shall be guilty of a class 1 misdemeanor and upon conviction thereof shall be punished by a fine not to exceed two thousand five hundred dollars ($2,500.00) or by imprisonment for a period not to exceed six months or by both fine and imprisonment. In the alternative to the criminal penalty, civil prosecution may proceed pursuant to Article 1-9 of this Code."

B. **Chapter 3, BUILDING PLANNING**, of the International Residential Code is amended to read:

1. **Table R301.2(1)**, insert the following design criteria: "Roof Snow Load: 0 psf; Wind speed: 90 mph, Exposure B; Seismic Design Category: B; Weathering: NEGLIGIBLE; Frost Line Depth: 12"; Termite: MODERATE TO HEAVY; Decay: NONE TO SLIGHT; Winter Design Temperature: 34 degrees F; Flood Hazards: National Flood Insurance Program 040049"

2. **Table R301.5**, change the live load limit for sleeping rooms from 30 psf to 40 psf.

3. **Section R309.1**, add the following sentence, "Doors providing opening protection shall be maintained self-closing and self-latching."

C. **Chapter 13, GENERAL MECHANICAL SYSTEM REQUIREMENTS**, of the International Residential Code is amended to read:

1. **Section M1307.3**, add an exception that reads: "Exception: Clothes dryers installed in private garages."

D. **Chapter 24, FUEL GAS**, of the International Residential Code is amended to read:

1. **Section 2415.9 & 2415.9.1**, delete the text of the section and subsection, and replace with the following language: "Underground piping systems shall be installed a minimum depth of 12 inches below grade for metal piping and 18 inches for plastic piping."

E. **Chapter 36, BRANCH CIRCUITS AND FEEDER REQUIREMENTS**, of the International Residential Code is amended to read:

1. **Section E3603.2**, delete the text of the section, retain the exception, and replace with the following language: "A minimum of two 20-ampere-rated branch circuits shall be provided to serve receptacles located in the kitchen, pantry, breakfast area and dining area. The kitchen countertop receptacles shall be served by a minimum of two 20-ampere-rated branch circuits, either or both of which shall also be permitted to supply other receptacle outlets in the kitchen, pantry, breakfast area and dining area, including receptacle outlets for refrigeration appliances. Dishwasher and garbage disposer shall be permitted to be on the same 20-ampere branch circuit."

F. **Appendix G, SWIMMING POOLS, SPAS AND HOT TUBS**, of the International Residential Code is amended to read:

1. **Section AG102 Definitions**, delete the definition for "Swimming Pool" and replace with: "Any contained body of water 18 inches (457 mm) or more in depth at any point and that is wider than 8 feet (2400 mm) at any point. This includes in-ground, above ground and on-ground swimming pools and hot tubs and spas."

2. **Section AG105.2 Outdoor swimming pool** item 1, revise the text of this subsection to read, "The top of the barrier shall be at least 60 inches (1524 mm) above grade measured on the side of the barrier which faces away from the swimming pool. The top of the barrier that separates the swimming pool only from habitable spaces on the same property shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm). The maximum vertical clearance at the bottom of the barrier may be increased to 4 inches (102 mm) when grade is a solid surface such as concrete. The barrier shall be at least 20 inches from the water's edge."

3. **Section AG105.2 Outdoor swimming pool** item 2, add a sentence that reads, "Any decorative design work such as protrusions, indentations or cutouts which make the barrier easily climbable is prohibited."

4. **Section AG105.2 Outdoor swimming pool** item 4, revise the text to read, "There shall be at least 45" inches between horizontal elements."

5. **Section AG105.2 Outdoor swimming pool** item 5 is deleted and subsequent items are renumbered.

6. **Section AG105.2 Outdoor swimming pool** item 6 (now 5), add the following sentence, “Chain link fencing shall not be less than 11 gauge.”

7. **Section AG105.2 Outdoor swimming pool** item 8 (now 7), revise the 3rd sentence to read, “Gates other then pedestrian access gates shall be lockable.”

8. **Section AG105.2 Outdoor swimming pool** item 9.1 (now 8.1), revise the text to read, “In lieu of the barrier between the dwelling and the swimming pool, the swimming pool shall be equipped with a powered safety cover in compliance with ASTM F1346; or”

9. **Section AG105.2 Outdoor swimming pool** item 9.3 (now 8.3), add the following sentence, “Self-closing and self latching devices shall be installed on all doors with direct access to the pool area, with the release mechanism located a minimum of fifty-four inches above the floor.”

10. **Section AG105.2 Outdoor swimming pool**, add a new item 10 that reads, “10. Pet doors which provide direct access to the pool area are prohibited unless they meet the requirements of AG105.2 item 2 or are equipped with an alarm that meets AG105.2 item 8.2.”

11. **Section AG105.2 Outdoor swimming pool**, add a new item 11 that reads, “11. “Windows with access to the pool areas will be protected in the following ways:
    1. Emergency escape or rescue windows from sleeping areas with access to the swimming pool will be equipped with a latching device not less than fifty-four inches above the floor.
    2. All other openable windows with similar access will also be equipped with a latching device not less than fifty-four inches above the floor or shall be equipped with key lock device that prevents opening the window more than four inches.”

Section 5-2-3 <u>Clean-Burning Fireplace Standards</u> 450 562 590

A. The purpose of this section is to regulate fireplaces, woodstoves or other solid-fuel burning devices to reduce the amount of air pollution caused by particulate matter and carbon monoxide.

B. For purposes of this section, the following words and terms shall be defined as follows:

1. "Fireplace" means a built in place masonry hearth and fire chamber of a factory-built appliance, designed to burn solid fuel or to accommodate gas or electric log insert or similar device, and which is intended for occasional recreational or aesthetic use, not for cooking, heating, or industrial processes.

2. "Solid Fuel" includes but is not limited to wood, coal, or other nongaseous or nonliquid fuels, including those fuels defined by the Maricopa County Air Pollution Control Officer as "inappropriate fuel" to burn in residential woodburning devices.

3. "Woodstove" means a solid-fuel burning heating appliance including a pellet stove, which is either freestanding or designed to be inserted into a fireplace.

C. No person, firm or corporation shall construct or install a fireplace or a woodstove, and the Building Official shall not approve or issue a permit to construct or install a fireplace or a woodstove, unless the fireplace or woodstove complies with one of the following:

1. A fireplace which has a permanently installed gas or electric log insert.

2. A fireplace, woodstove or other solid-fuel burning appliance which has been certified by the United States Environmental Protection Agency as conforming to 40 Code of Federal Regulations Part 60, Subpart AAA as in effect on July 1, 1990.

3. A fireplace, woodstove or other solid-fuel burning appliance which has been tested and listed by a nationally recognized testing agency to meet performance standards equivalent to those adopted by 40 Code of Federal Regulations Part 60, Subpart AAA as in effect on July 1, 1990.

4. A fireplace, woodstove or other solid-fuel burning appliance which has been determined by the Maricopa County Air Pollution Control Officer to meet performance standards equivalent to those adopted by 40 Code of Federal Regulations Part 60, Subpart AAA as in effect on July 1, 1990.

5. A fireplace which has a permanently installed woodstove insert which complies with paragraphs 2, 3, or 4 above.

D. The following installations are not regulated by this section and are not prohibited by this section:

1. Furnaces, boiler, incinerators, kilns, and other similar space heating or industrial process equipment.

2. Cookstoves, barbecue grills, and similar appliances designed primarily for cooking.

3. Fire pits, barbecue grills, and other outdoor fireplaces.

E. No person, firm or corporation shall alter or remove a gas or electric log insert or a woodstove insert from a fireplace for purposes of converting the fireplaces to directly burn wood or other solid fuel. No person, firm or corporation shall alter a fireplace,

woodstove or other solid fuel burning appliance in any manner that would void its certification or operational compliance with the provision of this section.

F. In addition to the provisions and restrictions of this section, construction, installation or alteration of all fireplaces, woodstoves and other gas, electric or solid-fuel burning appliances and equipment shall be done in compliance with provisions of the Town's Building Code and shall be subject to the permits and inspections required by the Town's Building Code.

Section 5-2-4 Fuel-Fired Generators [489 562 590]

The use and operation of fuel-fired generators on any construction site, new, existing or remodeling, is hereby prohibited, unless temporary power is unavailable.

Section 5-2-5 Crime Prevention Requirements for Residential Buildings, Garages and Accessory Structures [28 562 588]

A. Scope of Section

The provisions of this Section shall apply to (a) all residential buildings, garages, and accessory structures for which a building permit has not been issued prior to the effective date of this Section, as provided by Article XV of the Town Zoning Ordinance, and (b) the replacement or addition of any exterior door, exterior door hinge, exterior door frame, exterior door lock, exterior door lock strike plate, sliding glass door, window, address number sign or marker, and garage door, or ingress on any residential building, garage or accessory structure.

B. Construing this Section with Other Laws

The provisions of this Section shall be construed to be in harmony with the International Residential Code, as adopted by this Article, and the Town Zoning Ordinance, where possible. If a provision of this Section is held to be in conflict with the International Residential Code or the Zoning Ordinance, then the provision or provisions of this Section shall supersede and control.

C. Doors

1. Exterior Doors

All exterior doors, except sliding glass doors or metal doors, with or without decorative molding, shall be solid core wood doors and shall be at least the following thickness:

flush doors 1 3/4 inches
panel doors 1/2 inches at the panels
1 3/4 inches in all other areas

2. Hinges

   All exterior door hinges shall be mounted with the hinge on the interior of the building; except where a non-removable pin hinge or stud bolt is used, such hinge may be installed with the hinge facing the exterior of the building.

3. Frames

   All exterior door frames shall be at least 1 inch actual thickness.

4. Locks[161]

   All exterior doors shall be equipped with at least one exterior key operated dead bolt with at least a 1 inch throw and security device on the exterior to protect the cylinder from a twist attack. All windows should be capable of being opened at all times from the inside without the use of keys.

5. Strike Plate Lock Area

   a. The shim space between the door buck and door frame shall have a solid wood filler 12 inches above and below the strike plate area to resist breaking by force applied to the door frame.

   b. Screws securing the strike plate area shall pass through the strike plate, door frame, solid wood filler and enter the buck place by a minimum of 1/4 inch, or equivalent anchorage in other types of construction.

6. Door Viewers

   A door viewer with a minimum field of view of 180 degrees shall be installed at the major entrance or in the front door.

7. Glass in Exterior Doors

   No glass may be used on any exterior door or window within thirty-six inches of any door lock, except:

   a. That glass shall be replaced with the same thickness of polycarbonate sheeting of an approved type.

   b. Where the exterior door has two separate locks, and each of the two locks has a dead bolt that extends at least one inch into the strike frame.

c. French doors: French doors shall have a concealed header and threshold bolt in the stationary, or first closed door, on the door edge.

d. Dutch doors: Dutch doors shall have concealed header securing device interlocking the upper and lower portions of the door edge on the door strike, except:

1. If a double cylinder lock is provided on the upper and lower sections of the door, then the header bolt may be omitted.

e. Sliding glass doors: Sliding glass doors shall be installed so as to prevent lifting and removal of either glass panel from the frame from the exterior of the building. All sliding glass doors shall have a supplementary lock.

f. Ingress/access panels: All exterior ingress/access panels that provide a means of access to the interior of the home shall have a keyed or combination locking device.

8. Windows

All nonstationary windows larger than 12" x 15" must have at least one supplemental locking device.

9. Address Marking

The house number shall be displayed in a prominent manner so that it is reasonably visible from the road in front of the house to enable emergency vehicles to locate the residence.

10 Keying Requirements During Construction

Each contractor or party building a structure for occupancy shall use a keying system during construction that incorporates either:

a. A construction cylinder that will be removed upon occupancy by the owner or renter, or new cylinders, and all keys shall be furnished to the owner or occupant;

b. A cylinder system that admits construction keys during construction, but upon occupancy, the owner's key will reset the pin system to prevent the use of the construction key.

11. Garage Doors

a. Each metal, wooden or composition garage door, whether overhead, roller-type, swinging or sliding, shall be so equipped that it is capable of being locked.

Specific locking devices to be employed shall be of one or more of the following types: throwbolt or flushbolt; cylinder-type lock; padlock and hasp; or an electronic power-operated mechanism with automatic locking device.

b. Every garage door shall be capable of being opened at all times from inside of the garage without the use of a key or electrical power.

Article 5-3 ELECTRICAL CODE

5-3-1 National Electrical Code; Electrical Code 2011; International Code Council Electrical Code Administrative Provisions 2006 [489 562 588 648]
5-3-2 Amendments [588]

Section 5-3-1 National Electrical Code 2011; International Code Council Electrical Code Administrative Provisions [143 356 489 562 588 648]

That certain document, known as the National Electrical Code 2011 and the International Code Council Electrical Code Administrative Provisions 2006, three copies of which are on file in the office of the Town Clerk of Paradise Valley, Arizona, is adopted as part of this Chapter as if fully set out in this Section.

Section 5-3-2 Amendments [588]

The International Code Council Electrical Code 2006 is hereby amended as follows:

A. **Chapter 1, Scope**, of the International Code Council Electrical Code is amended to read:

1. **Section 101.1 Title**, insert the words "Town of Paradise Valley" for the name of the jurisdiction.

2. **Section 102.1.3 Additions, alterations and repairs**, delete in its entirety.

3. **Section 102.1.4 Change in occupancy**, delete in its entirety.

B. **Chapter 4, Permits and Fees**, of the International Code Council Electrical Code is amended to read:

1. **Section 402.5 Time limitation of application**, delete the text of the section and replace with the following language: "An application for a permit for any proposed work shall be deemed to have been abandoned 270 days after the date of filing. The approval of the application shall conclude the application period. From the

conclusion of the application period to the granting of the permit shall be not greater than 90 days. There shall be no extensions awarded."

2. **Section 403.2 Expiration**, delete the text of the section and replace with the following language: "Every permit issued shall become invalid unless the work authorized by such permit is commenced and required inspection(s) are requested by the permittee and approved by the Building Official within 180 days after its being granted, or if more than 180 days elapses between approval of required inspections. The Building Official shall be authorized to grant one extension of time for a period not to exceed 180 days. Permits shall not be extended more than once and all requests for extensions shall be in writing."

3. **Section 403.3 Extensions**, delete in its entirety.

4. **Section 404.2 Schedule of permit fees**, insert the following language, "Town of Paradise Valley Master Fee Schedule".

5. **Section 404.5 Refunds**, delete the text of the section and replace with the following language: "The Building Official shall be permitted to authorize refunding of a fee paid hereunder which was erroneously paid or collected. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the permit fee paid when no work has been done under a permit issued in accordance with this code. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any examination time has been expended. The Building Official shall not be permitted to authorize refunding of any permit fee paid except upon written application filed by the original permittee not later than 90 after the date of fee payment."

C. **Chapter 11, Means of Appeal**, of the International Code Council Electrical Code is amended to read:

1. Section 1101.1 Board of appeals established, delete the sentence "The board of appeals shall be appointed by the governing body and shall hold office at its pleasure" and replace with "The board shall be the Town Council."

D. **Chapter 12, Electrical Provisions**, of the International Code Council Electrical Code is amended to read:

1. **Section 1202.1.1**, add the following sentence: "NFPA 70, National Electrical Code, 2011, is referenced as amended."

The NFPA 70, **National Electric Code 2011**, which is adopted by reference in the International Code Council Electrical Code 2006, is not amended.

Article 5-4 MECHANICAL CODE

5-4-1 International Mechanical Code 2012 [489 562 588 648]
5-4-2 Amendments [588 648]

Section 5-4-1 International Mechanical Code 2012 [31 95 143 356 489 562 588 648]

That certain document, known as the International Mechanical Code 2012, three copies of which are on file in the office of the Town Clerk of Paradise Valley, Arizona, is adopted as part of this Chapter as if fully set out in this Section.

Section 5-4-2 Amendments [588 648]

The 2012 International Mechanical Code shall be amended as follows:

A. **Chapter 1, ADMINISTRATION**, of the International Mechanical Code is amended to read:

1. **Section 101.1 Title**, insert the words "Town of Paradise Valley" as the name of jurisdiction.

2. **Section 106.4.3 Expiration**, delete the text of the section and replace with the following language: "Every permit issued shall become invalid unless the work authorized by such permit is commenced and required inspection(s) are requested by the permittee and approved by the Building Official within 180 days after its being granted, or if more than 180 days elapses between approval of required inspections. The Building Official shall be authorized to grant one extension of time for a period not to exceed 180 days. Permits shall not be extended more than once and all requests for extensions shall be in writing."

3. **Section 106.4.4 Extensions**, delete in its entirety.

4. **Section 106.5.2 Fees**, insert the following language, "Town of Paradise Valley Master Fee Schedule".

5. **Section 106.5.3 Fee refunds**, delete the text of the section and replace with the following language: "The Building Official shall be permitted to authorize refunding of a fee paid hereunder which was erroneously paid or collected. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the permit fee paid when no work has been done under a permit issued in accordance with this code. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any examination time has been expended. The Building Official shall not be permitted to authorize refunding of any fee paid except upon written

application filed by the original permittee not later than 90 after the date of fee payment."

6. **Section 108.4 Violation penalties**, delete in its entirety.

7. **Section 108.5 Stop work orders**, delete the last sentence.

8. **Section 109 MEANS OF APPEAL**, delete in its entirety.

B. **Chapter 3, GENERAL REGULATIONS**, of the International Mechanical Code is amended to read:

1. Section 304.3 Elevation of ignitions sources, add an exception that reads: "Exception: Clothes dryers installed in private garages."

Article 5-5 PLUMBING CODE

5-5-1 International Plumbing Code 2012 [489 588 648]
5-5-2 Amendments [489 588 648]

Section 5-5-1 International Plumbing Code 2012 [29 95 143 356 489 588 648]

That certain document known as the International Plumbing Code 2012, three copies of which are on file in the office of the Town Clerk of Paradise Valley, Arizona, is adopted as part of this chapter as if fully set out in this Section.

Section 5-5-2 Amendments [143 197 489 588 648]

The International Plumbing Code 2012 is hereby amended as follows:

A. **Chapter 1, ADMINISTRATION**, of the International Plumbing Code is amended to read:

1. **Section 101.1 Title**, insert the words "Town of Paradise Valley" as the name of jurisdiction.

2. **Section 106.5.3 Expiration**, delete the text of the section and replace with the following language: "Every permit issued shall become invalid unless the work authorized by such permit is commenced and required inspection(s) are requested by the permittee and approved by the Building Official within 180 days after its being granted, or if more than 180 days elapses between approval of required inspections. The Building Official shall be authorized to grant one extension of time for a period not to exceed 180 days. Permits shall not be extended more than once and all requests for extensions shall be in writing."

3. **Section 106.5.4 Extensions**, delete in its entirety.

4. **Section 106.6.2 Fee schedule**, insert the following language, "Town of Paradise Valley Master Fee Schedule".

5. **Section 106.6.3 Fee refunds**, delete the text of the section and replace with the following language: "The Building Official shall be permitted to authorize refunding of a fee paid hereunder which was erroneously paid or collected. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the permit fee paid when no work has been done under a permit issued in accordance with this code. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or

canceled before any examination time has been expended. The Building Official shall not be permitted to authorize refunding of any fee paid except upon written application filed by the original permittee not later than 90 after the date of fee payment."

6. **Section 108.4 Violation penalties**, delete in its entirety.

7. **Section 108.5 Stop work orders**, delete the last sentence.

8. **Section 109 MEANS OF APPEAL**, delete in its entirety.

B. **Chapter 4, FIXTURES, FAUCETS, AND FIXTURE FITTINGS**, of the International Plumbing Code is amended to read:

1. **Table 403.1 Minimum number of fixtures**, delete the requirement for a service sink in B (No. 2) and M (No. 6) Occupancies.

2. **Section 410.1 Approval**, delete the last sentence and replace with the following language: "In other occupancies, where drinking fountains are required, bottle water dispensers or water coolers shall be permitted to be substituted."

C. **Chapter 12, SPECIAL PIPING AND STORAGE SYSTEMS**, of the International Plumbing Code is amended to read:

1. **Section 1202 Medical Gases** Add a new section, as follows:
1202.1.1. Level 3 dental facilities. Vacuum piping installed under an on-grade floor shall be installed in compliance with recommendations and drawings prepared by a registered design professional and contained within the dental equipment manufacturer's specifications and details, and with the otherwise applicable provisions of NFPA 99C – 2005. All drawings and specifications shall be sufficiently comprehensive as to provide prescriptive installation criteria. Special inspection in accordance with IBC Section 1704.1 shall be provided.

Article 5-6 PROPERTY MAINTENANCE CODE [33 356 489 562 588 648]

5-6-1 International Property Maintenance Code 2012 [588 648]
5-6-2 Amendments [588 648]

Section 5-6-1 International Property Maintenance Code 2012 [588 648]

That certain document, entitled International Property Maintenance Code 2012, three copies of which are on file in the office of the Town Clerk of Paradise Valley, Arizona, is adopted as part of this Chapter as if fully set out in this Article.

Section 5-6-2 Amendments [588 648]

The International Property Maintenance Code 2012 is hereby amended as follows:

A. **Chapter 1, ADMINISTRATION**, of the International Property Maintenance Code is amended to read:

1. **Section 101.1 Title**, insert the words "Town of Paradise Valley" as the name of jurisdiction.

2. **Section 102.3 Application of other codes**, delete the text of the section and replace with the following language: "Repairs, additions, or alterations to a structure, or changes in occupancy, shall be done in accordance with the procedures and provisions of the International Building Code, International Residential Code, International Electric Code, International Mechanical Code and/or International Plumbing Code."

3. **Section 103.5 Fees**, insert the following language, "Town of Paradise Valley Master Fee Schedule".

4. **Section 111 MEANS OF APPEAL**, delete in its entirety.

Article 5-7 **FUEL GAS CODE**

5-7-1 International Fuel Gas Code 2012 [588 648]
5-7-2 Amendments [588 648]

Section 5-7-1 International Fuel Gas Code 2012 [588 648]

That certain document known as the International Fuel Gas Code 2012, three copies of which are on file in the office of the Town Clerk of Paradise Valley, Arizona, is adopted as part of this Chapter as if fully set out in this Article.

Section 5-7-2 Amendments [588 648]

The International Fuel Gas Code 2012 is hereby amended as follows:

A. **Chapter 1, ADMINISTRATION**, of the International Fuel Gas Code is amended to read:

1. **Section 101.1 Title**, insert the words "Town of Paradise Valley" as the name of jurisdiction.

2. **Section 106.5.2 Fees**, insert the following language, "Town of Paradise Valley Master Fee Schedule".

3. **Section 106.5.3 Expiration**, delete the text of the section and replace with the following language: "The Building Official shall be permitted to authorize refunding of a fee paid hereunder which was erroneously paid or collected. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the permit fee paid when no work has been done under a permit issued in accordance with this code. The Building Official shall be permitted to authorize refunding of not more than 80 percent of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any examination time has been expended. The Building Official shall not be permitted to authorize refunding of any fee paid except upon written application filed by the original permittee not later than 90 after the date of fee payment."

4. **Section 108.4 Violation penalties**, delete in its entirety

5. **Section 108.5 Stop work orders**, delete the last sentence.

6. **Section 109 MEANS OF APPEAL**, delete in its entirety.

Article 5-8 BUILDING[169 183 199 373 380 430 459 478 489 513 543 571 572 588]

5-8-1 When Required[543 572 588]
5-8-2 Form[588]
5-8-3 Revocation
5-8-4 Native Plant Preservation[577]
5-8-5 Demolition[515 594]

Section 5-8-1 When Required; Compliance with Tax Regulations and Other Town Code Provisions; Suspension or Revocation of Permit[543 572 588]

A. Building permits for construction of residences in new subdivisions shall not be issued until the installation of all utilities, streets and other offsite improvements have been completed and accepted by the Town, except in those instances where the Council, in its sole discretion, determines that preservation of scenic or natural resources will benefit from the phasing of utilities, streets and other selected offsite improvements. When such preservation is desired, the utilities, streets, and other offsite improvements to be phased shall be properly noted on the final plat, along with the lots that are designated for development in each such phase.

B. Compliance with Town Tax Code Provisions: No building permit shall be issued to any person, firm, corporation, partnership, joint venture or any related party, firms, corporations, partnerships, or joint ventures, however legally organized or constituted, who has been determined by the Town Manager or his designee to owe the Town Transaction Privilege Taxes pursuant to the provisions of the Town Tax Code.

   1. Unless the applicant for a building permit has entered into a written agreement relating to payment of the tax obligation and is at the time of the submittal of the building permit application current in making all payments required under the terms of such agreement.

   2. A building permit issued to any person, firm, corporation, partnership, joint venture or any related party firms, corporations, partnerships, or joint ventures, however legally organized or constituted that is subject to a written agreement relating to the payment of tax obligations as referenced above may be suspended or revoked by the Town Manager or his designee upon the failure of the person, firm, corporation, partnership, joint venture or any related party to make any payments pursuant to the agreement.

Section 5-8-2 Form

A. An application for a building permit shall be made by the owner or lessee, or agent of either. If such application is made by a person other than the owner in fee, it shall be accompanied by a duly verified affidavit of the owner in fee that the proposed work is authorized by the owner in fee and that the person making the application is authorized to make such application as agent of the owner.

B. An application shall contain the full names and addresses of the applicant and of the owner, and, if the owner is a corporate body, of its responsible officers.

Section 5-8-3 Revocation

The Director of Building Inspection under the provisions of this Article whenever there has been any false statement or misrepresentation as to a material fact in the application or plans upon which the permit or approval was based.

Section 5-8-4 Native Plant Preservation[577]

To insure mature protected native plants are not unnecessarily destroyed or removed the Town requires native plant preservation. Upon application for a building permit for all new construction and additions over $500,000 in value and all demolition and grading permits an applicant must first complete a Native Plant Preservation Plan. No person shall destroy, mutilate, remove from the premises, or relocate to another place on the premises any protected native plant during construction within the Town without first submitting a Native Plant Preservation Plan according to the terms of this Article.

A. Protected native plants

Trees which are over four (4) inches in caliper of the following species:

Acacia Constricta	White Thorn Acacia
Acacia Greggii	Catclaw Acacia
Cercidium Microphylum	Foothill Palo Verde
Cercidium Floridum	Blue Palo Verde
Olneya Tesota	Ironwood
Prosopis Species	Mesquite

Cacti which are three (3) feet or greater in height of the following species:

Carnegiea Gigantean	Saguaro
Ferocactus Species	Barrel
Fouquieria Splendens	Ocotillo
Peniocereus Greggii	Desert Night Blooming Cereus

B. Native plant permit

The Town Manager or designee shall prescribe and provide an application form for use by applicants as required by this Article. Additional information may also be required by the Town Manager or his designee in order to insure that the purpose of this section is fulfilled.

1. Native plant inventory, containing:

    a. Aerial photograph and/or site plan showing the location of all protected native plants within the area of disturbance.
    b. List of the number, species, size, general condition, and salvage status of all protected native plants within the area of disturbance.

2. Native plant relocation narrative containing information on the proposed location or relocation of all protected native plants.

C. Penalties

Failure to comply with the requirements of the Native Plant Preservation Plan shall cause immediate suspension of all inspection activity. In addition, any violation of this section is a Class 1 Misdemeanor which, upon conviction, may be punishable by a fine not exceeding two thousand five hundred dollars ($2,500.00), or by imprisonment for a term not to exceed six (6) months, or by both such fine and imprisonment. Each day this violation continues shall constitute a separate offense.

Section 5-8-5 <u>Demolition</u>

A. <u>Definitions.</u>

1. “Demolition” means to destroy, tear down, raze, level, or wreck, or remove any building or structure.

2. “Partial Demolition” means to destroy, tear down, level or raze any portion of an existing building or structure, including walls for additions, remodels, alterations or repairs, excluding but not limited to, painting, flooring, and cabinets or appliances.

3. “Structure Moving” means to detach a building or structure from the surface of the ground for the purpose of moving the building or structure to a different location on the same parcel or to any other parcel in the Town or outside of the Town.

B. <u>Demolition of Buildings</u>.

It shall be unlawful for any person to commence any interior or exterior demolition or partial demolition of any building or structure, or move or relocate any building or structure within the Town without first obtaining a demolition permit from the Town. The fee for a demolition permit shall be as set forth in the Paradise Valley Fee Schedule.

C. Application for Permit and Terms of Permit.

1. An application for a demolition permit shall be submitted in such form as the Town Building Official may prescribe.

2. An application alone shall not vest an individual with a right to begin demolition. No demolition shall take place prior to the issuance of a valid permit by the Town Building Official.

3. A permit may be granted to a licensed contractor in the State of Arizona or the owner of the property in question.

4. Demolition permits shall be valid for a period of six (6) months from the date of issuance.

5. It shall be unlawful to permit a structure to remain detached from the surface of the ground and remain on the site for more than 30 days. Given the strict timing limits, an applicant who intends to move a building or structure should simultaneously obtain a Structure Moving Permit pursuant to Section 11-6 of this Code, and if required, a Right -of-Way permit pursuant to Section 5-10-1 A of this Code.

6. It shall be unlawful for demolished buildings or structures, or demolition debris to remain on the site after work has been completed for more than 7 days, unless the debris is stored completely within a portable metal storage container, in which case the debris and container may not remain on site for more than 30 days.

D. Performance Bond.

When a building is permitted to be demolished, either entirely or partially, pursuant to this chapter, the permittee may be required to post a cash bond or other form of assurance acceptable to the Town, as security for damage to Town property, restoration of the site, and any damage to adjoining property, both public and private, completion of the relocation of a building or structure. The amount of the bond shall be in an amount, as determined by the Town Building Official, which shall be sufficient to complete the demolition and restore the site to its conditions prior to development, and repair any damage to adjoining property, as well as any additional amount as determined necessary by the Town Building Official based upon unusual circumstances or other factors. When such “conditions prior to development” cannot be determined by photographs or other means, the site shall be restored based on the prevailing condition of the remainder of the lot.

E. Dust Control.

Prior to the issuance of a demolition permit, the owner or contractor causing or performing demolition, must furnish a written plan, approved by Maricopa County, specifying the methods or means of controlling dust in accordance with Maricopa County Regulation III,

Rule 310 Fugitive Dust Sources. For the purposes of this section, dust means all fugitive particulate matter as defined by applicable Maricopa County Fugitive Dust Regulations.

The following dust control measures must be adhered to beyond those required by Maricopa County:

1. A water truck, or other means of controlling dust, shall be used as often as necessary to prevent fugitive dust.

2. Street cleaning measures shall be utilized as often as necessary to maintain adjacent public rights-of-way in original condition prior to demolition. As a part of the Demolition Permit application, photos of the adjacent rights-of-way must be submitted for public record.

F. Permit Requirements.

The permittee shall comply with the following requirements before a permit may be issued under this section:

1. Two copies each, of the site plan and floor plan shall be submitted to the Town depicting the detail of the existing on-site structures, including the total square footage of the existing structure and the total square footage of those portions which are to be demolished, the location of any washes or other drainageways that are on the property, and the location of any trees or vegetation that are located in the Town rights-of-way.

2. Photographs of the existing property, along with the adjacent public rights-of-way at intervals of 100 feet, shall be provided to the Town. These photographs shall be labeled as to the direction taken and their locations shall be recorded on a site plan depicting the subject property and all adjacent properties.

3. The location and extent of a demolition may require that a security fence be installed during the demolition process if deemed necessary by the Town Building Official. The fence shall be, at a minimum, chain link fence to a height of six (6) feet above grade with a screening material of a color that complements the natural desert vegetation, and which provides a maximum of 20% opacity. The screening material shall be attached to the outside of the fence and shall be the same height as the fence.

4. If a grading permit is required, pursuant to Article 5-10-5 of this Code, it shall be obtained in conjunction with a demolition permit.

5. If applicable, proof of asbestos inspection by an AHERA-certified asbestos building inspector shall be submitted to the Town.

6. Dust control plan meeting the requirements of Rule 310 of the Maricopa County Air Pollution Control Regulations, as amended.

7. Erosion control plan depicting methods for earth stabilization during demolition and construction process.

G. Restrictions Applicable to Demolitions.

1. If applicable, all utility companies shall be notified in writing by the owner of the property of the intention to demolish the building or structure, copies of which shall be submitted to the Town.

2. Any existing pool or spa shall be properly fenced and maintained or properly demolished and filled with proper fill. Fill material shall be compacted to at least 95% compaction.

3. Any alteration of an existing watercourse, arroyo, or wash upon the lot or parcel, including the natural path water takes when flowing across or from the property, shall be prohibited unless authorized by the Town Engineer pursuant to Section 5-10-5(B)(2a)(e) of this Code.

4. Compliance with all regulations applicable to construction site management as promulgated by the Community Development Director shall be required.

H. Final Inspection.

Before any demolition receives final inspection approval from the Town and before the pertinent bonds or assurances are released, the following requirements shall be met:

1. All loose material involved in the demolition process shall be removed from the lot or parcel, including all concrete, footings, slabs, weeds, debris, and stone.

2. All filled areas shall be restored to a minimum 95% compaction.

3. All basements, pools, tanks, sumps, underground storage tanks, or other subterranean structures shall be removed and backfilled and properly graded or filled with proper material.

4. All public or private property damaged during the demolition process, including street, curb, gutter, pavement, sidewalks and landscaping shall be completely restored.

5. In the case of partial demolition to a non-conforming structure the property owner shall provide the Town Building Official with evidence of a “Special Notice” having been recorded with the Maricopa County Recorder’s office, indicating the percentage of the original non-conforming structure to which structural

modifications were made, and that future owners should review the provisions regarding non-conforming structures contained in the Paradise Valley Zoning Code.

6. Spill slopes or rock surfaces that will be exposed for a period of six months or longer shall be treated with "Eonite" or other approved coloring treatment to blend with the natural desert color.

7. If construction on a demolished area will not take place for a period of 3 months or more after demolition, the property owner shall submit to the Town a detailed plan that will properly address erosion and dust control measures at the subject property.

Article 5-9 ENERGY CONSERVATION CODE [588 648]

5-9-1 International Energy Conservation Code 2012 [588 648]
5-9-2 Amendments [588]

Section 5-9-1 International Energy Conservation Code 2012 [648]

That certain document known as the International Energy Conservation Code, 2012, three copies of which are on file in the office of the Town Clerk Of Paradise Valley, Arizona, is adopted as part of this Chapter as if fully set out in this Section.

Section 5-9-2 Amendments

A. **Chapter 1, ADMINISTRATION**, of the International Energy Conservation Code is amended to read:

1. **Section 101.1 Title**, insert the words "Town of Paradise Valley" as the name of jurisdiction.

Article 5-10 DEVELOPMENT

5-10-1 Right-of-way Permits and Encroachments
5-10-2 Uniform Standard Specifications and Details
5-10-3 Storm Drain Design
5-10-4 Blasting Operations
5-10-5 Grading And Dust Control Regulations [594]
5-10-6 Drilling Permits, Restrictions And Penalties
5-10-7 Dedication of Public Right-of-Way; Drainage Easements, and other Requirements [571]
5-10-8 Required Improvements

Section 5-10-1 Right-of-way Permits and Encroachments

A. Permits Required [132 452 462]

1. Unless otherwise provided by this Code or applicable law, it is unlawful for any person, political subdivision or utility without first having obtained a permit from the Town to perform any work on, over or under the right-of-way of any public road, street or alley. Right-of-way includes, but is not limited to, the air space above the surface and the area below the surface of any public roads, streets, sidewalks or recreation paths and public ways.

Each permit shall be limited to a specific site and duration. Public utilities may be granted annual permits.

2. Continuing or permanent use, work or encroachment in a right of way, road, street or alley, drainageway or easement shall be unlawful without an encroachment permit issued by the Town Engineer after compliance with the provisions of this Article and Town Code.

3. Any public service corporation or public utility which desires to occupy or use the rights of way within the town for facilities or system shall first obtain a permit from the Town.

4. Permits and permittees shall conform to this Code and rules, regulations and procedures adopted by the Town Engineer, subject to review and approval by the Town Council. A permit shall become automatically void if the work authorized by the permit is not begun within ninety (90) days from the date of issuance of the permit unless a different period is stated in the permit. No permit may be sold, transferred, assigned or exchanged in any manner without prior approval of the Town. A permit may be revocable or conditional.[462]

B. Fees [132 144 452]

All permit fees and plan checking fees shall be those prescribed in the Town of Paradise Valley Fee Schedule. These fees shall reimburse the Town for its permit and inspection activities and for costs reasonably related to the costs or damages incurred by or accruing to the Town in connection with the grant and administration of the permit and activities pursuant to the permit.

C. Standards for Construction, Installation and Maintenance [132 452 518]

1. Any person, political subdivision, or utility who excavates, bores, or removes pavement, sidewalk, bicycle or recreation path, curb or gutter in a right-of-way must comply with the provisions of Section 5-10-2 and any amendments thereto. When completed all construction and installation must be called in to the Public Works Department within twenty-four hours for inspection.

2. All installation of facilities shall be per plans approved by the Town. No facilities shall be installed, maintained or used in such a manner as to damage or unreasonably interfere with traffic, other authorized uses over, under or through the rights of way, or the Town's placement, construction, use or maintenance of its rights of way. The Town reserves the prior right to construct, operate and maintain its rights of way. Facilities will be relocated as requested by the Town in the exercise of its police powers at the expense of the owner of the utility unless expressly required otherwise by law.

3. To maximize public and worker safety, to minimize visual clutter, to minimize the amount of disturbance in and along the rights of way, and to the extent authorized by law, permittees shall utilize joint trenches and otherwise coordinate activities to minimize disruption of traffic and damage to the right of way.

4. To prevent unnecessary disruption and damage to streets and rights-of way the Council may designate, by resolution, certain streets to prohibit excavation within the right-of- way, from edge of pavement to edge of pavement, for a period determined to be appropriate but for no more than five (5) years.

5. Exception: Emergency excavations made pursuant to Section 5-10-1 E of this Code.

6. [521] Any person, utility, political subdivision, or other entity (“Entity”) permitted to perform any excavation pursuant to this Article shall be responsible for the maintenance of such excavation’s street repair and patches. Such responsibility shall include, but not be limited to, any sinking, fraying, unraveling, or deterioration of the repair or patch for a period of five years. The five-year maintenance period shall commence upon final inspection by the Town. Upon notification by the Town of the failure of such a repair or patch, the required

maintenance shall be repaired within a reasonable time limit as determined by the Town. Failure of the entity to complete the required repairs within the time allotted may result in the Town making the repair and billing said entity for all costs and expenses incurred while restoring the repair or patch; said entity agreeing to pay such loss or liability by virtue of its application for a right-of-way permit. Any applicant for a right-of-way-permit who has defaulted on the maintenance of a prior repair or patch shall not be issued a new right-of-way permit until the prior patch is restored or repaired, or the Town reimbursed for costs and expensed incurred to restore or repair the patch.

D. Assurances [132 452]

A permit must not be granted unless the Town has received and approved a form of financial assurance satisfactory to the Town which places the Town in a position to restore the right-of-way under the standards of Section 5-10-2. A permittee shall provide evidence of insurance satisfactory to the Town to protect against loss or damage arising out of or related to work performed, or failure to perform, under the permit. No work shall commence unless the requirements of this Article have been satisfied.

E. Special Procedures [132 438 524]

1. Compliance with the responsibilities contained within Section 5-10-1 A shall be required whenever excavation or construction is necessary in response to an emergency situation. The requirements set forth in Section 5-10-1 A shall become effective at the hour of 9:00 A.M. on the first business day after the emergency work is started. In addition, the Paradise Valley Police Department shall be notified immediately after it is determined that it will be necessary to perform emergency work in the right or way. Furthermore, the Paradise Valley Police Department shall be notified whenever any portion of the emergency work is to be performed outside the hours of sunrise to sunset.

2. Each person, political subdivision, or utility excavating or constructing under the terms of Section 5-10-1 A must use safety and traffic procedures by complying with the traffic control manual for highway construction and maintenance published by the Arizona Department of Transportation or other guideline established by the Town, and comply with all conditions, stipulations and requests for inspection, information, plans or other matters related to the application, the permit or work.

3. The permit may be suspended or revoked by the Town Engineer in accordance with procedures which afford due process and for any of the following related to the permitted work or property(ies) which may connect therewith:

    a. Noncompliance with this Article, the Town Code or applicable law, regulations, or instructions from the Town;

b. Noncompliance with the terms of the permit, conditions or stipulations, application, or representations by the permittee;

c. Construction, operation, use, condition or effect which may cause or constitute a detrimental impact on persons, property or the community, or adversely affect public safety, health or welfare, or the best interests of the Town.

4. A permittee may appeal the decision of the Town Engineer to the Town Council by filing a Notice of Appeal within ten (10) days of the date of the Engineer's decision. The decision of the Council is final.

F. Placement of Facilities 142 167 203 438 452 462

1. All utilities and facilities except cable television lines must be buried at least twenty-four inches below finished grade. Cable television lines must be buried at least eighteen inches below finished grade. Except as permitted by the Zoning Ordinance no new, different or additional above ground poles or facilities, and no taller poles or facilities, will be permitted in the rights of way. New poles used only to replace existing damaged, broken, or unsafe poles will be allowed. This paragraph shall apply to private and public rights of way.

2. 167 192 203 462 All utilities, except water and sewer, must be located between the back-of-curb and the nearest right-of-way line. However, utilities may be located in an adjoining public utility easement. Whenever the pavement in a right-of-way is improved, all utility poles shall be moved at least ten feet (10') away from the back-of-curb or pavement edge, to reduce the hazard; if the right-of-way line is less than ten feet (10') from the street, then the poles must be removed.

3. If extreme difficulty is encountered in complying with the terms of paragraph A or paragraph B, or both A and B, the Town Engineer may issue a waiver of either paragraph, or both paragraphs.

4. The Town Engineer shall establish standard zones for each utility in compliance with paragraphs A and B. All utility entities must conform to the provisions of this Section for new construction and whenever right-of-way improvements require relocation of utilities.

5. 438 452 No permit may be granted if the proposed work or property(ies) which may connect therewith are or would be in violation of the Town Code when connected or operated. No permit may be granted if any permit required by the Town Code or Zoning Ordinance for the proposed work or property(ies) connecting therewith have not been issued, unless such permit requirements have otherwise been waived or stipulated to by the Town Council or its designee.

G. Landscaping in the Public Rights-of-Way [448 462]

1. The purpose of this Section is to protect the public safety and welfare and to preserve and encourage landscaping native to the Sonoran desert in the right-of-way. "Right-of-way", for the purpose of this Section, means the area between the roadway surface and the adjoining property line. For the purpose of this Section, "landscaping" means any tree, shrub, plant or vegetation, or any combination thereof, and ground cover. For the purpose of this Section, “Town Engineer” means the Town Engineer or designee.

2. Planting, moving, removing or replacing any landscaping in the right-of-way is subject to approval by the Town Engineer upon such conditions as are deemed necessary and desirable and in accordance with Town Code and regulations. This requirement shall not apply to landscaping having a potential growth of less than two (2) feet in height, however such landscaping shall comply with all other applicable provisions of the Town Code.

3. The Town Engineer shall have general technical and supervisory control of the planting, setting out, location, placement, removal, trimming, maintenance and care of all landscaping in the rights-of-way.

4. The Town Engineer may grant to the holder of a right-of-way franchise, license or permit, upon written application and approval, continuing permit(s) to plant, move, remove, or replace landscaping, and maintenance thereof, in the rights-of-way without securing separate permits for each project, job or day. Such continuing permit shall be conditioned on such stipulations as may be determined by the Town Engineer, including but not limited to, advance notification to the Town Engineer and Police Department prior to performing the work, and continuing compliance with applicable Town Codes and regulations.

5. The property owner shall be responsible for maintenance and watering of any landscaping in the rights-of-way abutting the owner's property.

6. Any violation of this Section, and any landscaping which constitutes a hazard to life, health or safety in the determination of the Town Engineer, is a public nuisance. Such nuisance under the control of the abutting property or other person may be abated in accordance with Section 8-5-2 of this Code. However the Town Engineer may summarily abate or remove any hazard to life, health or safety.

Section 5-10-2 Uniform Standard Specifications and Details

A. Uniform Standard Specifications [32]

That certain document entitled "Uniform Standard Specifications for Public Works Constructions," sponsored and distributed by the Maricopa Association of Governments and all amendments and addendums thereto, is hereby adopted by the Town of Paradise Valley and made a part of this chapter the same as though said document were set forth in full herein; and at least three copies of said document shall be filed in the office of the Clerk and kept available for public use and inspection.

B. Uniform Standard Details [32 33]

That certain document entitled "Uniform Standard Details for Public Works Construction," sponsored and distributed by the Maricopa Association of Governments and all amendments and addendums thereto, is hereby adopted by the Town of Paradise Valley and made a part of this chapter the same as if said document were set forth in full herein; and at least three copies of said document shall be filed in the office of the Clerk and kept available for public use and inspection.

Section 5-10-3 Storm Drain Design [143 146]

That certain document, known as the Storm Drain Design Manual, Subdivision drainage design, Town of Paradise Valley, three copies of which are on file in the office of the Town Clerk of Paradise Valley, Arizona, which document was made a public record by Resolution No. 537 of the Town of Paradise Valley, is adopted as a part of this chapter as if fully set forth in this section.

Article 5-10-4 Blasting Operations [354 483]

A. Scope

This Ordinance applies to the possession, storage, and use of explosive materials used in conjunction with permitted blasting operations conducted within the Town of Paradise Valley.

B. Definitions

Approved as applied to a material device, or mode of construction, means approved by the Town Engineer.

1. "Attended" shall mean an unobstructed view of the on-site explosive material storage.

2. "Artificial Barricade" an artificial mound or revetted wall of earth of a minimum thickness of one (1) foot, or any other approved barricade that offers equivalent protection. [483]

3. "Certification of Fitness" shall mean the documentation and results of any examinations to prove the applicant has been found satisfactory to use or transport explosives.

4. "Explosive Materials" shall mean Class A, Class B, and Class C explosives, including detonators, detonating cord, and blasting agents, used in conjunction with blasting operations.

C. Blasting Contractor Requirements

Prior to applying for a permit to conduct blasting operations within the Town limits, the blasting contractor shall submit the following documentation to the Town Engineer.

1. A copy of a valid Federal Explosives User's Permit or Federal Explosives License.

2. A copy of the license issued by the State of Arizona Registrar of Contractors for the type of blasting operations proposed to be conducted by the contractor as follows:

    a. A. General Engineering. Construction in connection with fixed works requiring specialized engineering knowledge and skill, including streets and roads, power and utilities plants, dams and hydroelectric plants, sewage and waste disposal plants, bridges, tunnels, and over-passes. Also included are the scopes of work allowed by all other engineering classifications.

    b. A-3, Blasting. The use of explosive and explosive devices for the purposes of excavation, demolition, geological exploration, mining, or any related blasting. Included is any drilling, boring, or earthwork required for the placement of explosive charges, the erection of temporary shelters, artificial barricades and associated protective devices, equipment, and enclosures.

    c. AE. (As restricted by Registrar.)

    d. C-15, Blasting. Use of explosives for movement of earthen materials or for demolition (residential in accordance with State of Arizona Registrar of Contractor definition.)

D. Licensing

The applicant shall be a minimum of 21 years of age and shall require a minimum of two (2) years' experience in the conduct of blasting operations. Experience shall include the

understanding of blasting designs, drilling of holes, loading of holes, decking stemming, and wiring methods.

E. Certification of Fitness

Any person requesting to conduct blasting operations within the Town shall first present a current and valid Certificate of Fitness Card issued by the City of Phoenix.

F. Blasting Site Permit

A blasting site permit shall be applied for with the Town Engineer to conduct a blasting operation at a specific site. The permit shall be valid for a period not to exceed 90 calendar days, and shall be applied for a minimum of five (5) work days prior to the proposed blasting date. Permit fees for blasting site permits shall be in accordance with the Paradise Valley Fee Schedule.

G. Certificate of Insurance [483]

The applicant shall furnish the Town of Paradise Valley with a valid Certificate of Insurance on a standard insurance industry ACORD form, subject to approval by the Town Attorney as to form and limits of coverage. The Certificate shall be issued by an insurance company authorized to transact business in the State of Arizona, or be named on the listed Unauthorized Insurers maintained by the Arizona Department of Insurance. The following information shall be identified:

1. The contractor shall be named as the insured. If the insurance is provided by an individual, company, or partnership other than the contractor, the contractor shall be named as an additional insured.

2. The Town of Paradise Valley, a municipal corporation, shall be named as an additional insured and Certificate Holder.

3. General liability limits, including contractual liability, in the amount of $5,000,000 combined single limit.

Note: Greater amounts than that stated above, may be required in certain cases as deemed necessary by the Town Engineer or his authorized representative.

4. A description of the operations covered under the insurance, relating to the blasting operations and storage of explosive materials if applicable.

H. Hold Harmless

The contractor shall submit a Hold Harmless Agreement in favor of the Town for each blasting site location or permit applied for.

I. Documentation

The contractor shall submit to the Town Engineer an accurately scaled drawing (1" = 100 feet) of the proposed blasting area identifying:

1. Property lines.

2. Proposed blasting location.

3. Structures within a 300-foot radius of the proposed blasting site and the structure(s)' owner and street address, if applicable. Greater distances may be required in certain areas or under certain circumstances, as determined by the Town Engineer or his authorized representative.

    a. Location of all aboveground and underground utilities, i.e., natural gas piping and lines, electric lines, phone lines, water lines.

    b. At the time of application for a blasting site permit, the contractor shall submit proof that a pre-blast survey has been conducted of any and all structures within a 300-foot radius of the proposed blasting area. Pre-blast surveys of the structures located at distances greater than a 300 foot radius may be required in certain areas or under certain circumstances, as determined by the Town Engineer or his authorized representative.

    c. The blasting contractor or his authorized representative shall document whether there are structures within a 300 foot radius of the blasting area, in what form the pre-blast survey was conducted, and where a copy of the preblast survey can be located.

    d. The contractor shall make a minimum of four (4) attempts to contact the owner/occupant of a structure in the pre-blast survey area. At least two (2) of the contacts shall be made during the day and two (2) of the contacts shall be made between 6 p.m. and 9 p.m. If unsuccessful, a notarized statement detailing the address, dates, times, and the name of the person making the contacts shall be submitted to the Town Engineer as part of the permit application package.

    e. The pre-blast survey shall identify all existing damage, including cracks in walls, floors, and ceiling, cracks in and around windows, loose brick, and other defects found inside of and outside of buildings.

    f. In addition to the information specified above, the applicant may be required to furnish, at his own expense, such additional information as may be required to evaluate the permit application. This may include, but is not limited to, the submission of a report prepared by a geological or geophysical engineer registered in the State of Arizona if the proposed blasting is to occur in a geologically sensitive area.

g. Failure to provide the required information at the time of permit application may cause the application to be returned to the contractor for resubmittal.

J. Blasting Site Permit Renewal

The contractor shall apply for blasting site permit renewal a minimum of two (2) work days prior to current permit expiration, and shall follow the requirements specified under "Blasting Site Permit," above. Permit fees for blasting permit renewal shall be in accordance with the Paradise Valley Fee Schedule.

K. Conducting Blasting Operations [483]

1. Any and all utility companies servicing the blasting area shall be advised of the blasting operation a minimum of 24 hours prior to conducting the blasting operation.

2. Prior to conducting any blasting operations, the contractor shall request that the blasting area be blue-staked when buildings or structures are located within a 300-foot radius of the proposed blast site.

3. Blasting operations shall be conducted on weekdays, between the hours of 8:00 a.m. and 5:00 p.m. No blasting operations shall be conducted at any time on Saturday, Sunday, or legal holidays, except by special written permission of the Town Engineer or his authorized representative. The special written permission shall be obtained by the contractor a minimum of two (2) working days prior to the proposed blasting date.

4. Explosive materials shall not be loaded into the ground until a valid blasting operations permit, issued by the Town Engineer is on site. This does not, however, prohibit the drilling of holes.

5. The contractor shall provide and install signs reading "BLASTING ZONE 1000 FEET" and "TURN OFF 2-WAY RADIOS AND CELLULAR TELEPHONES" on all roads within 1,000 feet of blasting operations. [483]

6. The Certificate of Fitness Cardholder shall be in attendance at the blast area when the explosive material are loaded into the ground and shall remain in attendance until the blasting operation is completed.

7. Type II magazines, as defined by Article 77 Section 203 of the Uniform Fire Code, shall be used for transporting explosive materials, except blasting agents, from storage magazines to the blasting area. [483]

8. The blasting contractor may be required to provide written notification to the owner/occupant of each building or structure within a 300-foot radius of the blast

site. The notification shall be required a minimum of 24 hours prior to a blasting operation.

9. Seismic and/or air blast monitoring shall be conducted when buildings are located within a 300-foot radius of the blasting site. Prior to blasting, contractor personnel monitoring seismic and/or air blasts, shall be submit a letter to the Town Engineer or his authorized representative documenting the individuals who have received formal training on the equipment proposed to be used, the company name who provided the training, and the specific machine and model number the personnel where trained on.

10. An accurate blasting log shall be maintained by the individual holding the Certificate of Fitness to conduct blasting operations. The log shall contain the Town Engineer permit number, the location of the blasting operation, date and time of each blasting occurrence, the seismic and/or air blast readings received, if applicable, and the name of the individual who conducted the monitoring, if applicable, and any other pertinent information required by the Town Engineer.

11. A current copy of the blasting log shall be available at the blast site, and at the contractor's office. A copy of the blasting log shall be submitted to the Town Engineer within seven (7) calendar days after the expiration of the blasting permit or when requested by the Town Engineer or his authorized representative.

12. Failure to submit the blasting log within the required time frame may cause the Town Engineer or his authorized representative to discontinue permit issuance.

13. Explosives materials shall not be left lying around or in unlocked magazines where they may be accessible to children or unauthorized persons.

14. Empty containers which held explosive materials shall be removed from the site at the end of each work day and disposed of properly. Empty containers shall not be reused.

15. No explosive materials shall be left in the ground overnight.

16. After a blast, all wires shall be carefully traced and a search made for any unexploded explosive materials.

17. After waiting one (1) hour, all misfires shall be investigated by the Certificate of Fitness Cardholder who shall determine the safe method of disposal.

18. Blasting wires and any items or devices marked EXPLOSIVE or BLASTING CAP shall be removed from the site at the end of each blasting day and disposed of according to the manufacturers recommendations.

19. The mixing of blasting agent components is not permitted.

20. No person under the influence of intoxicants, narcotics, or controlled substances shall handle or use explosive materials in any manner.

21. Prior to the disposal of any explosive material, the manufacturer of the product shall be consulted for most current product information and the recommended method of disposal and/or destruction.

22. No explosive material shall be disposed of within the Paradise Valley Town limits.

L. One-Day Supply of Explosive Materials On-Site [483]

1. One-day supply of explosive materials shall be the quantity required to conduct one (1) day blasting operations only.

2. No explosive materials shall be stored overnight and not more than a one-day supply shall be brought into the Town at anytime. [483]

3. A one-day supply of explosive material shall be transported to the blasting site in Type II magazine(s) as defined by Article 77 Section 203 of the Uniform Fire Code.[483]

4. Detonators shall not be stored with high explosives.

5. Explosive material storage shall be located a minimum of a 300-foot radius from the blasting site.

6. At no time shall the explosive be left unattended.

Section 5-10-5 Grading And Dust Control Regulations [360 454 552 577 594]

A. Purpose

The Town Council has adopted a General Plan which encourages preservation of natural features. The Town Council also desires to reduce air pollution by limiting fugitive dust, and further seeks to minimize the possible impact of property flooding due to storm water drainage.

These goals have in common that they are all furthered by maintaining the surface of the earth in an undisturbed natural state. Disturbance of the earth's surface should occur only when necessary, and should be done in a manner which reflects an understanding of the unique local environment.

B. Grading Permits Required for Land Disturbance [454 552]

1. For the purpose of this Article, the following terms shall have the meanings respectively ascribed to them in this Section:

    a. Grading means any excavating or filling or otherwise changing the gradient of land.
    b. Excavating means the removal of earthen material resulting in a lowering of the grade at that location.
    c. Filling means dumping or depositing earthen material resulting in raising of the grade at that location.
    d. Earthen material means any rock, natural soil or any combination thereof.
    e. Land disturbance or disturb the land or similar words means clearing, grading, grubbing, scraping, excavating, filling, uncovering, destabilizing, moving or otherwise modifying the earth's surface.
    f. Vacant lot shall mean developed land upon which no person or persons reside or use for the purpose for which the land was developed.

2. No land disturbance may occur on any lot or parcel in the Town without a grading permit being first obtained from the Town Engineer, and, if necessary, a hauling permit and payment of the hauling permit fees, as prescribed in the “Town of Paradise Valley Fee Schedule,” except as otherwise provided herein. No grading permit may be issued without the following submittals, each in a form approved by the Town Engineer:

    a. A grading plan prepared by a Civil Engineer.

        a) Where excavation is to occur the top four (4) inches of excavated native soil shall remain on the site and shall be reused in a manner that takes advantage of the natural soil seed bank it contains.

        b) The grading plan shall contain the preparing engineer’s certification of the 100 year water surface elevation and finished floor elevation.

        c) The building pad shall not exceed two (2) feet in height except where required to protect the building against flooding, in which case the pad shall be one (1) foot above the water surface elevation of the 100 year event.

        d) A stabilization plan describing how areas potentially prone to erosion will be protected.

        e) A drainage plan showing washes in an undisturbed state except for modifications approved by the Town Engineer that are required to accommodate storm water. Washes shall not be realigned except as approved by the Town Engineer and Planning Director when necessary to accommodate storm water or to restore a disturbed wash to a more natural state.

b. Dust control plan meeting the requirements of Rule 310 of the Maricopa County Air Pollution Control Regulations, as amended.

c. A native plant inventory, native plant salvage plan, and revegetation plan using plants from the Town's approved plant palette.

d. A fencing plan showing the location and means of temporary fencing that separates the construction area from the portions of the site which will not be disturbed.

e. Such other information as may be required by the Town Engineer.

3. The following activities are exempt from the requirements of a grading permit:

a. Percolation or test borings or similar soil tests (100 square feet maximum in size) prior to issuance of a building or grading permit;

b. Landscaping alterations or improvements made by a person in residence on the affected premises, provided that there will be no land disturbance which affects any storm water drainageway or storm water storage area.

C. Dust Control

Prior to the issuance of grading, building, or demolition permits or recording of a final subdivision plat or lot split, the owner or contractor causing or performing any grading, landscaping, building or demolition must furnish a written plan specifying the method or means of controlling dust. For the purpose of this Section, dust means all fugitive particulate matter as defined by applicable Maricopa County Fugitive Dust Regulations.

If, after grading, a person causes or allows any vacant lot or parcel to remain unused, vacant, or undeveloped for more than fifteen (15) days the person shall first implement reasonably available control measures to effectively prevent or minimize fugitive dust.

D. Parking Sites

All unpaved areas used to park vehicles or construction equipment must be paved, vegetated, or chemically stabilized to prevent fugitive particulate matter.

E. Enforcement, Revegetation/Stabilization Plan [577 594]

Any person who has disturbed land and not complied with this Article is required to submit a Stabilization/Revegetation Plan for approval to the Town within fifteen (15) days of receipt or service of a Notice of Violation or citation under this Section. All permits for the development of the property are suspended until the revegetation has been completed and approved. The Stabilization/Revegetation Plan is in addition to the Native Plant Preservation Plan required in Section 5-8-4.

Section 5-10-6 Drilling Permits, Restrictions And Penalties

A. Drilling Permits Required; Restrictions and Revocation

1. Permits required. Unless otherwise provided by this Code or applicable law, it is unlawful for any person, political subdivision, or utility, without first having obtained a permit from the Town Engineer, to drill on, under or into the surface of the earth on any private property, streets or roads. Each permit shall be limited to a specific site and duration. Drilling shall mean to make or cause to make a circular hole in the ground where the depth exceeds fifteen feet with a diameter of forty (40) inches or less.

2. Restrictions on Drilling Operations

   a. Hours of drilling shall be limited to 7:00 a.m. to 6:00 p.m. Monday through Friday, and shall be prohibited on all legal holidays recognized by the Town, except by special written permission of the Town Engineer or his authorized representative. The special written permission shall be obtained by the contractor a minimum of two (2) working days prior to the proposed blasting date.

   b. All gasoline or diesel powered motors shall be properly muffled and use sound screening to deflect noise. Nothing in this section shall be construed as a waiver of Article 10-7 of the Paradise Valley Municipal Code.

   c. Prior to the issuance of the permit a written plan specifying the method or means of controlling dust shall be submitted pursuant to Section 5-10-5 C of this code.

   d. Written notification shall be provided to all immediate property owners a minimum of forty eight (48) hours before drilling begins.

3. Revocation of Permit. The Town Engineer or his designee shall have the authority to revoke a permit, via a Cease and Desist order, upon violation of the terms of the permit or other Town of Paradise Valley Code provisions by the permittee or by persons under the control of the permittee. Issuance of a Cease and Desist Order does not limit the Town's ability to issue penalties pursuant to Section 5-10-6 B.

B. Penalty

Any person who shall violate any of the provisions of this Ordinance shall be guilty of a Class 1 Misdemeanor and upon conviction thereof shall be punished by a fine not to exceed two thousand five hundred dollars ($2,500.00) or by imprisonment for a period not to exceed six months or by both fine and imprisonment. Each day that a violation continues shall be a separate offense punishable as described. In the alternative to the

criminal penalty, civil prosecution may proceed pursuant to this Article by citation for civil sanction(s). The procedure for civil actions shall be as outlined in Section 8-6-5 of this Code.

Section 5-10-7 Dedication of Public Right-of-Way; Drainage Easements, and other Requirements[571]

A. General

No permit shall be issued, no structure shall be erected or enlarged, and no certificates of occupancy shall be issued for buildings or structures not completed as of the effective date of this section, if the property upon which such permit is to be issued or the structure is to be erected, enlarged or occupied abuts on a public right-of-way, or contains a watercourse as herein defined, unless and until the following requirements are met and in compliance with applicable law:

B. Dedication of Right-of-Way.

One-half of the public right-of-way located adjacent to such property shall be dedicated as a public right-of-way in conformance with the Town General Plan, as it may be amended from time to time. If such dedication would render the subject property in violation of Town zoning laws, the Town may, in lieu of dedication, accept an easement for public right-of-way over the same amount of land as would be required by dedication. For the purpose of this paragraph, "permit" includes:

1. A Special Use Permit or Major Amendment to a Special Use Permit as designated in Section 1101 et seq. of the Zoning Ordinance;

2. A subdivision, lot split, or other land division subject to Chapter 6, Sections 6-1-1 et seq. of the Town Code on Subdivisions.

3. A building permit for any new residence or reconstruction or alteration to an existing residence, the cost of which construction, reconstruction, or alteration exceeds $500,000. Cost shall be computed on the basis of accumulated costs during any 730 consecutive day period.

C. Drainage Easements.[513 601]

1. For the purposes of this section, "watercourse" means any creek, stream, wash, arroyo, channel or other body of water having historical banks and a bed at least two (2) feet deep and five (5) feet wide through which waters flow on a recurrent basis.

2. Whenever any watercourse is located in an area being developed, provision shall be made for an adequate drainage easement along the main channel and each side of

the watercourse for the purpose of widening, deepening, relocating, improving, or protecting the watercourse for drainage purposes. The drainage easement is for the purposes stated above, but the maintenance responsibility for the watercourse, as required by Town Code, shall remain the responsibility of the property owner.

3. In addition to the drainage easement requirement, drainage easement maintenance agreements shall be required for any watercourse located on the property. Said agreements shall:

   a. Be in a form acceptable to the Town Engineer,
   b. Grant easement rights and a right of entry in, over, and across the drainage easement area,
   c. Specify that the maintenance responsibility for the drainage easement area remains private, and
   d. Be recorded in the Maricopa County Recorder's office.

4. The property owner shall clean, repair and maintain the watercourse within the drainage easement area in a safe, clean, and properly operating condition and in compliance with all applicable town codes.

D. Other Requirements.

Approval of a Special Use Permit or Major Amendment to a Special Use Permit as designated in Section 1101 et seq. of the Town's Zoning Ordinance, or a subdivision, lot split or other land division subject to Chapter 6, Sections 6-1-1 et seq. of the Town Code on Subdivisions, shall also require the following, and maintenance thereof, unless otherwise specified and subject to rules and regulations of the Town:[448]

1. Landscaping. The right-of-way between the roadway surface and the abutting property line shall be preserved with existing native vegetation as follows, or landscaped with an average of the following every one hundred (100) linear feet unless otherwise approved by the Town where there is existing right-of-way landscaping or where other special circumstances occur:[448]

   a. A minimum of four (4) fifteen gallon trees native to the Sonoran Desert; and[448]
   b. A minimum of five (5) one-gallon shrubs native to the Sonoran Desert.

2. Recreation Path. A minimum six-foot wide meandering recreation path shall be constructed, and right-of-way granted therefore as may be necessary, abutting the entire property in accordance with the Town's General Plan and the determination of the Town Engineer.[448]

Section 5-10-8 Required Improvements[183 380 571]

A. Definitions. As used in this Section.

"Development" includes construction of any new residences or reconstructions or alterations to existing residences, the cost of which construction, reconstruction or alteration exceeds $500,000. Cost shall be computed on the basis of accumulated costs during any 730 consecutive day period.

B. Drainage

1. No development shall be permitted to occur within the Town which causes an increased flow of surface water discharged from the subject site. On-site storm water retention areas shall be adequate to contain the volume of water required by the Town's Storm Drain Design Manual, current edition. The tributary area used in the computation shall be the area of the site.

2. Exception: The requirements for on-site retention may be waived or modified by the Town Engineer if he determines that said retention is impractical because of, but not limited to, steep terrain, poor percolation, or incompatibility with existing or surrounding improvements. The Town Engineer may require of the developer or owner additional drainage studies or reports in such cases to determine if a critical drainage problem will be created on adjacent or downstream properties.

3. If the Town Engineer decides after review of the studies or reports in paragraph B that construction of drainage facilities would best be made off-site, he may require the developer to furnish the Town financial assurance in an amount and form satisfactory to the Town to accomplish the construction of drainage facilities.

C. Sewers[459 478]

1. No development of property shall take place unless or until the developer or owner constructs either before, or simultaneously with development, sanitary sewer lines and a connection to private wastewater treatment or Town sanitary sewer in accordance with Town and Maricopa County Health Department standards. At the discretion of the Town Manager, the Town may accept cash or other guarantee in lieu of construction at the time of development.

2. The requirement of paragraph A of this Section may be waived, in whole or in part, if, prior to commencing development, the owner demonstrates to the Town Manager one or more of the following:

   a. All sewers required under paragraph A have been completed.

b. All sewers required under Paragraph A are within a sewer improvement district over which the Town has passed a resolution of intention pursuant to A.R.S. Title 48, Chapter 4.

c. The cost of complying with paragraph A would be more than ten percent (10%) of the cost of development.

3. The Town Manager may consider the extent of the Town's participation as a factor in his decision.

D. Fire Hydrants

1. No development of property shall take place unless or until the developer or owner constructs a fire hydrant in accordance with Town and Fire Department standards.

2. The requirement of paragraph A of this Section may be waived, in whole or in part, if, prior to commencing development, the owner demonstrates to the Town Manager one or more of the following:

a. All fire hydrants required under paragraph A have been completed.

b. All fire hydrants required under Paragraph A are within a fire hydrant improvement district over which the Town has passed a resolution of intention pursuant to A.R.S. 48, Chapter 4.

c. The cost of complying with paragraph A would be more than ten percent (10%) of the cost of development.

3. The Town Manager may consider the extent of the Town's participation as a factor in his decision.

E. Electrical and Electronic Services[571]

No development shall take place unless or until the developer or owner undergrounds all electrical and electronic wires and cables from the property line to the electrical service panel. Remodels and building additions shall be required to remove all overhead utility services and place them underground from the property line to the electrical service panel as directed by the building official.

F. Street Improvements[571]

No of development shall take place unless or until the developer or owner constructs street improvements, necessary for safe vehicular and pedestrian travel (not to exceed the requirements of the general plan). Such improvements may be required as a condition of a building permit.

ARTICLE 5-11 FLOODPLAIN ADMINISTRATION [569]

5-11-1	Definitions [601]
5-11-2	Lands to Which this Ordinance Applies
5-11-3	Basis for Establishing the Areas of Special Flood Hazard
5-11-4	Compliance
5-11-5	Abrogation and Greater Restrictions
5-11-6	Interpretation
5-11-7	Disclaimer of Liability
5-11-8	Statutory Exemptions
5-11-9	Authorized Construction Plans
5-11-10	Additional Penalties
5-11-11	Unlawful Acts
5-11-12	Declaration of Public Nuisance
5-11-13	Abatement of Violations
5-11-14	Severability
5-11-15	Establishment of Flood Plain Development Permit
5-11-16	Designation of Floodplain Administrator
5-11-17	Duties and Responsibilities of the Floodplain Administrator
5-11-18	Standards of Construction
5-11-19	Standards for Storage of Materials and Equipment
5-11-20	Standards for Utilities
5-11-21	Additional Standards for Development, Including Subdivisions
5-11-22	Standards for Manufactured Homes
5-11-23	Standards for Recreational Vehicles
5-11-24	Floodways
5-11-25	Nature of Variances
5-11-26	Appeal Board
5-11-27	Conditions for Variances

5-11-1 Definitions [601]

Unless specifically defined below, words or phrases used in this ordinance shall apply only to the flood plain regulations and be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

ADWR. Arizona Department of Water Resources.

Appeal. A request for a review of the Floodplain Administrator's interpretation of any provision of this ordinance or a request for a variance.

Area of Shallow Flooding. A designated AO or AH Zone on a community's Flood Insurance Rate Map (FIRM) with a one percent or greater annual chance of flooding to an average depth of one to three feet where a clearly defined channel does not exist, where the

path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Area of Special Flood Hazard. The land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. These areas are designated as Zone A, AE, AO, AH and A1-30 on the Flood Insurance Rate Map and other areas determined by the criteria adopted by the director of ADWR. *(See" Special Flood Hazard Area")*

Base Flood. The flood having a one percent chance of being equaled or exceeded in any given year.

Basement. Any story having more than one-half (1/2) its height below natural grade.

Building. See "Structure".

Community. Any state, area or political subdivision thereof, or any Indian tribe or authorized tribal organization, or authorized native organization, which has authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction.

Development. Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of materials or equipment.

Encroachment. The advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

Erosion. The process of the gradual wearing away of landmasses. This peril is not, per se, covered under the Program.

FEMA. Federal Emergency Management Agency.

FHBM. Flood Hazard Boundary Map.

Flood or Flooding. A general and temporary condition of partial or complete inundation of normally dry land areas from: (1) the overflow of flood waters; (2) the unusual and rapid accumulation or runoff of surface waters from any source; and/or (3) the collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in this definition.

Flood Boundary and Floodway Map (FBFM). The official map on which FEMA or the Federal Insurance Administration (FIA) has delineated the areas of special flood hazards and the floodway.

Flood Insurance Rate Map (FIRM). The official map on which FEMA has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

Flood Insurance Study (FIS). The official report provided by FEMA that include flood profiles, FIRM, FBFM and the water surface elevation of the base flood.

Floodplain or Flood-Prone Area. Any land area susceptible to being inundated by water from any source. *(See Flood or Flooding)*

Floodplain Administrator. The Town Manager or his designee appointed to administer and enforce the floodplain management regulations.

Floodplain Board. Pursuant to A.R.S. 48-3610, the Town Council of the Town of Paradise Valley is the Floodplain Board at such times as they are engaged in the enforcement of the ordinance.

Floodplain Management. The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

Flood-proofing. Any combination of structural and non-structural additions, changes or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

Flood-Related Erosion. The collapse or subsidence of land along the shore of a lake or other body of water as a result of undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding.

Floodway. The area of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Also referred to as “Regulatory Floodway.”

Floodway Fringe. That area of the floodplain on either side of the “Regulatory Floodway” where encroachment may be permitted.

Governing Body. The local governing unit (i.e., county or municipality), which is empowered to adopt and implement regulations to provide for the public health, safety and general welfare of its citizenry.

Hardship. Related to Sections 5-6-25 et seq., *"Variances"*, of this ordinance means the exceptional hardship, which would result from a failure to grant the requested variance. The governing body requires that the variance be exceptional, unusual and peculiar to the property involved. Mere economic or financial hardship alone is not exceptional. Inconvenience, aesthetic considerations, physical handicaps, personal preferences or the disapproval of one's neighbors, as a rule cannot qualify as an exceptional hardship. All of these problems can be resolved through other means without granting a variance, even if the alternative is more expensive, or requires the property owner to build elsewhere or put the parcel to a different use than originally intended.

Highest Adjacent Grade. The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic Structure. Any structure that is:

A. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior (Secretary) as meeting the requirements for individual listing on the National Register;

B. Certified or preliminarily determined by the Secretary as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

C. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary; or

D. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:

1. by an approved state program as determined by the Secretary; or

2. directly by the Secretary in states without approved programs.

Levee. A man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control or divert the flow of water so as to provide protection from temporary flooding.

Lowest Floor. The lowest floor of the lowest enclosed area, including basement *(see "Basement" definition)*. An unfinished or flood resistant enclosure, usable solely for

parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

Manufactured Home. A structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term "Manufactured Home" does not include a "recreational vehicle."

Mean Sea Level. For purposes of the NFIP, the National Geodetic Vertical Datum (NGVD) of 1929 or North American Vertical Datum (NAVD) of 1988, to which base flood elevations are shown on a community's FIRM are referenced.

NFIP. National Flood Insurance Program.

New Construction. For the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, “new construction” means structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

Obstruction. Includes, but is not limited to, any dam, wall, wharf, embankment, levee, dike, pile, abutment, protection, excavation, channelization, bridge, conduit, culvert, building, wire, fence, rock, gravel, refuse, fill, structure, vegetation or other material in, along, across or projecting into any watercourse which may alter, impede, retard or change the direction and/or velocity of the flow of water, or due to its location, its propensity to snare or collect debris carried by the flow of water or its likelihood of being carried downstream.

One-Hundred Year Flood. The flood having a one percent chance of being equaled or exceeded in any given year. *(See “Base Flood” definition)*

Person. An individual or the individual’s agent, a firm, partnership, association or corporation, or an agent of the aforementioned groups, or this state or its agencies or political subdivisions.

Ponding. Storm runoff that collects in depressions and cannot runoff, creating a pond effect. Ponding floodwaters do not move or flow away and may remain in the temporary ponds until they infiltrate into the soil, evaporate or are pumped out.

Recreational Vehicle. A vehicle that is:

A. Built on a singe chassis;

B. 400 square fee or less when measured at the largest horizontal projection;

C. Designed to be self-propelled or permanently towable by a light duty truck; and

D. Designed primarily as temporary living quarters for recreational, camping, travel or seasonal use and not for use as a permanent dwelling.

Regulatory Flood Elevation. An elevation one foot above the base flood elevation for a watercourse for which the base flood elevation has been determined and shall be determined by the criteria developed by the director of water resources for all other watercourses.

Regulatory Floodway. The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

Sheet Flow Area. Floodwater occurring from intense or prolonged storm in which water flows spread out over a large area at a somewhat uniform depth *(See "Area of Shallow Flooding")*

Special Flood Hazard Area. An area having special flood or flood-related erosion hazards and shown on a FHBM or "FIRM" as Zone A, AO, A1-30, AE, A99 or AH.

Start of Construction. Includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns or any work beyond the stage of excavation, or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling, nor does it include the installation of streets and/or walkways, nor does it include excavation for a basement, footings, piers or foundations or the erection of temporary forms, nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure. A walled and roofed building, including a gas or liquid storage tank, which is principally above ground, as well as a manufactured home.

Substantial Damage. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 % of the market value of the structure before the damage occurred.

Substantial Improvement. Any reconstruction, rehabilitation, addition or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred “substantial damage,” regardless of the actual repair work performed. The term does not, however, include either:

A. Any project for improvement of a structure to correct existing violations of state or local health, sanitary or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or,

B. Any alteration of a "historic structure,” provided that the alteration would not preclude the structure's continued designation as a "historic structure".

Variance. A grant of relief from the requirements of this ordinance that permits construction in a manner that would otherwise be prohibited by this ordinance.

Violation. The failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications or other evidence of compliance required in this ordinance is presumed to be in violation until such time as that documentation is provided.

Water Surface Elevation. The height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929 or North American Vertical Datum (NAVD) of 1988 of floods of various magnitudes and frequencies in the floodplains of riverine areas.

Watercourse. A lake, river, creek, stream, wash, arroyo, channel or other topographic feature on or over which waters flow on a recurrent basis. Watercourse includes specifically designated areas in which substantial flood damage may occur.

5-11-2 Lands to Which this Ordinance Applies

This ordinance shall apply to all areas of special flood hazards within the corporate limits of the Town of Paradise Valley.

5-11-3 Basis for Establishing the Areas of Special Flood Hazard

The areas of special flood hazard identified by FEMA in a scientific and engineering report entitled “The Flood Insurance Study for Maricopa County dated June 3, 1986” with accompanying “FIRMs” dated April 15, 1988 and all subsequent amendments and/or revisions, are hereby adopted by reference and declared to be a part of this ordinance. This “FIS” and attendant mapping is the minimum area of applicability of this ordinance and may be supplemented by studies for other areas which allow implementation of this

ordinance and which are recommended to the Floodplain Board by the Floodplain Administrator administrator. The Floodplain Board, within its area of jurisdiction, shall delineate (or may, by rule, require developers of land to delineate) for areas where development is ongoing or imminent, and thereafter as development becomes imminent, floodplains consistent with the criteria developed by FEMA and the Director of Water Resources. The "FIS" and "FIRM" panels are on file with the Paradise Valley Town Clerk.

5-11-4 Compliance

All development of land, construction of residential, commercial or industrial structures, or future development within delineated floodplain areas is subject to the terms of this ordinance and other applicable regulations.

5-11-5 Abrogation and Greater Restrictions

This ordinance is not intended to repeal, abrogate or impair any existing easements, covenants or deed restrictions. However, where this ordinance and another ordinance, easement, covenant or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

5-11-6 Interpretation

In the interpretation and application of this ordinance, all provisions shall be:

A. Considered as minimum requirements;
B. Liberally construed in favor of the governing body; and
C. Deemed neither to limit nor repeal any other powers granted under state statutes.

5-11-7 Disclaimer of Liability

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of the Town of Paradise Valley, any officer or employee thereof, the State of Arizona or FEMA, for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

5-11-8 Statutory Exemptions

In accordance with (A.R.S. § 48-3609(H)), unless expressly provided, this and any regulation adopted pursuant to this article, do not affect:

A. Existing legal uses of property or the right to continuation of such legal use. However, if a nonconforming use of land or a building or structure is discontinued for twelve

months, or destroyed to the extent of 50 percent of its value as determined by a competent appraiser, any further use shall comply with this article and regulations of the Town.

B. Reasonable repair or alteration of property for the purposes for which the property was legally used on August 3, 1984, or any regulations affecting such property takes effect, except that any alteration, addition or repair to a nonconforming building or structure which would result in increasing its flood damage potential by 50 percent or more shall be either flood-proofed or elevated to or above the regulatory flood elevation;

C. Reasonable repair of structures constructed with the written authorization required by A.R.S. § 48-3613; and

D. Facilities constructed or installed pursuant to a Certificate of Environmental Compatibility issued pursuant to A.R.S. Title 40, Chapter 2, Article 6.2.

5-11-9 Authorized Construction Plans

Before any authorized construction begins for the exceptions listed below, the responsible person must submit construction plans to the Floodplain Board for review and comment. In accordance with A.R.S. § 48-3613, written authorization shall not be required, nor shall the Floodplain Board prohibit:

A. The construction of bridges, culverts, dikes and other structures necessary to the construction of public highways, roads and streets intersecting or crossing a watercourse;

B. The construction of storage dams for watering livestock or wildlife, structures on banks of a watercourse to prevent erosion of or damage to adjoining land if the structure will not divert, retard or obstruct the natural channel of the watercourse or dams for the conservation of floodwaters as permitted by A.R.S. Title 45, Chapter 6;

C. Construction of tailing dams and waste disposal areas for use in connection with mining and metallurgical operations. This paragraph does not exempt those sand and gravel operations that will divert, retard or obstruct the flow of waters in any watercourse from complying with and acquiring authorization from the Floodplain Board pursuant to regulations adopted by the Floodplain Board under this article;

D. Other construction upon determination by the Floodplain Board that written authorization is unnecessary;

E. Any flood control district, county, city, town or other political subdivision from exercising powers granted to it under A.R.S. Title 48, Chapter 21, Article 1;

F. The construction of streams, waterways, lakes and other auxiliary facilities in conjunction with development of public parks and recreation facilities by a public agency or political subdivision; and

G. The construction and erection of poles, towers, foundations, support structures, guy wires and other facilities related to power transmission as constructed by any utility whether a public service corporation or a political subdivision.

5-11-10 Additional Penalties

In addition to other penalties or remedies otherwise provided by law, this state, a political subdivision or a person who may be damaged or has been damaged as a result of the unauthorized diversion, retardation or obstruction of a watercourse has the right to commence, maintain and prosecute any appropriate action or pursue any remedy to enjoin, abate or otherwise prevent any person from violating or continuing to violate this Section or regulations adopted pursuant to this Article. If a person is found to be in violation of this Section, the court shall require the violator to either comply with this Section if authorized by the Floodplain Board or remove the obstruction and restore the watercourse to its original state. The court may also award such monetary damages as are appropriate to the injured parties resulting from the violation including reasonable costs and attorney fees.

5-11-11 Unlawful Acts

A. It is unlawful for a person to engage in any development or to divert, retard or obstruct the flow of waters in any watercourse if it creates a hazard to life or property without securing the written authorization of the Floodplain Board. Where the watercourse is a delineated floodplain, no development shall take place in the floodplain without written authorization of the Floodplain Board.

B. Any person found guilty of violating any provision of this ordinance shall be guilty of a misdemeanor and punishable pursuant to Article 1-9 of the Paradise Valley Town Code.

5-11-12 Declaration of Public Nuisance

All development located or maintained within any area of special flood hazard after August 8, 1973, in violation of this ordinance is a public nuisance per se and may be abated, prevented or restrained by action of this political subdivision.

5-11-13 Abatement of Violations

Within 30 days of discovery of a violation of this ordinance, the Floodplain Administrator shall submit a report to the Floodplain Board, which shall include all information available to the Floodplain Administrator that is pertinent to said violation. Within 30 days of receipt of this report, the Floodplain Board shall either:

A. Take any necessary action to effect the abatement of such violation; or

B. Issue a variance to this ordinance in accordance with the provisions of Sections 5-11-25 et seq., Variances, herein; or

C. Order the owner of the property upon which the violation exists to provide whatever additional information may be required for their determination. Such information must be provided to the Floodplain Administrator within 30 days of such order and the Floodplain Administrator shall submit an amended report to the Floodplain Board within 20 days. At the next regularly scheduled public meeting, the Floodplain Board shall either order the abatement of said violation or they shall grant a variance in accordance with the provisions of Sections 5-11-25 et seq. Variances, herein; or

D. Submit to FEMA a declaration for denial of insurance, stating that the property is in violation of a cited state or local law, regulation or ordinance, pursuant to Section 1316 of the National Flood Insurance Act of 1968 as amended.

5-11-14 Severability

This ordinance and the various parts thereof are hereby declared to be severable. Should any Section of this ordinance be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole, or any portion thereof other than the Section so declared to be unconstitutional or invalid.

5-11-15 Establishment of Flood Plain Development Permit

A permit shall be obtained before construction or development begins, including placement of manufactured homes, within any area of special flood hazard established in Section 5-11-3. Application for a permit shall be made on forms furnished by the Floodplain Administrator and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions and elevation of the area in question, existing or proposed structures, fill, storage of materials, drainage facilities and the location of the foregoing. Specifically, the following information is required:

A. Proposed elevation in relation to mean sea level of the lowest floor (including basement) of all structures. In Zone AO, elevation of existing highest adjacent natural grade and proposed elevation of lowest floor of all structures;

B. Proposed elevation in relation to mean sea level to which any nonresidential structure will be flood-proofed;

C. Certification by a registered professional engineer or architect that the flood-proofing methods for any nonresidential structure meet the floodproofing criteria in Section 5-11-18(D);

D. Require base flood elevation data for subdivision proposals or other development greater than 50 lots or 5 acres; and

E. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

5-11-16 Designation of the Floodplain Administrator

The Town Manager or his designee is hereby appointed to administer, implement and enforce this ordinance by granting or denying development permits in accordance with its provisions.

5-11-17 Duties and Responsibilities of the Floodplain Administrator

Duties of the Floodplain Administrator shall include, but not be limited to:

A. Review all development permits to determine that:

1. The permit requirements of this ordinance have been satisfied;

2. All other required state and federal permits have been obtained;

3. The site is reasonably safe from flooding;

4. The proposed development does not adversely affect the carrying capacity of areas where base flood elevations have been determined but a floodway has not been designated. For purposes of this ordinance, "adversely affects" means that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will increase the water surface elevation of the base flood more than one foot at any point.

B. Use of Other Base Flood Data. When base flood elevation data has not been provided in accordance with Section 5-11-3, the Floodplain Administrator shall obtain, review and reasonably utilize any base flood elevation data available from a federal, state or other source, in order to administer Section 5-11-18. Any such information shall be consistent with the requirements of FEMA and the director of water resources and shall be submitted to the Floodplain Board for adoption.

C. Obtain and maintain for public inspection and make available the following:

1. The certified regulatory flood elevation required in Section 5-11-18(C)(1);

2. The Zone AO certification required in Section 5-11-18(C)(1)(a) ;

3. The flood-proofing certification required in Section 5-11-18(D);

4. The certified opening elevation required in Section 5-11-18(E).

D. Whenever a watercourse is to be altered or relocated the Flood Plain Administer shall:

1. Notify adjacent communities and ADWR prior to such alteration or relocation of a watercourse, and submit evidence of such notification to FEMA through appropriate notification means; and

2. Require that the flood carrying capacity of the altered or relocated portion of said watercourse be maintained.

E. Whenever an application for development or a variance involving property located within a floodplain or floodway has been received, the Floodplain Administrator shall:

1. Provide the Maricopa County Flood Control District, in addition to any adjunct jurisdiction having responsibility for floodplain management within a one-mile radius of the Town, with notice of all applications received by the Town for development or variances within a floodplain or floodway. Said notice shall be in writing and include a copy of the proposed development plan.

2. Provide the Flood Control District of Maricopa County with notice of any major development proposed within a floodplain or floodway, which could affect floodplains, floodways or watercourses within the district's area of jurisdiction. Such notice shall be submitted in writing, along with a copy of such plans, no later than three (3) working days after having been received by the Town.

F. The Floodplain Administer shall make interpretations, where needed, as to the exact location of the boundaries of the areas of special flood hazards (e.g., where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 5-11-26.

G. The Floodplain Administer shall take actions on violations of this ordinance as required in Section 5-11-13 herein.

H. The Floodplain Administer shall notify FEMA and ADWR of acquisition by means of annexation, incorporation or otherwise, of additional areas of jurisdiction.

I. The Floodplain Administer shall within one hundred twenty (120) days after completion of construction of any flood control protective works which changes the rate of flow during the flood or the configuration of the floodplain upstream or downstream from or adjacent to the project, the person or agency responsible for installation of the project shall provide to the governing bodies of all jurisdictions affected by the project a new delineation of all floodplains affected by the project. The new delineation shall be done according to the criteria adopted by the Director of Water Resources.

J. Base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, the Floodplain Administrator shall notify FEMA of the changes by submitting technical or scientific data in accordance with Volume 44 Code of Federal Regulations Section 65.3. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and floodplain management requirements will be based upon current data.

5-11-18 Standards of Construction

In all areas of special flood hazards, the following standards are required:

A. Anchoring

1. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy; and

2. All manufactured homes shall meet the anchoring standards of section 5-11-22.

B. Construction Materials and Methods

1. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;

2. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage;

3. All new construction, substantial improvement and other proposed new development shall be constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding; and

4. Require within Zones AH or AO adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.

C. Elevation and Flood-proofing

1. Residential construction, new or substantial improvement, shall have the lowest floor, including basement,

a. In an AO Zone, elevated to or above the regulatory flood elevation, or elevated at least two feet above the highest adjacent grade if no depth number is specified.

b. In an A Zone where a Base Flood Elevation has not been determined, elevated to or above the regulatory base flood elevation or be elevated in accordance with the criteria developed by the Director of Water Resources.

c. In Zones AE, AH and A1-30, elevated to or above the regulatory base flood elevation.

2. Upon completion of the structure, the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor, and verified by the community's building inspector to be properly elevated. Such certification and verification shall be provided to the Floodplain Administrator.

D. Nonresidential construction, new or substantial improvement, shall either be elevated to conform with Section 5-11-18(C) (1) or together with attendant utility and sanitary facilities:

1. Be flood-proofed below the elevation recommended under Section 5-11-18(C) (1) so that the structure is watertight with walls substantially impermeable to the passage of water,

2. have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

3. be certified by a registered professional engineer or architect that the standards of this Section are satisfied. Such certification shall be provided to the Floodplain Administrator.

E. All new construction and substantial improvement with fully enclosed areas below the lowest floor (excluding basements) that are usable solely for parking of vehicles, building access or storage, and which are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwater. Designs for meeting this requirement must meet or exceed the following criteria:

1. Have a minimum of two openings, on different sides of each enclosed area, having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that the permit the automatic entry and exit of floodwater; or

2. be certified by a registered professional engineer or architect.

3. Manufactured homes shall also meet the standards in Section 5-11-22.

5-11-19 Standards for Storage of Materials and Equipment

A. The storage or processing of materials that could be injurious to human, animal or plant life is prohibited.

B. Storage of other material or equipment may be allowed if not subject to damage by floods and if firmly anchored to prevent flotation, or if readily removable from the area within the time available after flood warning.

5-11-20 Standards for Utilities

A. All new or replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from systems into flood waters.

B. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

C. Waste disposal systems shall not be installed wholly or partially in a regulatory floodway.

5-11-21 Additional Standards for Development, Including Subdivisions

A. All new subdivision proposals and other proposed development of 5 acres or more, shall

1. identify the area of the special flood hazard area and the elevation of the base flood, and

2. identify on the final plans the elevation(s) of the proposed structure(s) and pads. If the site is filled above the base flood, the final lowest floor and grade elevations shall be certified by a registered professional engineer or surveyor and provided to the Floodplain Administrator.

B. All subdivision proposals and other proposed development shall be consistent with the need to minimize flood damage.

C. All subdivision proposals and other proposed development shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.

D. All subdivision proposals and other proposed development shall provide adequate drainage to reduce exposure to flood hazards.

5-11-22 Standards for Manufactured Homes

All manufactured homes that are placed or substantially improved shall:

A. Be elevated so that the bottom of the structural frame or the lowest point of any attached appliances, whichever is lower, is at or above the regulatory flood elevation; and

B. Be securely anchored to an adequately anchored foundation system to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.

5-11-23 Standards for Recreational Vehicles

All recreational vehicles placed on site will either:

A. Be on site for fewer than 180 consecutive days, or

B. Be fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

C. Meet the permit requirements of Section 5-11-15 of this ordinance and the elevation and anchoring requirements for manufactured homes in Section 5-11-22.

5-11-24 Floodways

Located within areas of special flood hazard established in Section 5-11-3 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters, which carry debris, potential projectiles and erosion potential, the following provisions apply:

A. Prohibit encroachments, including fill, new construction, substantial improvements and other development, unless certification by a registered professional engineer or architect is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

B. If Section 5-11-24 is satisfied, all new construction and substantial improvements shall comply with all other applicable flood hazard reduction provisions of Section 5-11-18 et seq.

5-11-25 Nature of Variances

The variance criteria set forth in this Section of the ordinance are based on the general principle of zoning law that variances pertain to a piece of property and are not personal in nature. A variance may be granted for a parcel of property with physical characteristics so

unusual that complying with the requirements of this ordinance would create an exceptional hardship to the applicant or the surrounding property owners. The characteristics must be unique to the property and not be shared by adjacent parcels. The unique characteristic must pertain to the land itself, not to the structure, its inhabitants or the property owners.

It is the duty of the Town of Paradise Valley to help protect its citizens from flooding. This need is so compelling and the implications of the cost of insuring a structure built below the regulatory flood elevation is so serious that variances from the flood elevation or from other requirements in the flood ordinance are quite rare. The long-term goal of preventing and reducing flood loss and damage can only be met if variances are strictly limited. Therefore, the variance guidelines provided in this ordinance are more detailed and contain multiple provisions that must be met before a variance can be properly granted. The criteria are designed to screen out those situations in which alternatives other than a variance are more appropriate.

5-11-26 Appeal Board

A. The Floodplain Board shall hear and decide appeals from decisions made by the Floodplain Administer and requests for variances from the requirements of this ordinance.

B. The Floodplain Board shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the Floodplain Administrator in the enforcement or administration of this ordinance.

C. In passing upon such applications, the Floodplain Board shall consider all technical evaluations, all relevant factors, standards specified in other sections of this ordinance, and:

1. the danger that materials may be swept onto other lands to the injury of others;
2. the danger of life and property due to flooding or erosion damage;
3. the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
4. the importance of the services provided by the proposed facility to the community.
5. The necessity to the facility of a waterfront location, where applicable;
6. the availability of alternative locations for the proposed use, which are not subject to flooding or erosion damage;
7. the compatibility of the proposed use with existing and anticipated development;

8. the relationship of the proposed use to the comprehensive plan and floodplain management program for that area;

9. the safety of access to the property in time of flood for ordinary and emergency vehicles;

10. the expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site; and,

11. the costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, water system and streets and bridges.

D. Upon consideration of the factors of Section 5-11-26(C) and the purposes of this ordinance, the Floodplain Board may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.

E. Any applicant to whom a variance is granted shall be given written notice over the signature of a community official that:

1. the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as $25 for $100 of insurance coverage; and

2. such construction below the base flood level increases risks to life and property, and

3. the land upon which the variance is granted shall be ineligible for exchange of state land pursuant to the flood relocation and land exchange program provided by A.R.S. Title 26, Chapter 2, Article 2. A copy of the notice shall be recorded in the office of the Maricopa County Recorder and shall be recorded in a manner so that it appears in the chain of title of the affected parcel of land.

F. The Floodplain Administrator shall maintain a record of all variance actions, including justification for their issuance and report such variances issued in its biennial report submitted to FEMA.

5-11-27 <u>Conditions for Variances</u>

A. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing the procedures of Sections 5-11-15 Permits and 5-11-18 Standards of Construction of this ordinance have been fully considered.

B. Variances may be issued for the repair, rehabilitation or restoration of structures listed in the National Register of Historic Places or the State Inventory of Historic Places, upon a determination that the proposed repair or rehabilitation will not preclude the structures continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.

C. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

D. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

E. Variances shall be issued only upon:

1. a showing of good and sufficient cause;

2. a determination that failure to grant the variance would result in exceptional hardship to the applicant;

3. a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public or conflict with existing local laws or ordinances.

FOOTNOTES

26 Ordinance #132 - 3/24/77
27 Ordinance #94 - 1/23/75
28 Ordinance #128 - 12/2/76
30 Ordinance #132 - 3/24/77
31 Ordinance #132 - 3/24/77
32 Ordinance #144 - 4/10/80
33 Ordinance #132 - 3/24/77
79 Ordinance #171 - 8/14/80
95 Ordinance #199 - 1/27/83
102 Ordinance #207 - 8/11/83
114 Ordinance #223 - 12/6/84
132 Ordinance #248 - 9/11/86
142 Ordinance #258 - 1/22/87
143 Ordinance #259 - 1/22/87
144 Ordinance #260 - 2/12/87
145 Ordinance #262 - 2/26/87
146 Ordinance #263 - 3/12/87
158 Ordinance #277 - 1/28/88
160 Ordinance #281 - 4/14/88
161 Ordinance #282 - 5/12/88
167 Ordinance #291 - 1/12/89
169 Ordinance #294 - 2/09/89
183 Ordinance #307 - 12/21/89
190 Ordinance #318 - 12/6/90
191 Ordinance #324 - 8/8/91
192 Ordinance #331 - 2/13/92
197 Ordinance #324 - 08/08/91
199 Ordinance #326 - 10/29/91
Repealed
203 Ordinance #331 - 2/13/92
354 Ordinance #354 - 2/9/93
356 Ordinance #356 - 6/24/93
360 Ordinance #360 - 8/3/93
373 Ordinance #373 - 7/28/94
380 Ordinance #380 - 10/13/94
430 Ordinance #430 - 12/5/96
438 Ordinance #438 - 4/24/97
439 Ordinance #439 - 3/27/97
448 Ordinance #448 - 1/22/98
450 Ordinance #450 - 12/18/97
452 Ordinance #452 - 2/12/98
454 Ordinance #454 - 1/22/98
459 Ordinance #459 - 3/12/98
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478 Ordinance #478 - 1/14/99
489 Ordinance #489 - 9/9/99
483 Ordinance #483 - 3/25/99
491 Ordinance #491 - 11/18/99
500 Ordinance #500 – 03/09/2001
513 Ordinance #513 – 06/28/2001
515 Ordinance #515 – 09/13/2001
518 Ordinance #518 – 09/13/2001
521 Ordinance #521 – 07/11/2002
524 Ordinance #524 – 11/07/2002
543 Ordinance #543 – 07/08/2004
552 Ordinance #552 – 12/16/2004
551 Ordinance #551 – 01/27/2005
562 Ordinance #562 – 06/23/2005
569 Ordinance #569 – 09/30/2005
571 Ordinance #571 – 11/17/2005
572 Ordinance #572 – 11/17/2005
577 Ordinance #577 – 02/23/2006
587 Ordinance #587 – 02/22/2007- (Reorganized and Renamed)
588 Ordinance #588 – 02/22/2007
590 Ordinance #590 – 04/12/2007
594 Ordinance #594 – 05/10/2007
601 Ordinance #601 – 02/28/2008
612 Ordinance #612 – 06/11/2009
648 Ordinance #648 – 11/15/2012

CHAPTER 6 SUBDIVISIONS

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Article 6-2 **PROCEDURE FOR THE PREPARATION AND FILING OF PLATS**

6-2-1 Pre-Application Conference
6-2-2 Preliminary Plat [144 540]
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6-9-7 Lot Split Procedures

CHAPTER 6 SUBDIVISIONS

Article 6-1 DEFINITIONS [86 112 170 210 535]

In this chapter unless the context requires otherwise, the following terms contained in this chapter shall mean:

Alley - A passage or way open to public travel, affording generally a secondary means of vehicular access to abutting lots or upon which service entrances of buildings abut, and not intended for general traffic circulation.

Building line - A line between which line and street line no building or structure, or portion thereof, may be erected, constructed or established.

Commission - The Planning and Zoning Commission of the Town of Paradise Valley.

Cul-de-sac **(**as distinguished from an unplanned dead-end street**)** - A short minor street having but one end open for motor traffic, the other being permanently terminated by a vehicular turn-around.

Cut - The land surface, which is shaped through the removal of soil, rock, or other materials.

Double frontage - A lot which extends from one street to another or proposed street.

Easement - A grant by a property owner of the use of a strip of land for a specific purpose or purposes, by the general public, a corporation, or a certain person or persons.

Fill - The deposit of soil, rock or other materials placed by man.

Hillside Development Area - Those areas marked in **FIGURE 2** of Article XXII Hillside Development Regulations of the Town of Paradise Valley Zoning Ordinance and to all lands where the natural terrain under the building pad has a slope of ten percent (10%) or greater, whether shown in **FIGURE 2** or not. However, a 10% or greater slope, in an area not denoted on **FIGURE 2**, created by a natural wash on land that otherwise would not be classified as hillside land shall be exempt from the hillside regulations.

Lot - A parcel of land occupied or intended for occupancy by one main building, together with any accessory buildings including the open spaces required of the Hillside Regulations and having adequate frontage on a public or private street.

Lot, double frontage - A lot which extends from one street to another street, existing or proposed.

Lot split - The division of property into two or three tracts or parcels of less than five (5) acres. [86]

Master plan - A comprehensive plan or parts thereof adopted by the Council indicating the general locations recommended for streets and highways, parks, playgrounds, schools, public building sites and other physical improvements.

Plat, final - A plat conforming to the requirements of Article 6-6 and which must be approved by the Council before it can be filed for record with the recorder of deeds.

Plat, preliminary - The preliminary plat of the layout of the proposed subdivision.

Street - A road, highway, drive, lane, avenue, boulevard, easement for access, right of way, parking or any other way, whether public or private, which affords the principal means of access to abutting property.

Subdivider - The individual, firm, corporation, partnership, association, syndication, trust or other legal entity that files an application and initiates proceedings for the subdivision of land in accordance with the provisions of this chapter; and said subdivider need not be the person or persons holding title by deed to land, or holding title as vendees under land contract or holding any other title of record.

Subdivision - Improved or unimproved land or lands divided for the purpose of financing, sale or lease, whether immediate or future, into four or more lots, tracts or parcels of land, or, if a new street is involved, any such property which is divided into two or more lots, tracts or parcels of land, or, any such property, the boundaries of which have been fixed by a recorded plat, which is divided into more than two parts; provided that the sale or exchange of parcels of land to or between adjoining property owners where such sale or exchange does not create additional lots shall not be deemed a subdivision. The partitioning of land in accordance with state statutes regulating the partitioning of land held in common ownership shall not be deemed a subdivision. [86]

Article 6-2 PROCEDURE FOR THE PREPARATION AND FILING OF PLATS[535]

6-2-1 Pre-Application Conference
6-2-2 Preliminary Plat [144 540]
6-2-3 Final Plat

Section 6-2-1 Pre-Application Conference

Prior to filing of a preliminary plat, the subdivider is invited to discuss with the Commission any problem involved in the development of a particular tract of land concerned as it pertains to requirements of the Zoning Ordinance, the Master Plan and Subdivision Regulations as these apply to the area. It is further suggested that the subdivider confer with the Town Engineer, County Engineer and the County Health

Department regarding matters of streets, drainage, flood control, sanitation and public health.

Section 6-2-2 Preliminary Plat [540]

A. Following the pre-application conference, if any, the subdivider shall submit a water service impact study prepared by a registered civil engineer that analyzes the water flow and pressure in the immediate area of the proposed subdivision and the appropriate infrastructure or other water system improvements that are necessary to assure that the subdivision shall have adequate flow and pressure to meet Town Code standards. After completion of the water service impact study and a review of such study and other required submittals associated with the preliminary plat by the Town, the subdivider shall present to the Commission twenty (20) copies of the preliminary plat, together with a completed application form. The preliminary plat shall be presented at least twenty-eight (28) days prior to a meeting of the Commission in order that reasonable time is obtained for study of the plat by the Planning and Zoning Commission and other officials and agencies concerned. The Commission shall act on the preliminary plat within forty (40) days.

B. Subdivision application fees shall be those prescribed in the Town of Paradise Valley Fee Schedule. [144]

C. Following action of the Commission, one copy of the preliminary plat, together with a written report, shall be returned to the subdivider or plat engineer describing any recommended changes and stating the action of the Commission. Reconsideration of a plat may be requested by the subdivider.

D. If a preliminary plat is rejected by the Commission and the subdivider elects not to modify it to secure Commission approval, but to stand on it as submitted and rejected, the subdivider may appeal the rejection to the Council and the Council may affirm, reverse, or modify the action of the Commission, or the Council may remand the matter to the Commission for further proceedings.

Section 6-2-3 Final Plat

A. The final plat and six (6) paper prints thereof shall be presented to the Commission for consideration within twelve (12) months from date of preliminary plat approval by the Council; otherwise, such preliminary approval shall become null and void unless an extension of time is granted by the Council.

B. Subdividers or plat engineers shall obtain final plat review by the Town Engineer and other officials and agencies concerned prior to presentation.

C. The Commission shall review the final plat for comparison with the preliminary plat as approved. The approval of the final plat by the Commission shall not be deemed to constitute or effect an acceptance by the public of the dedication of any street, or other proposed public way or space shown on the plat. A recommendation concerning approval will be adopted and transmitted to the Council.

Article 6-3 STANDARDS OF DESIGN [170 535]

6-3-1 Relation to Adjoining Street Systems
6-3-2 Right-of-way, Street and Alley Width, Cul-de-Sac, Half Street, Alley [86 115]
6-3-3 Easements
6-3-4 Blocks
6-3-5 Lots [432 564]
6-3-6 Building Lines
6-3-7 Public Reservations
6-3-8 Easement Along Streams [513 601]
6-3-9 Building in Designated Flood Plain Areas
6-3-10 Character of Development
6-3-11 Subdivision Identification Signs [34 83 170]
6-3-12 Subdivision Walls or Fences [36 375]

Section 6-3-1 Relation to Adjoining Street Systems

A. The arrangement of streets in new subdivisions shall make provision for the continuation of the principal existing streets in adjoining areas or their proper projections where adjoining land is not subdivided insofar as they may be deemed necessary for public requirements. The width of streets in new subdivisions shall be not less than the minimum width established by the Town.

B. Wherever a subdivision adjoins a major thoroughfare, the Commission may require that access to all residential lots be provided from other than the major thoroughfare.

C. The street and alley arrangement shall take into consideration adjoining property and seek to provide for convenient access thereto.

Section 6-3-2 Right-of-way, Street and Alley Width [86 115]

A. Rights-of-Way and Streets. The width of all rights-of-way and streets shall conform to the width designated in the General Plan, or such other width as

specified by the Town. The subdivider shall dedicate to the Town all rights-of-way within the subdivision.

B. Cul-de-sac. A dead-end street not to exceed five hundred feet (500') in length may be established, provided that there shall be a turn-around, at the closed end, having a right-of-way radius of not less than forty-five feet (45') with an improved traffic circle having a radius of forty feet (40').

C. Half Street. Dedication of half streets shall be discouraged. Where there exists a dedicated or platted half street or alley adjacent to the tract being subdivided, the other half shall be platted unless deemed unnecessary by the Town.

D. Alley. Where alleys are required to serve residential lots a minimum width of twenty-four feet (24') shall be provided. All half alleys shall have a minimum width of twelve feet (12'). Alleys are required in the rear of all commercial lots if no other provisions are made for adequate service access or for parking and the rights-of-way of such alleys shall not be less than thirty feet (35'), and dead-end alleys shall not be permitted.

Section 6-3-3 Easements

Private easements for utilities shall be provided as follows:

A. Where alleys are provided, four feet (4') for aerial overhang on each side of an alley may be provided by dedication but need not be delineated on the plat.

B. Where no alley is provided and adjoining land is a part of the subdivision, eight feet (8') on each side of rear lot line.

C. Where no alley is provided and adjoining land is unplatted, eight feet (8') adjacent to the tract boundary.

D. Along side lot lines, six feet (6') on each side of lot lines for distribution facilities and one foot (1') on each side of lot lines for street lighting as may be designated.

D. Guy and anchor easements, one foot (1') wide on each side of a lot line and approximately thirty-five feet (35') in length measured from rear lot line as designated.

Section 6-3-4 Blocks

A. No block shall be longer than fifteen hundred feet (1,500'). Where a subdivision adjoins a major thoroughfare, the greater dimension of the block shall front or back on such major thoroughfare to avoid unnecessary ingress or egress.

B. A dedicated and improved right of way not less than eight feet (8') wide may be required if necessary to provide proper access to schools, playgrounds and other facilities.

Section 6-3-5 Lots [432 564]

A. The lot arrangement and design shall be such that all lots will provide satisfactory and desirable building sites, properly related to topography and to the character of surrounding development and will preclude unorthodox or unusually shaped lots.

B. All side lines of lots shall be at right angles to straight street lines and radial to curved street lines for a distance equal to the horizontal distance between the property line and the front setback line.

C. No lot shall have less area, width or access than required by the zoning regulations applying to the area in which it is located nor otherwise violate the Town's Zoning Ordinance.

D. Corner lots for residential use shall have adequate width to permit appropriate building orientation to and setbacks from both streets except as otherwise provided in Section 306 of the Paradise Valley Zoning Ordinance.

E. Each lot shall have adequate vehicular access to a public street.

F. Multi-frontage lots shall be avoided except where essential to provide separations of residential development from major thoroughfares or to overcome specific disadvantages of topography and lot orientation.

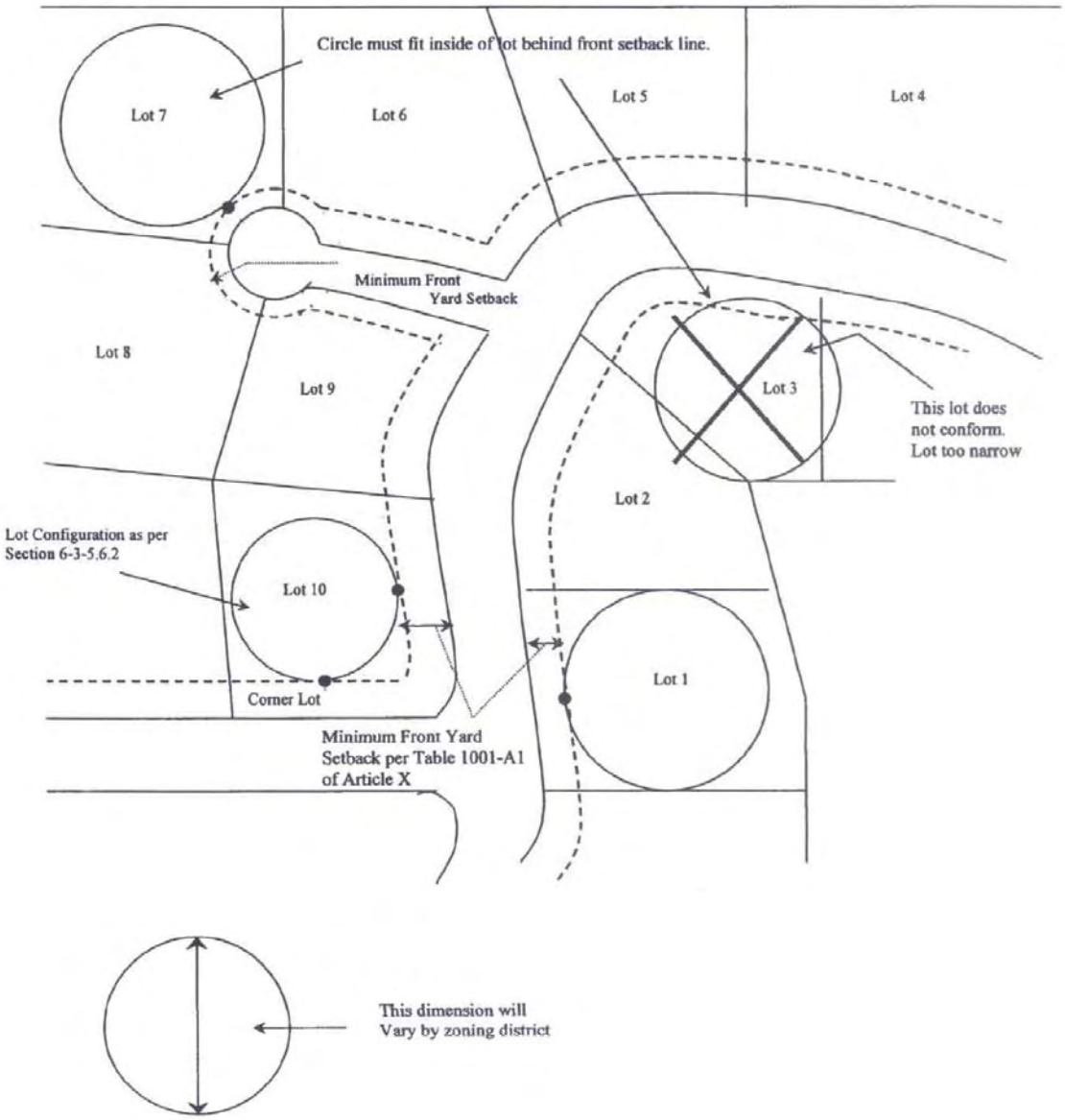
G. Lot Configuration [432 564]

1. A lot shall be designed so that the side and rear boundary lines and the front setback line fully enclose a circle which fits within the lot area and touches the front setback line at a single point (see diagram in figure 6-3-5.G). The diameter of such circle shall be no less than the minimum lot width for the zoning district within which the lot is located (see Table 1001-A1).

2. If the front of the dwelling on a corner or double frontage lot has not been established at the time the lot is created, a front setback is required for each frontage of the lot. The circle described in subsection 1 shall be fully enclosed within the lot area and touch each front setback line at a single point.

3. Figure 6-3-5.G attached to this article and incorporated herein by reference.

Figure 6-3-5.G, Lot Configuration



Section 6-3-6 Building Lines

Minimum building lines shall be shown on all lots intended for residential use of any character and on commercial or industrial lots immediately adjoining residential areas. Such setback lines shall not be less than required by any Zoning Ordinance or building line regulation applying to the property. Whenever minimum building lines are shown, a statement of restrictions requiring buildings to be located on or in back of such minimum building lines shall be shown on the plat.

Section 6-3-7 Public Reservations

Where the subdivision contains a park, school, or other public area which is shown upon the Master Plan of the Town or as recommended by the Commission, such area shall either be dedicated to the proper public agency, or it shall be reserved for acquisition thereby within a specified period of time. An agreement should be entered within a reasonable period of time between the subdivider and the proper public agency regarding the time and method of acquisition and the cost thereof. If the Commission determines that an agreement has not been reached within a reasonable period of time then the Commission may make a determination that the requirements of this section have been met.

Section 6-3-8 Easement Along Watercourses, Easement Maintenance Agreements, and Required Maintenance [513 601]

A. For the purposes of this section, "watercourse" means any creek, stream, wash, arroyo, channel or other body of water having historical banks and a bed at least two (2) feet deep and five (5) feet wide through which waters flow on a recurrent basis.

B. Whenever any watercourse is located in the area being subdivided, provision shall be made on the plat for an adequate drainage easement along the main channel and each side of the watercourse for the purpose of widening, deepening, relocating, improving or protecting the watercourse for drainage purposes, and the plat notes shall state that the provision of the drainage easement is for the purposes stated above, but that the maintenance responsibility for the watercourse, as required by Town Code, shall be the responsibility of the homeowner’s association for the subdivision, if such is established, and each lot owner within the subdivision.

C. In addition to the plat requirements, Drainage Easement Maintenance Agreements shall be required for any watercourse located in an area being subdivided. Said agreements shall:

1. Be in a form acceptable to the Town Engineer,

2. Grant easement rights and a right of entry in, over, and across the drainage easement area,
3. Specify that the maintenance responsibility for the drainage easement area remains private, and
4. Be recorded in the Maricopa County Recorder's Office.

D. The Homeowners Association for the platted area, if any, and the individual lot owners in the subdivision shall clean, repair and maintain the watercourse within the Drainage Easement area in a safe, clean, and properly operating condition and in compliance with all applicable Town Codes.

Section 6-3-9 Building in Designated Flood Plain Areas

All subdivisions built wholly or in part within designated flood plain areas shall comply with all provisions of the Flood Plain Regulations as contained in the Zoning Ordinance.

Section 6-3-10 Character of Development

The subdivider shall confer with the Commission regarding the type and character of development that will be permitted in the subdivision and the Town may require certain minimum restrictions to be placed upon the property to prevent the construction of substandard buildings, control of the type of structure or the use of the lots, which, unless so controlled, would clearly depreciate the character and value of the proposed subdivision and of adjoining property. These restrictions may include provisions for the proper protection and maintenance of the subdivision in the future.

Section 6-3-11 Signs [34 83 170]

All signs shall comply with the terms of Article XXV of the Zoning Ordinance of the Town of Paradise Valley.

Section 6-3-12 Subdivision Walls or Fences [36 121 375]

A. All subdivision perimeter walls and fences must conform to the provisions of Article XXIV of the Zoning Ordinance. Construction of perimeter walls may not begin until after the Town Planning and Zoning Commission has considered a plan for the wall or fence, or both, and the plan has been approved by the Town Council. The plan must show the location and dimensions, and must include detailed landscape plans.

B. In any subdivision that has a perimeter wall, no landscape or accent or aesthetic lighting shall be allowed between that wall and the nearest street. All safety or

security lighting for guardhouses and guardgates shall be restricted to the entrance of that guardhouse or guardgate and a lighting plan for safety/security shall be submitted with the Special Use Permit application.

EXCEPTION: If signage is allowed for a subdivision, any lighting of that signage shall be governed by Section 2506 of the Town Zoning Ordinance.

Article 6-4 ASSURANCES, WARRANTY, MINIMUM IMPROVEMENTS REQUIRED [145 185 210 351 459 478 535]

6-4-1 Assurances
6-4-2 Warranty [210]
6-4-3 Minimum Improvements Required [351 459 478 540]

Section 6-4-1 Assurances

No final plat of any subdivision shall be approved unless the subdivider shall have petitioned and secured the approval of the Town of a procedure which places the Town in an assured position to do or to contract to be done all or any part of the improvements listed in Section 6-4-3, the cost of which may be assessed against the owners of the property within the subdivision.

Section 6-4-2 Warranty [210]

No final plat of any subdivision shall be approved unless the subdivider shall have provided the Town with a warranty deed or deeds certifying title to all dedicated property such as right-of-ways and public utility and drainage easements.

Section 6-4-3 Minimum Improvements Required [540]

A. Street Improvements. All streets shall be paved and curbs or combined curbs and gutters shall be constructed along all streets in accordance with the standard specifications of the Town.

B. Water System. Every subdivision shall be provided with a complete water distribution system. Both the quality and adequacy of the supply of water to be provided by the complete water distribution system shall: (1) incorporate all water system improvements recommended by the water service impact study, pursuant to Section 6-2-2 of Article 6-2 of the Subdivisions Code, and any additional system requirements identified during the review of the water service impact study**,** (2) be certified by the Water Corporation or public utility that shall provide water to the subdivision, and (3) be approved by the Maricopa County Department of Health Services, as conditions precedent to final subdivision plat approval.

C. Sanitary Sewers. [478]

1. Where public sanitary sewers are within reasonable access of the subdivision, in the opinion of the County Health Department or Town Engineer, each lot therein shall be provided with sanitary sewer line, notwithstanding the construction of such sewer line, a homeowner may choose private wastewater treatment approved by the Town. [478]

2. Whenever a public sanitary sewer is not accessible, in the opinion of the County Health Department or Town Engineer, proper provision shall be made for disposal of sanitary wastes in accordance with standards and requirements of such department.

D. Fire Hydrants. Every subdivision shall be provided with fire hydrants as an integral part of the water distribution system which are considered adequate to serve the area in the opinion of the Town Engineer or such other official as may be designated by the Council by resolution. Such hydrants shall be dedicated to the Town.

E. Drainage. All necessary facilities, as determined by the Town Engineer, including underground pipe, inlets, detention/retention basins, or open drainage ditches, shall be installed to provide for the adequate containment and disposal of surface water and to maintain any natural drainage course. [145]

F. Reference Monuments. Permanent reference monuments shall be installed in accordance with current Town standards at all corners, angle points and points of curvature and at all street intersections. On section corners and quarter section corners a brass monument shall be installed in the street. After all improvements have been installed, a registered surveyor or engineer shall check the location of monuments and certify their accuracy to the satisfaction of the Commission. Iron pipe shall be set at all corners, angle points, and points of curvature for each lot within the subdivision prior to the recording of the plat.

G. Street Name Signs. Street name signs, of a type meeting the approval of and in locations designated by the Town, shall be erected at all highways, thoroughfares, and street intersections.

H. Miscellaneous. Electrical service, gas mains, telephone service, water service and cable communications systems shall be provided within each subdivision. All such services shall be located underground. The subdivider shall notify the appropriate provider of each service. The notice shall include date of trenching and location sketches. [185]

I. Plans, Specifications and Supervision. All of the improvements required in this section shall be installed in accordance with the specifications and under the supervision of the appropriate public official.

J. Provisions for Maintenance and Operation. [205] Where the subdivision is to contain sewers, sewage treatment plants, park areas, street trees or other physical facilities necessary or desirable for the welfare of the area and which are of common use or benefit for example private streets, and cluster plan common area and which are of such character that the Town does not desire to maintain them, or has no original obligation to maintain, then provision shall be made for the proper and continuous maintenance and supervision of such facilities by the lot owners in the subdivision. The provisions for maintenance and supervision shall be in the form of deed restrictions (CC&R's) and must include the right of the Town of Paradise Valley to do the maintenance after reasonable notice if the property owners fail to do the maintenance. The deed restrictions shall permit the Town of Paradise Valley, if it does maintenance, to recover costs from the property owners, and to place a lien on the individual lots of the subdivision if the property owners do not reimburse the Town.

Article 6-5 INFORMATION REQUIRED ON THE PRELIMINARY PLAT [535]

The preliminary plat shall be drawn at a scale of not more than one hundred feet to the inch and shall show the following information:

A. The proposed street and lot layout showing the names and location of all existing streets, roads, alleys, parks, parkways, tree masses, public spaces, easements, sewers, utilities and utility easements, buildings, streams, washes, ditches, political and zoning district boundaries and similar features in the subdivision and adjacent to the property where such features would affect the design of the subdivision.

B. The elevation and description of the bench mark used.

C. The name and address of the subdivider.

D. The date, north point, scale and title under which the proposed subdivision is to be recorded.

E. The name, address and license number of the engineer, surveyor, landscape architect or land planner who prepared the plat.

F. The name and address of all owners and the location of the unsubdivided property adjoining the property to be subdivided.

G. The names and adjoining boundaries of all adjoining subdivisions showing the name, book and page of recording and existing dedications adjacent to the preliminary plat.

H. Topography by contours related to USGS survey datum, or other datum approved by the Town or County Engineer, and shown on the same map as the proposed subdivision layout. The contour interval shall be such as to reflect adequately the character and drainage of the land.

I. Indications to show areas which are subject to frequent or periodic inundation.

J. Indication to show the proposed use of all the land in the subdivision including reservations and exceptions.

K. The location, height, design and setback of the subdivision perimeter wall. [134]

Article 6-6 INFORMATION REQUIRED ON THE FINAL PLAT [535]

The following items shall be included in the final plat:

A. The name and address of the subdivider.

B. The title of the subdivision, date, north point, scale and name of the registered professional engineer or land surveyor who prepared the plat.

C. The boundaries of the property fully balanced and closed showing all bearings, angles and dimensions, determined by an accurate survey in the field. A relative location to the nearest existing street shall also be shown on the plat.

D. The location and description of all permanent monuments, and a reference bench mark set at such critical points and so interconnected and dimensioned that any surveyor can lay out lots or street s in the subdivision correctly by referring to the plat alone without any additional information.

E. The names, locations and widths of all parkways or easements and any other portions intended to be dedicated to public use or provided for the installation of utilities, fully dimensioned showing the angles of intersection of streets and the radii, chords, points of tangency and central angels for all curvilinear streets and the radii of all rounded corners and with notations concerning their dedication, reservation and use.

F. Lot and block numbers, lot lines and setback lines, fully dimensioned.

G. The location of all immediately adjoining property lines and the location, name and width of all roads, streets, alleys, parkways and easements.

H. All dimensions shall be expressed in feet or decimals thereof.

I. Any private restrictions and trusteeships and their period of existence shall be shown on the plat or reference to them made thereon. If such restrictions are too long to be shown on the plat, a copy of the same shall be filed with the Commission together with the final plat.

J. The final plat is to be drawn at a scale of not more than one hundred feet to the inch from an accurate survey. If more than two sheets are required, an index sheet of the same dimension shall be filed showing the entire subdivision on one sheet together with all areas shown on other streets.

K. The following certificates shall be placed on the plat:

1. Statement of dedication of all streets, alleys, crosswalks, and other rights of ways and easements for public use by the person holding title by deed to the lands, by persons holding any other title or record, by persons holding title as vendee under land contract, and by wives of said parties. If lands dedicated are mortgaged, the mortgagee shall also sign the plat. Dedication shall include a written location by section, Township, and range of the tract. If the plat contains private streets, the public shall be reserved the right to install and maintain utilities in the street rights of way.

2. Certification by the registered professional engineer or land surveyor making the plat that the plat is correct and accurate and that the monuments described in it have been located as described.

3. Such other certificates as may be required for the enforcement of these regulations.

L. The location, height, design and setback of the subdivision perimeter wall. [134]

Article 6-7 HILLSIDE DEVELOPMENT REGULATIONS [535 540]

All subdivisions and lot splits within the Hillside Development Area, as defined in Article 6-1 of this Ordinance shall abide by the requirements and provisions contained in the following sections and the regulations for Hillside Development as outlined in Article XXII of the Town of Paradise Valley Zoning Ordinance.

A. SPECIAL PRELIMINARY PLAT REQUIREMENTS [540]

There shall be filed with the Town a preliminary plat which shall contain in addition to all other information and submittals required in Chapter 6 of this Ordinance the following:

1. A topographic map, certified by a registered engineer or land surveyor, with a scale of not less than one inch per 100 feet of existing terrain with contour intervals adequate to show the nature and variations in the terrain,

    a. two (2) foot intervals for grades less than 15 percent.

    b. five (5) foot intervals for grades greater than 15 percent.

    c. elevations of critical spots, rock outcrops, and special characteristics.

2. A proposed grading plan, certified by a registered Engineer, for each lot, in conformance with the grading and drainage regulations as adopted by the Town, showing the natural topography of the total parcel to be platted, the location and size of all structures, and grade of all improvement locations and the depth and extent of all cuts, fills, and disturbed areas.

3. A report of a soil investigation by a registered engineer or geologist to determine any geological hazard and soil bearing quality.

4. Location of existing and proposed conservation easements, if any.

B. SPECIAL FINAL PLAT REQUIREMENTS

There shall be filed with the Town a final plat which shall contain in addition to the information required in Article 6-6 of this Ordinance the following:

1. A final grading plan which conforms to the requirements of the grading and drainage regulations as required by and established in the Uniform Building Code adopted and approved by the Council.

2. A detailed topographic map at larger scale and closer contour intervals than in the preliminary plat, or suitable cross sections or profiles of areas where roads, driveways, buildings, utility, or grading construction is proposed.

3. Road profiles and cross sections at all significant changes in the cross slopes; the cross section to show proposed and natural grade at the centerline of the road, the right-of-way line, and the proposed building setback lines.

4. Locations of all building sites and proposed driveways.

C. SPECIAL DESIGN STANDARDS

1. A road with a grade exceeding 12% shall not be longer than 600 feet.

2. One-way loop roads may be constructed upon recommendation of the Commission and the Town Engineer and approved by the Council.

3. All public roads shall have a 50 foot dedicated right-of-way and shall be constructed with decorative brick pavers or other surface material as approved by the Town Council. To minimize cuts, the Commission may recommend and the Council may approve a road of reduced pavement width but not less than 20 feet wide. The maximum grade shall not exceed 15% except that under demonstrated hardship the Commission may recommend and the Council may approve a road having grade not to exceed 20%.

4. Private roadways, where permitted, shall have a tract width of 50 feet, be approved pursuant to the Zoning Ordinance of the Town of Paradise Valley**,** and be constructed with decorative brick pavers or other surface material as approved by the Town Council. In addition to all other requirements, and where needed, easements for drainage shall be provided. Such private roadways in Hillside Development Area subdivisions or lot splits shall have a paved surface width of not less than twelve feet if serving only one lot, fifteen feet if serving two lots, and twenty feet if serving three or more lots. Each private road shall have a 50-foot easement for utility purposes and shall conform to Town standards.

5. All private roads shall have sufficient turnarounds, and may be identified by a single road sign.

6. Subdivision identification signage shall not be permitted.

7. In any Hillside Development Area to be subdivided, the amount of land devoted to public rights-of-way or private roads approved by Special Use Permit shall not exceed ten (10) percent of the gross parcel area.

8. The total area subject to cut and/or fill for purposes of public or private roads within a Hillside Development Area subdivision shall not exceed five (5) percent of the gross parcel area.

9. Upon recommendation by the Commission and the approval of the Council, the following street modifications may apply:

    a. Various designs for turning and backing such as hammerheads may be substituted for cul-de-sacs.

    b. Required paving width of the traffic lanes may be modified when off-road parking bays are provided, developed, and paved in the public right-of-way.

    c. Centerline of the paving may be offset from the centerline of the right-of-way to provide parking bays in the right-of-way.

10. Vertical curbs may be required on the downhill side of roads having grades of 6 percent (6%) or greater; concrete U or V gutter may be installed in lieu of conventional rolled or vertical curb elsewhere as determined by the Engineer's final drainage report.

11. Transverse road cross sections with gutter on the uphill side may be used where approved by the Town.

12. All cut and fill shall be within the roadway right-of-way or easement. For cul-de-sacs and turnarounds, easements for slope maintenance may be required by the Town Engineer.

13. All cut slopes and fill slopes shall be landscaped or treated in such a manner that the slopes blend into the natural appearance of the hillside. Such blending shall be accomplished within one year of the start of any roadway improvements and shall be required before the release of the Assurance of Construction bond on the improvements within the subdivision.

14. All excavated material from a right-of-way shall be removed from the right-of-way or contained behind retaining walls or otherwise hidden in order that no fill material will be visible from any public or private road.

15. Roadway retaining walls shall not exceed 8 feet in height. Roadway retaining walls over 4 feet in height shall not exceed 100 feet in length. Roadway retaining walls shall be veneered with natural rock compatible to the site.

16. Intersecting roads shall not be graded at their intersection so as to create an obstruction to vision which extends two feet or more above the grade of

either road within an area formed by the lot lines on the road sides of such lot and a line joining points on such lines located a distance of fifty (50) feet from the point of their intersection. If excessive cut and fill is required to attain the fifty (50) foot then a lesser dimension (thirty (30) feet minimum) may be permitted if approved by the Town Council.

17. Permanent survey markers shall be installed in accordance with current Town standards at all corner, angle points, and points of curve and at all street intersections, and at all corners, angle points, and points of curve of all conservation easements. After all improvements have been installed, a registered land surveyor or civil engineer, at the expense of the developer, shall check the location of markers, correct any inaccuracies, and certify their accuracy.

18. Percolation test and test boring logs in accordance with the requirements of the County Health Department shall be taken at the proposed subdivision prior to the submittal of the preliminary plat.

19. Any proposed sewage treatment facility shall be approved by the County Health Department prior to final plat approval.

D. MAXIMUM NUMBER OF LOTS

No lot split or subdivision subject to the provisions of this Section shall be approved when such lot split or subdivision would thereby create a greater number of lots than allowed under Section 2209 of the Zoning Ordinance of the Town of Paradise Valley and by the following **TABLE 1.**

TABLE 1 – Density / Slope Category

Average Lot Slope %	Min. Lot Size Acres	Min. Lot Size -Sq. Ft.	Average Lot Slope %	Min. Lot Size Acres	Min. Lot Size – Sq. Ft.
10%	1	43,560	41%	6.8	296,208
11%	1.01	43,996	42%	7.6	331,056
12%	1.02	44,431	43%	8.4	365,904
13%	1.04	45,302	44%	9.2	400,752
14%	1.06	46,174	45%	10	435,600
15%	1.08	47,045	46%	11	479,160
16%	1.1	47,916	47%	12	522,720
17%	1.2	52,272	48%	13	566,280
18%	1.3	56,628	49%	14	609,840
19%	1.4	60,984	50%	15	653,400
20%	1.55	67,518	51%	16	696,960
21%	1.6	69,696	52%	17	740,520
22%	1.7	74,052	53%	18	784,080
23%	1.8	78,408	54%	19	827,640
24%	1.9	82,764	55%	20	871,200
25%	2	87,120	56%	21	914,760
26%	2.2	95,832	57%	22	958,320
27%	2.4	104,544	58%	23	1,001,880
28%	2.6	113,256	59%	24	1,045,440
29%	2.8	121,968	60%	25	1,089,000
30%	3	130,680	61%	26	1,132,560
31%	3.2	139,392	62%	27	1,176,120
32%	3.4	148,104	63%	28	1,219,680
33%	3.6	156,816	64%	29	1,263,240
34%	3.8	165,528	65%	30	1,306,800
35%	4	174,240	66%	32	1,393,920
36%	4.4	191,664	67%	34	1,481,040
37%	4.8	209,088	68%	36	1,568,160
38%	5.2	226,512	69%	38	1,655,280
39%	5.6	243,936	70%	40	1,742,400
40%	6	261,360			

Article 6-8 VARIANCES AND MODIFICATIONS [535]

A. Where the Commission in its recommendations and the Council find that extraordinary hardships may result from strict compliance with these regulations, the Council may vary the regulations after receipt of recommendations for the Commission so that substantial justice may be done and the public interest secured; provided, that such variation shall not have the effect of nullifying the intent and purpose of the Master Plan or these regulations.

B. The standards and requirements of these regulations may be modified by the Council upon recommendation of the Commission in the case of a plan and program for a neighborhood unit, which in the judgment of the Commission and the Council provides for adequate public spaces and improvements for the circulation, recreation, light, air, and service needs of the tract when fully developed and populated, and which also provide such covenants or other legal provisions as will assure conformity to and achievement of the plan.

C. In granting variances and modifications, the Commission, by recommendation, and the Council may require such conditions as will, in their judgment, secure substantially the objectives of the standards or requirements so varied and modified.

Article 6-9 LOT SPLITS [86 88 535]

6-9-1 Fees [491]
6-9-2 Final Plats
6-9-3 Standards of Design
6-9-4 Minimum Improvements Required
6-9-5 Information Required on Final Plats
6-9-6 Hillside Development Areas
6-9-7 Lot Split Procedures [406]

Section 6-9-1 Fees [491]

Lot split application fees per lot shall be in accordance with the Paradise Valley Fee Schedule and shall be paid upon filing of the lot split application.

Section 6-9-2 Final Plats [88]

A final plat and two paper prints shall be submitted with the lot split application.

Section 6-9-3 Standards of Design [88]

The standards of design set forth in Article 6-3 shall apply to lot splits, except that identification signs as provided in Section 6-3-11 shall not be allowed. Section 6-3-10 shall not apply to lot splits. No lot split which creates a substandard or non-conforming lot or structure shall be approved except by Council action.

Section 6-9-4 Minimum Improvements Required [88]

The minimum improvements and bonding procedures set forth in Article 6-4 shall apply to lot splits, except that street improvements may be waived if the existing streets adjacent to the lot split are comparable to the streets on adjacent properties.

Section 6-9-5 Information Required on Final Plats

The information required on final plats as specified in Article 6-6 shall apply to lot splits.

Section 6-9-6 Hillside Development Area

The provisions of Article 6-7 shall apply to lot splits.

Section 6-9-7 Lot Split Procedures [88]

The Town Staff shall review the lot split application. After review by the Staff, the lot split application shall be submitted to the Planning and Zoning Commission and the Town Council by following the requirements of Article 6-2 of this Chapter.

FOOTNOTES

34 Ordinance #118 - 5/27/76
35 Ordinance #151 - 4/26/79
36 Ordinance #161 - 2/28/80
83 Ordinance #279 - 6/25/81
86 Ordinance #183 - 6/25/81
88 Ordinance #185 - 8/27/81
112 Ordinance #221 - 9/27/84
115 Ordinance #224 - 12/6/84
121 Ordinance #231 - 7/25/85
134 Ordinance #250 - 9/25/86
144 Ordinance #260 - 2/12/87
145 Ordinance #262 - 3/26/87
170 Ordinance #295 - 2/9/89
185 Ordinance #310 - 4/12/90
205 Ordinance #335 - 3/12/92
351 Ordinance #351 - 9/29/92
375 Ordinance #375 - 8/25/94
406 Ordinance #406 - 9/28/95
432 Ordinance #432 - 12/19/96
459 Ordinance #459 - 03/12/98
478 Ordinance #478 - 01/14/99
491 Ordinance #491 - 11/18/99
513 Ordinance #513 – 06/28/2001
535 Ordinance #535 – 10/09/2003
540 Ordinance #540 – 5/27/2004
545 Ordinance #454 – 10/14/2004 (Amend effective date of Ordinance 535)
564 Ordinance #564 – 11/03/2005
601 Ordinance #601 – 02/28/2008

CHAPTER 7 ANIMAL CONTROL

Article 7-1 **DEFINITIONS** [428]

Article 7-2 **UNLAWFUL ACTS**

7-2-1 Cruelty
7-2-2 Dangerous Animals
7-2-3 Animal Noises [428]
7-2-4 Strays
7-2-5 Diseased Animals
7-2-6 Feeding Wild Coyotes
7-2-7 Control of Animals
7-2-8 Unlawful Keeping of Dogs
7-2-9 Destruction of Property
7-2-10 Dogs Not Permitted at Large
7-2-11 Unlawful Interference with Enforcement Agent
7-2-12 Removal of Feces
7-2-13 Fowl Not Permitted at Large [428]

Article 7-3 **LICENSE AND VACCINATION**

7-3-1 License Fees for Dogs; Issuance of Dog Tags; Records; Penalties; Classification
7-3-2 Anti-rabies Vaccination; Vaccination and License Stations

Article 7-4 **POUND**

7-4-1 Impounding
7-4-2 Impounding and Disposing of Animals; Reclaiming Impounded Animals; Pound Fees
7-4-3 Dangerous and Fierce Animals
7-4-4 Stray Dogs
7-4-5 Proper Care, Maintenance and Destruction of Impounded Animals
7-4-6 Removing Impounded Animals

Article 7-5 **RABIES CONTROL**

7-5-1 Handling of Biting Animals; Responsibility for Reporting Animal Bites; Authority to Destroy Animals

Article 7-6 **ENFORCEMENT AGENT**

7-6-1 Powers and Duties of Enforcement Agent
7-6-2 Dogs at Large; Enter Private Property

Article 7-7 **KENNELS, LIABILITY, DANGEROUS ANIMALS, CLASSIFICATION**

7-7-1 Kennel Permit; Fee; Violation; Classification
7-7-2 Dogs; Liability
7-7-3 Killing Dangerous Animals
7-7-4 Repealed [428]

Article 7-8 **VIOLATIONS, NUISANCE AND ENFORCEMENT** [428]

CHAPTER 7 ANIMAL CONTROL

Article 7-1 DEFINITIONS [428]

1. [428] "Animal" means any species of mammalia which is susceptible to rabies, except man. Fowl, including but not limited to any species of bird or fowl, are included in the definition of "animal".

2. [428] "At large" means off the premises of owner and not under the immediate control of owner or other person physically capable of restraining the animal.

3. "Department" means the State Department of Health Services.

4. "Enforcement agent" means the Chief of Police.

5. "Impound" means the act of taking or receiving into custody by the enforcement agent any dog or other animal for the purpose of confinement in an authorized pound in accordance with the provisions of this Article.

6. "Kennel" means an enclosed, controlled area, inaccessible to other animals, in which a person keeps, harbors, or maintains five or more dogs.

7. "Livestock" means neat animals, horses, sheep, goats, swine, mules and asses.

8. "Owner" or "responsible party" means any person keeping an animal other than livestock for more than six consecutive days.

9. "Pound" means any establishment authorized for the confinement, maintenance, safekeeping and control of dogs and other animals that come into the custody of the enforcement agent in the performance of his official duties.

9.a. [150] "Rabies Vaccination Certificate" means a method of recording and duplicating rabies information that is in compliance with the County enforcement agent's licensing system and/or County enforcement agent's prescribed forms.

10. "Rabies quarantine area" means any area in which a state of emergency has been declared to exist due to the occurrence of rabies in animals in or adjacent to this area.

11. "Stray dog" means any dog four months of age or older running at large that is not wearing a valid license tag.

12. "Vaccination" means the administration of an anti-rabies vaccine to animals by a veterinarian, or in authorized pounds by employees trained by a veterinarian.

13. "Veterinarian", unless otherwise indicated, means any veterinarian licensed to practice in this state or any veterinarian employed in this state by a governmental agency.

14. "Veterinary hospital" means any establishment operated by a veterinarian licensed to practice in this state that provides clinical facilities and houses animals for dental, medical or surgical treatment. A veterinary hospital may have adjacent to it, or in conjunction with it, or as an integral part of it, pens, stalls, cages or kennels for quarantine, observation or boarding.

15. "Vicious animal" means any animal of the order carnivora that has a propensity to attack human beings without provocation, and has been so declared after a hearing before a justice of the peace or a Town Magistrate.

Article 7-2 UNLAWFUL ACTS

7-2-1 Cruelty
7-2-2 Dangerous Animals
7-2-3 Animal Noises [428]
7-2-4 Strays
7-2-5 Diseased Animals
7-2-6 Feeding Wild Coyotes
7-2-7 Control of Animals
7-2-8 Unlawful Keeping of Dogs
7-2-9 Destruction of Property
7-2-10 Dogs Not Permitted at Large
7-2-11 Unlawful Interference with Enforcement Agent
7-2-12 Removal of Feces
7-2-13 Fowl Not Permitted at Large [428]

Section 7-2-1 Cruelty

It is unlawful for any person to treat any animal cruelly. It is unlawful to beat, underfeed, overload, or abandon any animal.

Section 7-2-2 Dangerous Animals

It is unlawful to exhibit or parade animals which are ferae naturae.

Section 7-2-3 Animal Noises [428]

A. It is unlawful and a public nuisance to own, harbor or keep any animal which disturbs the peace, comfort or repose of others, or makes disturbing noises, including but not limited to, frequent, loud, habitual or repeated howling, barking, whining or other utterances, which cause unreasonable annoyance, disturbance or discomfort to others or neighbors in proximity to the premises where the animal is owned, kept or harbored.

B. A criminal violation of this section shall not be established except upon the testimony of not less than three (3) competent witnesses as to the facts constituting the violation.

Section 7-2-4 Strays

It is unlawful to permit cattle, horses, mules, swine, sheep, goats, or other livestock, or poultry to run at large; any such animal running at large in the Town shall be impounded. It is unlawful to picket or tie any animal in the right-of-ways of the Town for the purpose of grazing or feeding.

Section 7-2-5 Diseased Animals

It is unlawful to allow any domestic animal afflicted with a contagious or infectious disease to be exposed in any public place.

The enforcement agent shall arrange disposition of any diseased animal and such treatment of affected premises so as to prevent the communication and spread of the contagion or infection, except in cases where the State Health Officer or State Veterinarian is empowered to act.

Section 7-2-6 Feeding Wild Coyotes

It is unlawful to feed wild coyotes.

Section 7-2-7 Control of Animals

It is unlawful for the owner of an animal which has bitten a person, or which is dangerous or vicious, to allow the animal off the premises of the owner.

Section 7-2-8 Unlawful Keeping of Dogs

It is unlawful for a person to keep, harbor or maintain a dog within the Town except as provided by the terms of this ordinance.

Section 7-2-9 Destruction of Property

It is unlawful for the owner of an animal to allow the animal to destroy or impair any property belonging to someone other than the owner. The enforcement agent or his delegate is authorized to determine, upon the complaint of any person, whether the owner of an animal is in violation of this section and upon making a determination the enforcement agent or his delegate must proceed as provided in Section 7-4-1.

Section 7-2-10 Dogs Not Permitted at Large

It is unlawful to allow a dog to run at large on public streets, in public parks, on school property, on public property, on private property other than the property of its owner, or on any combination of property. A dog is not at large if:

A. It is restrained by a leash, chain, rope or cord of not more than six feet in length and of sufficient strength to control the dog.

B. It is used for control of livestock, or while being used or trained for hunting, or being exhibited at or trained for, a kennel club event or while engaged in races approved by the Arizona Racing Commission.

C. It is actively engaged in dog obedience training, accompanied by and under the control of an owner or trainer, provided that the person training the dog has in possession a dog leash of not more than six feet in length and of sufficient strength to control the dog, and further, that the dog is actually enrolled in or has graduated from a dog obedience training school; the person accompanying the dog must show any peace officer documentary evidence of attendance or training.

D. It is within a suitable enclosure which confines the dog.

Section 7-2-11 Unlawful Interference With Enforcement Agent

It is unlawful for any person to interfere with the enforcement agent in the performance of his duties.

Section 7-2-12 Removal of Feces

It is unlawful for any person to fail to provide for the sanitary removal of feces defecated by a dog or cat owned or controlled by that person.

Section 7-2-13 Fowl Not Permitted at Large [428]

It is unlawful to allow fowl to be at large in the Town.

Article 7-3 LICENSE AND VACCINATION

7-3-1 License Fees for Dogs; Issuance of Dog Tags; Records; Penalties; Classification
7-3-2 Anti-rabies Vaccination; Vaccination and License Stations

Section 7-3-1 License Fees for Dogs; Issuance of Dog Tags; Records; Penalties; Classification

A. Each dog four months of age or over that is kept, harbored or maintained within the boundaries of the Town for at least thirty consecutive days of each calendar year must be licensed by the county, pursuant to A.R.S. 24-367. The licensing period shall not exceed the period of time for revaccination as designated by the state veterinarian. The fee shall be the amount set by resolution. A penalty not to exceed four dollars shall be added to the license fee in the event that application is made subsequent to the date on which the dog is required to be licensed under the provisions of this ordinance. This penalty shall not be assessed against applicants who furnish adequate proof that the dog to be licensed has been in their possession less than thirty consecutive days.

B. Durable dog tags shall be provided. Each dog licensed under the terms of this ordinance shall receive, at the time of licensing, a tag on which shall be inscribed the name of the county, the number of the license, and the date on which it expires. The tag must be attached to a collar or harness which must be worn by the dog at all times, except dogs used for control of livestock, or while being exhibited at or trained for a kennel club event, or dogs while engaged in races approved by the Arizona Racing Commission. Such dogs while being transported to and from such events, need not wear a collar or harness with a valid license attached provided that they are property vaccinated, licensed and controlled. Whenever a dog tag is lost, a duplicate tag shall be issued upon application by the owner and payment of a fee.

C. [189] The County Board of Supervisors may set license fees that are lower for dogs permanently incapable of procreation. An applicant for a license for a dog claimed to be incapable of procreation shall furnish adequate proof satisfactory to the

county enforcement agent that such a dog has been surgically altered to be permanently incapable of procreation.

D. [189] Any person who fails within fifteen days after written notification from the enforcement agent to obtain a license for a dog required to be licensed, or counterfeits or attempts to counterfeit an official dog tag, or remove such tag from any dog for the purpose of willful and malicious mischief or places a dog tag upon a dog unless the tag was issued for that particular dog is guilty of a Class 2 misdemeanor.

Section 7-3-2 Anti-rabies Vaccination; Vaccination and License Stations

A. Before a license is issued for any dog, the owner must present a vaccination certificate signed by a veterinarian stating the owner's name and address and giving the dog's description, date of vaccination, and type, manufacturer, and serial number of the vaccine used and date revaccination is due. A duplicate of each rabies vaccination certificate issued shall be transmitted to the enforcement agent on or before the tenth day of the month following the month during which the dog was vaccinated. No dog shall be licensed unless it is vaccinated in accordance with the provisions of this ordinance and the regulations promulgated hereunder.

B. The county enforcement agent shall make provisions for vaccination clinics as deemed necessary. The vaccination shall be performed by a veterinarian.

Article 7-4 POUND

7-4-1	Impounding
7-4-2	Impounding and Disposing of Animals; Reclaiming Impounded Animals; Pound Fees
7-4-3	Dangerous and Fierce Animals
7-4-4	Stray Dogs
7-4-5	Proper Care, Maintenance and Destruction of Impounded Animals
7-4-6	Removing Impounded Animals

Section 7-4-1 Impounding

The enforcement agent or his delegate is authorized to determine whether an animal is in violation of this Chapter; if the animal is in violation of the provisions of this chapter, the enforcement agent or his delegate must cause the animal to be impounded in a suitable place, including either the Maricopa County Dog Pound by arrangement with the County, or a private veterinary hospital by arrangement with the veterinarian, at the expense of the owner of the animal. The period of the impoundment for the first offense shall be

five days and for each succeeding offense an additional five days. The owner, if known, must be notified of such impoundment.

Section 7-4-2 Impounding and Disposing of Animals; Reclaiming Impounded Animals; Pound Fees

A. All animals impounded shall be given proper care and maintenance. Each animal impounded shall be kept and maintained at the pound for a minimum of seventy-two hours unless claimed by its owner. If an animal is not claimed within the impoundment period, the enforcement agent shall take possession and may place the animal for sale or may dispose of the animal in a humane manner. Any person may purchase such an animal upon expiration of the impoundment period, provided such person pays all pound fees and complies with the licensing and vaccinating provisions of this ordinance. If such animal is to be used for medical research, no license or vaccination shall be required. The enforcement agent may destroy impounded sick or injured animals whenever such destruction is necessary to prevent such animal from suffering or to prevent the spread of disease.

B. Any impounded animal may be reclaimed by its owner or such owner's agent provided that the person reclaiming the animal furnishes proof of right to do so and pays all pound fees. If the animal is not reclaimed within the impoundment period, the Maricopa County enforcement agent shall take possession and may place the dog or cat for sale or may dispose of the animal in a humane manner. Any person purchasing such an animal shall pay all pound fees.

Section 7-4-3 Dangerous and Fierce Animals

In the judgment of the enforcement agent, if any dog at large or other dangerous or fierce animal, or one that is a threat to human safety cannot be safely impounded, it may be immediately slain.

Section 7-4-4 Stray Dogs

Any stray dog shall be impounded.

Section 7-4-5 Proper Care, Maintenance and Destruction of Impounded Animals

A. All impounded animals shall be given proper and humane care and maintenance.

B. Any dog or cat, destroyed while impounded in a county, city or Town pound, shall be destroyed only by the use of one of the following:

(1) Sodium pentobarbital or a derivative of sodium pentobarbital,

(2) T-61 Euthanasia solution or its generic equivalent.

C. If an animal is destroyed it shall be done by a licensed veterinarian or in accordance with procedures established by the state veterinarian pursuant to Section 24-153 of Arizona Revised Statutes.

Section 7-4-6 Removing Impounded Animals

No person may remove or attempt to remove an animal which has been impounded or which is in the possession of the enforcement agent except in accordance with the provisions of this ordinance.

Article 7-5 RABIES CONTROL

7-5-1 Handling of Biting Animals; Responsibility for Reporting Animal Bites; Authority to Destroy Animals

Section 7-5-1 Handling of Biting Animals; Responsibility for Reporting Animal Bites; Authority to Destroy Animals

A. An unlicensed or unvaccinated dog or a cat that bites any person must be confined and quarantined in an authorized pound or, upon request of and at the expense of the owner, at a veterinary hospital for a period of not less than seven days. A dog properly licensed and vaccinated pursuant to this ordinance, that bites any person may be confined and quarantined at the home of the owner or wherever the dog is harbored and maintained with the consent of and in a manner prescribed by the enforcement agent.

B. Any animal other than a dog or cat that bites any person must be confined and quarantined in a pound or, upon the request of and at the expense of the owner, at a veterinary hospital for a period of not less than fourteen days, provided that livestock shall be confined and quarantined for the fourteen-day period in a manner regulated by the Arizona Livestock Board. If the animal is a caged rodent, it may be confined and quarantined at the home of the owner or where it is harbored or maintained for the required period of time, with the consent of and in a manner prescribed by the enforcement agent.

C. Any wild animal that bites any person may be killed and submitted to the enforcement agent or his deputies for transmission to an appropriate diagnostic laboratory.

D. Whenever an animal bites any person, the incident must be reported to the enforcement agent immediately by any person having direct knowledge.

E. The county enforcement agent may destroy any animal confined and quarantined pursuant to this section prior to the termination of the minimum confinement period for laboratory examination for rabies if:

1. Such animal shows clear clinical signs of rabies, or

2. The owner of such animal consents to its destruction.

F. Any animal subject to licensing under this Article found without a tag identifying its owners shall be deemed unowned.

G. The enforcement agent shall destroy a vicious animal upon an order of a Justice of the Peace or a Town Magistrate. A Justice of the Peace or Town Magistrate may issue such an order after notice to the owner, if any, and a hearing.

Article 7-6 ENFORCEMENT AGENT

7-6-1 Powers and Duties of Enforcement Agent
7-6-2 Dogs at Large; Enter Private Property

Section 7-6-1 Powers and Duties of Enforcement Agent

A. The enforcement agent shall:

1. Enforce the provisions of this ordinance.

2. Issue citations for the violation of the provisions of this ordinance. The procedure for the issuance of notices to appear shall be as provided for peace officers in Arizona Revised Statutes 13-3903, except that the enforcement agent shall not make an arrest before issuing the notice. The issuance of citations pursuant to this section shall be subject to the provisions of A.R.S. 13-3899.

3. Be responsible for declaring a rabies quarantine area within area of jurisdiction. When a quarantine area has been declared, the enforcement agent shall meet with the state veterinarian and representatives from the Department of Health Services and the Game and Fish Department to implement an emergency program for the control of rabies within said area. Any regulations restricting or involving movements of livestock within said area shall be subject to approval by the state veterinarian.

B. The enforcement agent may designate deputies.

Section 7-6-2 Dogs at Large; Enter Private Property

Any dog at large shall be apprehended and impounded by an enforcement agent.

A. The agent has the right to enter upon private property when necessary to apprehend any dog that has been running at large. Entrance upon private property shall be in reasonable pursuit of the dog and shall not include entry into a domicile unless invited by the occupant.

B. An agent may issue a citation to the dog owner when the dog is at large. The procedure for the issuance of notice to appear shall be as provided for peace officers in Section 13-3903, A.R.S. except the enforcement agent shall not make an arrest before issuing the notice. The issuance of citations pursuant to this Article shall be subject to provisions of Section 13-3899, A.R.S.

Article 7-7 KENNELS, LIABILITY, DANGEROUS ANIMALS, CLASSIFICATION

7-7-1 Kennel Permit; Fee; Violation; Classification
7-7-2 Dogs; Liability
7-7-3 Killing Dangerous Animals
7-7-4 Repealed [428]

Section 7-7-1 Kennel Permit; Fee; Violation; Classification

A. A person operating a kennel must obtain a permit issued by the Board of Supervisors of Maricopa County unless each individual dog is licensed.

B. The annual fee for the kennel permit shall be set by resolution.

C. A dog remaining within the kennel is not required to be licensed individually. A dog leaving the controlled kennel conditions shall be licensed except if the dog is only being transported to another kennel which has a permit issued by the Board of Supervisors of Maricopa County.

D. A person who fails to obtain a kennel permit under this section is subject to a penalty of twenty-five dollars in addition to the annual fee.

E. A person who knowingly fails within thirty days after written notification from the county enforcement agent to obtain a kennel permit is guilty of a Class 2 misdemeanor.

Section 7-7-2 Dogs; Liability

The owner of a dog is responsible for all injuries to persons or property, or both, caused by the dog at large.

Section 7-7-3 Killing Dangerous Animals

The members of the police department are authorized to kill any dangerous animal when it is necessary for the protection of any person or property.

Section 7-7-4 Repealed [428]

Article 7-8 VIOLATIONS, NUISANCE AND ENFORCEMENT [428]

A. Violations of this chapter are in addition to any other violation enumerated within the Town Codes and ordinances and state law and in no way limits the civil or criminal penalties, actions or abatement procedures which may be taken by the Town for any violation of this chapter.

B. Violations of this chapter may be prosecuted by citation for civil sanctions, with a maximum sanction not to exceed two hundred fifty dollars ($250.00), or by criminal complaint punishable in accordance with the general penalties of § 1-9-2 of this Code.

C. A violation of this chapter is also declared to be a public nuisance which may be abated as provided in Article 8-5 of this Code or in any other manner authorized by law.

D. In addition to any other sanction or penalty authorized by law or ordinance for civil or criminal prosecution of violations herein the court may issue an order which includes but is not limited to any of the sanctions and remedies in Subsection E of this section to the extent authorized by law, in addition to issuing an order permitting the Town to abate the condition giving rise to the violation, with the reasonable costs of any such abatement the responsibility of the person found responsible or guilty of the violation.

E. As a part of any order issued pursuant to this chapter, a court, or officer pursuant to Article 8-5 of this Code, shall have the authority to order the following remedies to the extent such order is within powers authorized by law:

    1. Obedience training for the animal (s) in question;

2. Muzzling of an animal while on or off the property of the owner;

3. Confinement of an animal indoors;

4. Confinement of an animal in a secure enclosure;

5. Reduction of the number of animals kept at any one location;

6. Removal of an animal from the custody of the animal's owner or custodian in cases of neglect or cruelty;

7. Sterilization of an animal;

8. Ban on keeping other animals in the Town;

9. Placement of warning sign(s) in prominent place(s) on premises where an animal is kept, as directed in the order, easily readable by the public;

10. Acquisition of liability insurance to protect against damage to persons or property;

11. Destruction of an animal;

12. Spaying, neutering, defanging, declawing, testing or quarantine of an animal;

13. Mediation or arbitration with the expenses borne as specified in the order;

14. Any other measure or sanction designed to eliminate a violation, prevent future violations or protect the health and safety of the public.

F. A civil citation issued hereunder will be substantially in the same form as the Arizona traffic citation form currently in use, processed in accordance with the Arizona rules of court for civil traffic violation cases.

FOOTNOTES

136 Ordinance #252 - 10/23/86
150 Ordinance #268 - 7/9/87
189 Ordinance #317 - 9/27/90
428 Ordinance #428 - 11/14/96

CHAPTER 8 SAFETY, HEALTH, SANITATION AND NUISANCE

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CHAPTER 8 SAFETY, HEALTH, SANITATION AND NUISANCE

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Section 8-1-1 Accumulation of Litter and Junk [517]

A. Accumulation of Litter: It is unlawful for any person to throw, deposit, or allow to Accumulate, any glass, rubbish, waste, construction debris or other refuse upon the streets, alleys, highways, public parks or other property of the Town, or upon any private property.

B. It is unlawful to store or keep any articles or materials which may be classed as junk adjacent to or in close proximity to any school, church, public park, public grounds, business building, or residence without first providing proper and tight buildings or containers for the storage of the junk or adequate screening such that the junk is not visible from adjoining public or private property. "Junk" means worn-out and discarded material which may be turned to some use; articles commonly gathered up and sold to be converted to another product, either of the same or a different kind.

C. The property owner is responsible for the maintenance and clean up of:

1. Private property, as specified in subsection a above, and

2. the right of way area between the property line and the curb or to the edge of the pavement where no curb exists.

Section 8-1-2 Blasting Restricted

It is unlawful for any person to blast rock or stone with any explosive substance or compound without the written consent of the Town Engineer.

Section 8-1-3 Throwing or Shooting of Arrows, Stones, and Other Missiles

It is unlawful for any person to throw or shoot any object, arrow, stone, or other projectile, by hand or by any other means in a manner dangerous to life, limb, or property.

Section 8-1-4 Unguarded Pits [517]

It is unlawful for any person to allow any open, unguarded, or abandoned pit, well, excavation or unused basement or hole that may constitute a threat to public health, safety and welfare; or any well, cellar, pit, or other excavation of more that two (2) feet in depth on any lot.

Section 8-1-5 Warnings Required

It is unlawful to dig any hole, drain or ditch in any right-of-way without providing warning lights and barricades which comply with the terms of the Manual on Uniform Traffic Control Devices.

Section 8-1-6 Unsafe Building or Structure

It is unlawful for any person to erect, repair, or alter any building or structure in violation of the provisions of the Town Code relating to materials and manner of construction of buildings and structures. It is unlawful for any person to maintain or allow any building or structure so old, dilapidated or out of repair as to be dangerous, unsafe, unsanitary, or otherwise unfit for human use.

Section 8-1-7 Disposal of Construction and Repair Debris

It is unlawful to fail to dispose of debris from construction, reconstruction or repair of a structure.

Section 8-1-8 Damage to Property

A. It is unlawful for any person, or persons, to damage in any manner or attempt to damage or tamper with any pipe lines, water hydrants, street lamps or lights, or the fixtures and appliances belonging upon any of the poles or other objects for use in connection with the lighting of the streets of the Town or any water pipes, hydrants, or any appliances pertaining to the water or sewer works, or any other property belonging to the Town.

B. It is unlawful for any person to deface, walk, ride, or drive upon or over any sidewalk or street crossing composed of or containing cement, during the construction thereof, or before the same is thrown open to public use.

C. It is unlawful for any person to damage any road, street or bridge by heavy vehicles, or by malicious destruction, or to perform an act that will result in damage to the road, street or bridge.

Section 8-1-9 Obstruction of Streets and Sidewalks

A. Obstruction of Traffic. It is unlawful to stand, sit, or engage in any activity whatever on any public street, sidewalk, bridge, or public ground in a manner to prevent or obstruct the free passage of pedestrian or vehicular traffic, or hinder free ingress or egress to or from any public place or place of business. It is unlawful for any person to erect or maintain upon the street or sidewalk a stand, movable booth, or wheel vehicle for the purpose of trade or barter, except under license or contract with the Town.

B. Obstruction of View. It is unlawful for any person to maintain or allow any tree, hedge, billboard, or other obstruction which prevent persons driving vehicles on public streets, alleys or highways from obtaining a clear view of traffic when approaching an intersection or pedestrian crosswalk.

C. Dangerous Construction. It is unlawful for any person to maintain or allow any signs, billboards, awnings or other similar structures over or near streets, sidewalks, public grounds or places frequented by the public, so situated or constructed as to endanger the public safety.

Section 8-1-10 Water-Flow Upon Streets Prohibited [517]

It is unlawful to willfully or negligently permit or cause the escape or flow of water or other liquid upon a right-of-way in such quantity, so as to impede vehicular or pedestrian traffic, to create a hazardous condition for such traffic, or, to cause damage to public or private streets within the Town. To “Negligently permit” Includes the failure or neglect to properly operate or maintain any water facility or device, including, but not limited to,

swimming pools, spas, ponds, fountains, sprinklers, hoses, pipes, ditches, standpipes, berms, irrigation structures or equipment, valves or gates.

Section 8-1-11 Obstruction of Watercourses (Repealed 418 6/13/96)

Section 8-1-12 Weeds

A. Every person owning, occupying, or controlling any premises fronting on any street, alley, or public place in the Town shall cut or cause to be cut all grass and weeds growing on such frontage as often as the same may require cutting, to the end that said grasses or weeds shall not attain a height of over six inches, and every person who shall permit grass or weeds to grow to a height exceeding six inches between the property line of such property and the street shall be guilty of a violation of this Code.

B. Every person owning, occupying, or controlling any lot or lots within the Town shall cause all weeds and other noxious growths to be cut thereon as often as the same may require cutting to prevent the same from attaining a height of over six inches, and every person owning, occupying or controlling any lot or lots within the Town who shall permit on such lot or lots weeds or other noxious growth to grow to a height exceeding six inches, or who shall permit any rubbish, dirt, debris, or other matter to accumulate upon such lot or lots, shall be guilty of a violation of this Code.

Section 8-1-13 Corner Vision [369] [456]

As an aid to safe movement of vehicles at and near street intersections and in order to promote more adequate protection for the safety of children, pedestrians, and operators of vehicles, there shall be limitations on the height of fences, walls, gateways, ornamental structures, hedges, shrubbery and other fixtures, construction and planting on all corner lots.

A. Such barriers to clear, unobstructed vision at corners of intersecting streets shall be limited to a height of not over two (2) feet above the street elevation of the nearest edge of pavement, for a distance of fifty (50) feet along both the front and side lot lines, measured as indicated below.

B. Within the triangle formed by connecting the ends of the respective fifty (50) foot distances as illustrated in figure 8-1-13, all the structures, fixtures, construction, hedges, shrubbery and other plantings shall be limited to a height of two (2) feet above the elevation of the nearest edge of pavement at the said intersecting streets.

C. Paragraphs A and B of this Section notwithstanding, trees may be located within the fifty (50) foot clear distance if their trunks are no more than eight (8) inches in diameter at a height of twelve (12) inches from the ground, and the foliage is cleared to a height of eight (8) feet above the ground. [456]

D. In interpreting this ordinance, the diagrams shown in Figure 8-1-13 shall be utilized to determine the fifty (50) foot segments and the triangle within which structures are limited in height. In any situation not specifically covered in these diagrams, this Section shall be interpreted in a manner to provide maximum sight distance at the intersection.

E. This Section is applicable to that area within the property, but the property owner is also responsible for that area between the property line and the curb, and to the pavement where no curb exists. [456]

F. A sight distance triangle shall be eligible for modification by the Town Engineer if one or both of the intersecting streets are controlled by stop signs or traffic signals and no decrease in sight distance would occur as a result of the modification. [456]

Section 8-1-14 Landscaping [369] Repealed by Ordinance #448, 1/22/98

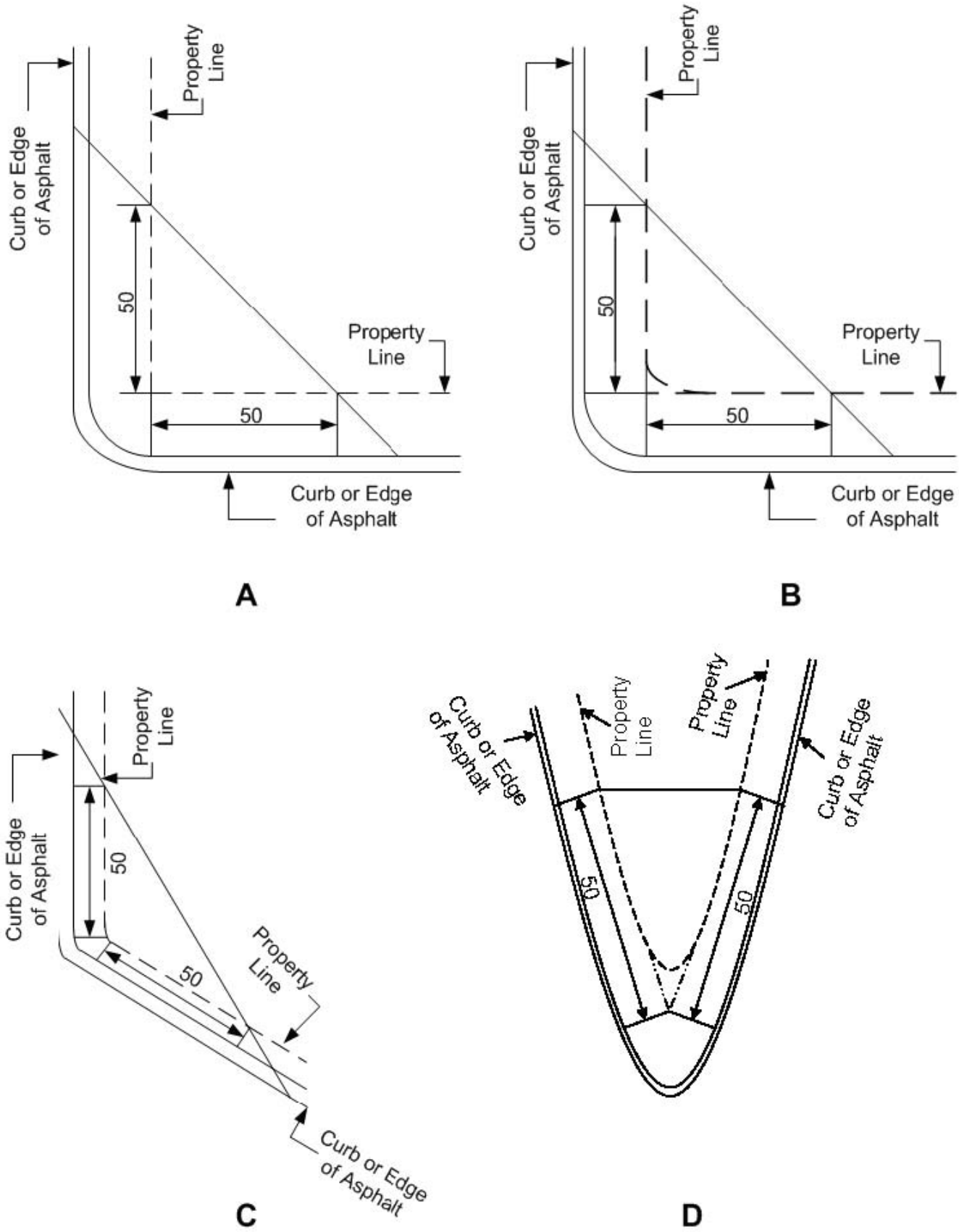
Section 8-1-15 Public Utility Walls [396]

A. Contrary to any terms in the Paradise Valley Zoning Ordinance, it is permissible for electric utility companies to surround electrical substations with walls eight feet high, measured from finished grade.

B. all walls built under the terms of Section 8-1-15 must comply with the terms of Section 8-1-13.

C. These facilities, although necessary for the health, safety and welfare of the citizens, are a hazard to the citizens and especially the children of the community, and are considered by most to be unsightly.

Figure 8-1-13


Curb or Edge of Asphalt
Property Line
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D

Article 8-2 HEALTH

8-2-1 Health Officer
8-2-2 Flies, Mice, and Rats
8-2-3 Power to Enter
8-2-4 Disinfection and Fumigation of Contaminated Buildings
8-2-5 Superseded - See Article 10-2 of the Town Code
8-2-6 Pollinating Trees [368]

Section 8-2-1 Health Officer

The Town Manager is Health Officer of the Town.

Section 8-2-2 Flies, Mice, and Rats

It is unlawful to willfully cause or negligently permit any cesspool, vault pit or similar structure to contain animal manure, garbage, trash, litter, rags or any other substance in which flies, mosquitoes, mice, and rats may breed or multiply, unless the structure is protected in a manner which prevents the attraction, breeding and multiplying of flies, mosquitoes, mice and rats.

Section 8-2-3 Power to Enter

The Health Officer or his representative shall, after reasonable notice to the owner or occupant, have the power to enter upon all public and private property or premises to examine any nuisance, source of filth, or cause or source of sickness or disease found therein, and may require the owner or occupant at the owner's or occupant's own expense to remove the same. For the purpose of this Section the power to enter upon private property shall be restricted to daylight hours.

Section 8-2-4 Disinfection and Fumigation of Contaminated Buildings

Any person owning, leasing or controlling any house, hotel, inn or rooming house in the Town who shall lease, rent or allow to be occupied any room or rooms in a house, hotel, inn or rooming house to or by any person infected with the disease of consumption or tuberculosis shall, within two days after the vacating of the leased area by an infected person, disinfect and fumigate the area under the supervision of the Health Officer, or obtain, within two days, a certificate from a practicing physician to the effect that the area has been properly disinfected and fumigated. Any person obtaining such a certificate shall exhibit it to the Health Officer upon demand.

Section 8-2-5 Superseded - See Article 10-2 of the Town Code

Section 8-2-6 Pollinating Trees [368]

No person shall plant any male mulberry tree (Morus Alba) or olive tree (Olea Europea) in the Town, unless it is one of the pollenless varieties of such trees.

ARTICLE 8-3 SANITATION [503]

Section 8-3-1 DEFINITIONS:

For the purpose of this chapter, the following words and phrases shall have the meanings respectively ascribed to them by this section:

1. *Animal waste* means any unsanitary waste from the raising, containing, maintaining or grooming of animals from stables, kennels, pet pens, chicken coops, or places of residence.

2. *Brushable material* means tree limb and shrubbery clippings three (3) feet in length or longer and up to three and one-half (3 1/2) inches in diameter

3. *Commercial establishment* means any public or private place, building or enterprise utilized for the conduct of business or public assembly.

4. *Contractor* means a person, persons or corporate entity engaged in the business of collecting, removing, hauling, or transporting commercial solid waste, recyclables or special materials in the Town for disposal or any other purpose.

5. *Commercial solid waste* means all garbage and trash generated by commercial establishments, except special materials and hazardous wastes, including resorts, hotels, restaurants, schools, and churches.

6. *Garbage* means all putrescible wastes, except sewage and body wastes, including all organic wastes that have been prepared for or intended to be used as food or have resulted from the preparation and consumption of food, including all such substances from all public and private establishments and residences.

7. *Hazardous waste* means any chemical, compound, mixture, substance, or article that is designated by the United States Environmental Protection Agency, the Arizona Department of Environmental Quality or appropriate agency of the state to be "hazardous," as that term is defined by or pursuant to federal or state law. Hazardous waste includes but is not limited to medical wastes, pathogenic materials, toxic materials, insecticides, motor oils, paints, radioactive material, explosives, flammable and corrosive materials.

8. *License* means a license issued under the terms of this Article to a provider of solid waste and recyclable removal services.

9. *Licensee* means a person or entity to which a License is issued under this article.

10. *Liquid Waste* means septic tank or cesspool pumpings.

11. *Pathogenic liquid or solid waste* means any liquid or solid waste causing or capable of causing disease.

12. *Putrescible waste* means waste which is capable of being decomposed by microorganisms with sufficient rapidity as to cause nuisances from odors or gases and capable of providing food for or attracting birds, insects, snakes, rodents or animals capable of transferring a disease bacterium or virus from one organism to another.

13. *Recyclable material* means any post-consumer material, including but not limited to, metals, plastics, glass or paper products that may be collected, separated, cleaned, treated or reconstituted and returned to the economic stream in the form of materials or products.

14. *Refuse* means all putrescible and nonputrescible solid wastes, except human bodily wastes, including garbage, trash, rubbish, ashes, street cleanings and dead animals; abandoned, wrecked or junked vehicles or parts thereof; brushable material, and containable rubbish, construction waste.

15. *Solid waste* means refuse, debris, and all other discarded materials.

16. *Town* means the Town of Paradise Valley, acting through the Town Manager or other authorized official.

17. *Trash* means all non-putrescible solid wastes consisting of both combustible and non-combustible solid waste material.

18. *Uncontained Bulk Rubbish* means wooden and cardboard boxes, crates, appliances, large household items, and other items which by size and shape are not readily containable.

Section 8-3-2 LICENSES REQUIRED; CONDITIONS

A. Collection of commercial and residential solid waste and recyclables within the Town shall only be done by a contractor licensed by the Town to perform such work. Applications for a new license or a renewal license shall include such information as may be requested by the Town including:

   (1) The identity of the applicant. The contractor's application shall include the name, business and residence addresses of all owners, partners, general

managers and principal officer, as well as business references and such other information as deemed necessary and evidence that the applicant is in good legal standing, where relevant.

(2) The Town must have satisfactory evidence that the contractor possesses the necessary financial, legal, administrative, and technical ability to collect, transport and dispose of commercial and residential solid waste and recyclables in a manner satisfactory to the Town and in conformity with the state or county department of health laws, rules and regulations.

B. The contractor desiring a license to collect commercial and residential solid waste and recyclables shall submit an application in a form approved by the Town to the Town with an annual five hundred ($500.00) dollar license fee.

C. Any license granted by the Town shall be nontransferable and may be suspended or canceled by the Town upon failure or refusal of a licensee to comply with the provisions of this chapter and after notice and hearing respecting the same. The license shall run for the fiscal year commencing July 1 and ending June 30. Application for renewal shall be made at least thirty (30) days prior to expiration of current license. Fees may be prorated monthly on licenses issued during the fiscal year.

D. Any License granted is subject to the general provisions of this Article in effect at the time the License is granted. If there is a conflict between the terms of the License and other codes and ordinances of the Town, the License shall control.

E. The Town may modify license requirements from time to time to reflect changing conditions or technology.

F. The Town reserves the right to limit the number of licenses granted, to establish boundaries for license service areas, and/or to centrally contract for any and all solid waste collection and recycling services provided within the Town.

G. The area that may be served through License shall be the entire area within the corporate limits of the Town of Paradise Valley. The Town may grant a License for the entire Town or for such portion or portions of the Town as may be specified by the License.

Section 8-3-3 INSURANCE AND SURETY BOND

A. Upon the execution of a License, a Licensee shall file with the Town, and maintain in effect throughout the term of the License, insurance policies issued by an insurer licensed to conduct business in the State of Arizona, insuring with respect to the operation and maintenance of the system, comprehensive general and automobile liability coverage, including but not limited to:

(1) blanket contractual liability,
(2) completed operations liability,
(3) broad form property damage endorsement, including but not limited to, coverage for explosion, collapse and underground incidents, and
(4) automobile non-ownership liability.

B. The Town expressly reserves the right to modify any insurance and liability requirements when it deems such action necessary to protect the public interest and welfare.

C. This insurance shall include coverage which meets or exceeds the following minimum amounts, or exposure to loss:

(1) For bodily injury, including death, in the amount of $2,000,000 combined single limit;
(2) For property damage in the minimum amount of $1,000,000;
(3) Comprehensive automobile liability for bodily injury of $2,000,000 combined single limit; and
(4) Worker's compensation coverage as required by the laws, rules and regulations of the State of Arizona.

D. Any insurance policy obtained by Licensee in compliance with this Section shall include the Town as an additional insured, shall be primary, and must be approved by the Town Risk Manager/Town Attorney. Such insurance policy shall be filed and maintained with the Town during the term of the License. Licensee shall immediately advise the Town of any litigation that would affect this insurance or reduce the amount of coverage. Any insurance or self-insured coverage carried by the Town shall be excess coverage and not contributory insurance to that provided by a Licensee.

E. Neither the provisions of this Section nor any damages recovered by the Town thereunder shall be construed to limit the liability of Licensee to the Town for damages.

F. All insurance policies shall contain the following endorsement: "This insurance policy may not be canceled by the insurance carrier, nor may the insurance carrier fail to renew this policy until thirty (30) days after receipt by the Town of Paradise Valley of the insurance carrier's written notice of its intention."

G. Licensee shall be solely responsible for all premiums due and payable with respect to the insurance coverage required.

Section 8-3-4 INDEMNIFICATION BY LICENSEE

Each Licensee shall, at its sole expense, fully indemnify, defend, and hold harmless the Town, and in their respective capacities, the officers, agents, and employees of the Town, for, from, and against any and all claims, suits, actions, liability and judgments for damages for actual or alleged injury to persons or property, including loss of property due to an occurrence, whether or not such property is physically damaged or destroyed, wherein such injury or loss arises in whole or in part through the acts or omissions of the Licensee or of the Town, of their officers, agents, employees or contractors in connection with services pursuant to their license.

Section 8-3-5 PERMITS REQUIRED FOR REFUSE SERVICE; EXCEPTIONS

No person shall engage in, operate as, or represent itself to the public as one who collects, transports, disposes of, or recycles residential, commercial or industrial refuse generated within the city, except as otherwise expressly provided in this article, without having first obtained a valid license pursuant to the provisions of Article 8-3 of this Code.

Section 8-3-6 VEHICLE REQUIREMENTS:

A. All vehicles used for refuse collection within the Town must be inspected and provide certification that they meet the following minimum requirements:

(1) All vehicles must be in good condition and repair. The bodies shall be of readily cleanable construction, watertight and metal-lined to the full width and height of the body, with all seams welded.

(2) Vehicles shall be maintained and operated in a clean and neat manner so as to prevent refuse from spilling, leaking and blowing. All vehicles shall have enclosed bodies. Where spillage does occur, is shall be picked up immediately by the collector and returned to the vehicle or container.

(3) The outside of each vehicle must be clearly identified by the name and telephone number of the contractor operating the vehicle.

(4) Any open-top roll off container must have a cover that prevents refuse or contents from spilling or flowing onto the roadway.

B. Unless there is a specific need for other types of collection equipment, all residential solid waste and recyclable collection vehicles shall be of the automated side loading design, intended to service 60 to 100 gallon wheeled containers.

Section 8-3-7 RESIDENTIAL COLLECTION; SERVICES

A. The contractor shall collect solid waste and recyclable materials from residences in accordance with the provisions of this Article.

B. The contractor shall offer to all customers twice-per week collection of solid waste and at least semi monthly collection of recyclables. The Town may at its option, make application to appropriate state and/or Maricopa County agency for a waiver of twice weekly solid waste collection for areas in which recyclables are collected weekly, such that solid waste and recyclables will each be collected once weekly.

Section 8-3-8 RESIDENTIAL SOLID WASTE AND RECYCLABLE CONTAINERS; SPECIFICATIONS; CARE; PLACEMENT

A. All solid waste and recyclable containers must conform to the following requirements.

1. Contractors shall provide each owner, agent, or occupant of every dwelling where refuse accumulates a suitable and approved container for receiving and storing solid waste.

2. Solid waste shall be stored in durable, nonabsorbent, noncombustible, watertight, and easily cleanable containers of rust resistant metal, rubber, plastic or other similar material, with close fitting covers and having adequate handles and wheels to facilitate handling.

3. The size and shape of residential containers shall be determined by the contractor but shall have a capacity of not less than thirty (30) nor more than one-hundred (100) gallons.

4. Containers for the storage of solid waste shall be maintained in such a manner as to prevent the creation of a nuisance or a menace to public health. Containers that are broken or otherwise fail to meet the requirements of the rules shall be promptly replaced, by the contractor, with an approved container.

5. It is the responsibility of the owner, agent, or occupant of every dwelling or commercial structure where refuse accumulates to maintain the solid waste container in a clean and sanitary condition, free from odors.

6. Containers may be used only for the purpose of collecting and storing solid waste and recyclable materials.

7. Residential solid waste and recycling generators with containers shall place containers at the curb line in front of their residences on the scheduled collection days. Containers shall not be placed for collection

before 6:00 p.m. on the day preceding the date of collection, and after the containers are emptied, they shall be removed from the curb line on the day of collection. Containers shall be stored, between collection days, in such a manner that they are not readily visible from the street.

8. To ensure optimal use of containers and auxiliary collection equipment and/or prevent the injury or harm to those collecting refuse or recyclables, the contractor may set weight limitations and/or require waste generators regularly exceeding the weight limitations to purchase additional containers as may be reasonable.

B. Failure of the owner or occupant to comply with the requirements of this section will subject the owner or occupant of the property to penalties for violation of the Town Code.

C. The abatement procedure for a resident, owner or occupant who fails to comply with the requirements of this section is defined in section 8-5-2 of the Town Code.

Section 8-3-9 FREQUENCY OF COLLECTION; HOURS

A. The frequency of solid waste collection shall be in accordance with the regulations of the state or county agency with jurisdiction.

B. Collection is allowed on weekdays from 6:00 A.M. to 6:00 P.M. Commercial waste removal service is also allowed on weekends and holidays. The Town reserves the right to further regulate days of collection to achieve more efficient service routing within the Town.

Section 8-3-10 OWNER OR OCCUPANT REQUIREMENTS

A. All owners, or residents if the property is not owner occupied, of real property within the Town limits shall obtain solid waste collection services in accordance with the requirements of this Article from a provider licensed by the Town pursuant to this Article.

B. Nothing in this section requiring use of a licensed solid waste collection provider shall preclude the following:

1. Collection of usable clothing, furniture and other household items by recognized charities.

2. Removal of tree trimmings and other landscaping materials by property owners, occupant or property owner's or occupant's agents.

3. Removal of recyclable materials such as aluminum cans, newsprint and other paper, glass, metal and plastic by the property owner, occupant, or agents for

deposit at a recycling center or donation through suitable recycling containers in public areas.

4. Removal of unserviceable furniture and appliances, and construction debris by property owners or occupants in vehicles owned or leased by them or family members.

5. Removal of construction and demolition debris by building, renovation or landscaping contractors using their own vehicles or by haulers specializing in this service.

6. One-time collection no more than once each calendar quarter for major housecleaning and when vacating a residence.

Section 8-3-11 ANIMAL WASTE

A. Wastes from animals or other pets shall be disposed of in the following manner:

1. Wastes from small animals or pets shall be placed in a plastic bag, securely tied and then placed in a solid waste container.
2. Wastes from larger animals, such as horses and other livestock kept as pets or and is placed in an approved plastic bag, securely tied and then placed in a solid waste container.
3. All animal wastes shall be removed from pens, stables, yards, cages and other enclosures and disposed of in the manner prescribed above or composting as often as necessary to prevent occurrence of a health hazard or public nuisance as defined by 8-4-1 of the Town Code.
4. All animal owners and custodians shall immediately clean up and properly dispose of wastes left by their animals on any public street, sidewalk, right-of-way, or private property.

Section 8-3-12 PROHIBITED DISPOSAL

The following types of refuse shall not be placed in containers, in the right-of-way, or curbside:

1. Hazardous wastes;
2. Septic tank or cesspool pumpings and similar liquid waste.
3. Dirt, rock, construction or demolition material.
4. Appliances, furniture, bulky automotive parts, tires, paint, or concrete blocks.

A. Dead dogs, cats, and other animals weighing less than seventy-five (75) pounds upon any public right-of-way will be removed and disposed of upon notification of the Town's Department of Public Works or of a private removal and disposal

organization in the business of providing this service. Dead animals shall not be placed in solid waste containers.

B. Any person who is in the business of trimming trees, shrubs, grass, or brush for compensation shall be solely responsible for removal and disposal of all brush, tree trimmings, grass, leaves or similar landscaping or plant material generated in connection with such activity.

C. Any refuse which is placed for collection but which does not comply with the provisions of this chapter will not be collected and will subject the owner or occupant of the property, or the owner or occupant of abutting property, in the case of non-complying refuse in the right-of-way, to penalties for violation of the Town Code.

D. The abatement procedure for a resident, owner or occupant who fails to remove items placed for collection that do not conform to the requirements of this chapter is defined in section 8-5-2 of the Town Code.

E. No person shall place or cause to be placed any garbage, debris, trash, refuse, papers or other materials upon any public or private property within the Town except as specifically permitted in this chapter or at sites designated by the Town Council.

Section 8-3-13 BURNING GARBAGE

No person shall burn or attempt to burn garbage within the town limits.

Section 8-3-14 BUILDING CONTRACTORS TO LEAVE AREAS CLEAN

All owners, contractors and builders of structures shall, upon the completion of any such structure, remove and dispose at their sole cost and expense all refuse of every nature, description or kind which has resulted from the building of such structure, including all lumber scraps, shingles, plaster, brick, stone, concrete and other building material, and shall leave the lot and all nearby premises utilized in such construction in a clean and well kept condition within five (5) working days. Failure to comply with this section will subject the responsible party to penalties for violation of the Town Code.

Section 8-3-15 ACCUMULATING COMBUSTIBLE RUBBISH;

A. No person shall place upon or permit to remain upon any roof or in any court, yard, vacant lot, alleyway or open space any accumulation of wastepaper, waste hay, grass, straw, weeds, litter or combustible or inflammable waste or rubbish of any kind. All weeds, grass, vines and other growth which endanger property or may be subject to fire shall be cut down and removed by the owner or occupant of the property.

B. Hay may be stored in the town where the hay is properly baled and properly stacked; provided, that storage of hay does not violate the provisions of this code or any other ordinances of the town.

C. Failure to comply with this section will subject the responsible party to penalties for violation of the Town Code.

Section 8-3-16 SPILLAGE AND CLEANUP

No person shall deposit or cause to be deposited upon any street, alley or premises in the town any garbage, trash, or refuse of any kind. It shall be the duty of all refuse collection personnel to immediately clean up any refuse spilled during the collection process. Failure to comply with this section will subject the responsible party to penalties for violation of the Town Code.

Section 8-3-17 PENALTY FOR VIOLATION

Any person found guilty of violating any of the provisions of this Article shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not to exceed two thousand five hundred dollars ($2,500). Each day that a violation continues shall be a separate offense punishable as described. In the alternative to the criminal penalty, the health officer or his designee may proceed pursuant to this Article by citation for civil sanctions(s) or declare such violations to be a public nuisance. The procedure for civil actions shall be as outlined in §8-6-5 of this code and the procedure for nuisance abatement shall be as outlined in Article 8-5 of this code.

Article 8-4 NUISANCE

8-4-1 Public Nuisance Purpose and Scope [457 517]
8-4-2 Abatement of Public Nuisances

Section 8-4-1 Public Nuisance Purpose and Scope [517]

Purpose and scope: The purpose of this Chapter is to promote the health and safety of the Town of Paradise Valley and its residents, and to protect neighborhoods against physical, and visual deterioration. To that end, the Town intends by this Chapter to prohibit nuisances that:

(1) Contribute to or cause injury or endangerment to the Health, safety or welfare of others;

(2) are contrary to community standards;

(3) are offensive to the senses;

(4) unlawfully interfere with, obstruct or tend to obstruct or render dangerous the free passage or use, in the customary manner, of any watercourse, sidewalk, public street or roadway,

(5) obstruct the free use of property so as to interfere with the comfortable enjoyment of life and property by the public.

Section 8-4-2 Abatement of Public Nuisances

It shall be unlawful for any person to refuse or neglect to remove, abate, or destroy any public nuisance.

Article 8-5 PROCEDURE [177] [370] [420]

8-5-1 Repealed [420]
8-5-2 Abatement of Nuisances and Code Violations [420] [468]

Section 8-5-2 Abatement of Nuisances and Code Violations

A. If the Town Manager or his designee determines that a nuisance, as defined in this Code, or any violation of this Chapter exists on any property, he shall provide reasonable written notice of the nuisance or violation to the owner and to the occupant or lessee of the property. The notice shall be either personally served or mailed to the owner, and to the occupant or lessee, at his last known address by certified mail, or the address to which the tax bill for the property was last mailed. If the owner does not reside on the property, a duplicate copy of the notice shall be sent to him at his last known address. The notice shall contain a legal description of the property, specify the nature of the nuisance or violation, and state the estimated cost to be assessed in the event that the nuisance or violation is removed or abated. The notice shall advise the persons to whom it is sent that in the event that the violation is not corrected within thirty (30) days from the date upon which the notice is given, the Town will cause the violation or nuisance to be corrected, removed or abated with all

costs assessed against the owner, lessee or occupant, individually or jointly, for the removal or abatement of the violation or nuisance, in addition to any civil or criminal fines which may be imposed pursuant to this Chapter. The Town may record the notice in the county recorder's office. If subsequent satisfaction or compliance with the notice is obtained, the Town shall record a release of the notice.

B. The notice shall also advise that the notice of nuisance/violation and any assessment of costs may be appealed in writing to the Town Council within ten (10) days after notice is given, unless the removal or abatement is ordered by a Court. Such appeal

shall be written and filed with the Town Clerk and shall set forth the basis upon which the Town Council is requested to reverse the determination of the Manager or his designee. The Town Council may reverse, modify, affirm or remand the matter to the Town Manager or his designee. If the Manager is affirmed or modified, the owner, occupant or lessee affected by the notice shall have an additional ten (10) days from the date of the Town Council action in which to remove or abate the violation or nuisance. [468]

C. If any person with an interest in the property, including an owner, lienholder, lessee or occupant, after notice as required in Subsection A hereof, does not remove and abate the violation or nuisance, the Town Manager may remove, abate, enjoin or cause removal and abatement, and cause a statement of costs of such removal or abatement by the Town to be issued individually, jointly or severally against the owner, occupant or lessee. Costs of abatement, injunction or removal by the Town shall include actual cost of such removal or abatement, including five percent (5%) for additional inspection and other incidental connected costs. Such sum, and associated legal costs for abatement or injunctions, shall be assessed against the lot or tract of land if it remains unpaid thirty (30) days after the date of the statement of costs.

D. The assessment shall be recorded in the county recorder's office, including the date and amount of the assessment, the legal description of the property and the name of the Town. The assessment, from the date of its recording in the office of the county recorder, shall be a lien on the lot or tract of land and the several amounts assessed against such lot or tract of land until paid. Such assessments recorded after July 15, 1996, are prior and superior to all other liens, obligations, mortgages or other encumbrances, except liens for general taxes. A sale of the property to satisfy an assessment obtained under the provisions of this section shall be made upon judgment of foreclosure and order of sale. The Town may bring an action to enforce the assessment in Superior Court in Maricopa County at any time after recording of the assessment, but failure to enforce the assessment by such action shall not affect its validity. The recorded assessment shall be prima facie evidence of the truth of all matters recited therein, and of the regularity of all proceedings prior to the recording thereof. A prior assessment for the purposes provided herein shall not be a bar to a subsequent assessment or assessments for such purposes, and any number of liens or assessments on the same lot or tract of land may be enforced in the same action. Assessments that are imposed under this section shall run against the property until paid and are due and payable in equal annual installments as provided in A.R.S. § 9-499. An assessment that is past due accrues interest at the rate prescribed by A.R.S. § 44-1201.

E. For the purpose of this section, notice is deemed "given" when it is personally served or certified mail is signed for. If certified mail is returned as refused or undelivered, notice is deemed "given" as of the last date of publication as provided in A.R.S. § 39-204. "Property" includes buildings, grounds, lots and tracts of land.

Article 8-6 COMMUNITY ENHANCEMENT [417]

8-6-1 Definitions [517]
8-6-2 Enumerated Violations [517]
8-6-3 Violations Not Inclusive
8-6-4 Option to Proceed Criminally or Civilly
8-6-5 Commencement of Civil Action, Citation, Contents
8-6-6 Presumption that Owner is Responsible
8-6-7 Civil Sanction, Appearance or Payment by Mail
8-6-8 Default Judgment
8-6-9 Civil Sanctions Imposed
8-6-10 Rules of Procedure
8-6-11 Collection of Civil Sanctions, Lien
8-6-12 Abatement
8-6-13 Notice of Violation, Recording
8-6-14 Inspections and Authority
8-6-15 Each Day Separate Violations

Section 8-6-1 Definitions [517]

The following definitions shall apply to this Article:

A. "Bodies of water" means a constructed or excavated area designed to hold water on a continuous basis other than a swimming pool or spa.

B. "Debris" means, including but not limited to, junk, lumber, furniture, household fixtures, trash, rubbish, garbage, refuse of any kind or nature.

C. "Deteriorated Condition" means unsightly conditions including, but not limited to, the accumulation of debris; fences or walls characterized by holes, breaks, rot, crumbling, cracking, peeling or rusting; landscaping that is dead, damaged, characterized by uncontrolled growth or lack of maintenance, and any other similar conditions of disrepair.

D. "Deteriorate or Deterioration" means a diminution in quality in the condition or appearance of a building or structure or parts thereof, the fact or process of decay or degeneration, characterized by holes, breaks, rot, crumbling, cracking, peeling, rusting, vermin infestation, unsafe or unsanitary conditions, or any other evidence of physical decay or neglect or excessive use or lack of maintenance.

E. "Inoperable Vehicle" means a vehicle which exhibits one or more of the following conditions: physically incapable of operation, wrecked or partially dismantled, on jacks, blocks or similar equipment, abandoned, unable to be safely operated, deflated tires, or

from which the chassis, engine, wheels or tires have been removed, or without valid registration.

F. "Owner or Owner of Record", as used within this Article, shall be presumed to be the person(s) or entity indicated on the records of the Maricopa County Assessor as the owner of the property in question on the date of any alleged violation.

G. "Occupant" means a person who is occupying a building or structure and is using it as a place of abode, a place of residence or a place to live on either a temporary or permanent basis.

H. "Unscreened" means any unroofed portion of the property 1) visible from a street, right of way or public property; and 2) not screened by a substantially opaque fence, dense shield of vegetation, walls, shade structure or building at least five (5) feet high.

I. "Vegetation" or "Landscaping " means plant growth, whether living or dead, characterized by grass, weeds, bushes, cactus or trees.

Section 8-6-2 Enumerated Violations [517]

It is unlawful, a civil and criminal violation of this Code, and a public nuisance for any occupant, lessee or owner:

A. To leave or permit to remain any inoperable vehicle when such vehicle or part thereof is located in an unscreened area.

B. To leave or allow in an unscreened area

1. grass which exceeds six (6) inches in height;

2. weeds which exceed six (6) inches in height;

3. dry vegetation, tumbleweeds, branches or clippings; or

4. dead trees, bushes or shrubs.

C. To leave or permit to remain on the property any accumulation of rubbish, trash, filth, debris or other deteriorated conditions.

D. To cause or allow a condition which may harbor insect or rodent infestation, or which may likely become a fire hazard, or which may result in a condition which may threaten the safety or health of neighboring properties or the public.

E. To cause or permit any object, debris, building, tree, bush or landscaping to interfere with, obstruct, tend to obstruct, or render dangerous the free passage, use or vision in the

customary manner of any sidewalk, street, or right of way or in violation of the Town Code.

F. To cause or permit any vegetation or landscaping, that is visible from public property, that is substantially dead or damaged, characterized by uncontrolled growth or lack of maintenance, or any other deteriorated condition.

G. to cause or permit Any pool, spa, fountain, or other body of water to be improperly maintained so as to create a safety hazard, harbor insect infestation, be polluted, or become stagnant.

H. To allow or permit any wall or fence that is missing blocks, boards, or other material, to deteriorate due to lack of maintenance so as to constitute a hazard to persons or property.

(1) Allow or permit any dangerous, deteriorated, abandoned, partially destroyed, or unfinished building, addition, appendage or other structure, or any building in violation of the Uniform Building Code as adopted by the Town, or any vacated or abandoned building or structure to be unsecured at any time resulting in a condition which may threaten the safety or health of neighboring properties or the public.

(2) The means, methods, or materials used for securing a vacated or abandoned building or structure, such as wood, metal, or any other item, must be compatible with the color of the building.

I. To allow or permit cattle, horses, sheep, goats, dogs, cats, birds, fowl, or any other animal or bird, and the pens, stalls, yards, shelters, cages, areas, places and premises where they are held or kept, to be maintained in such a manner as to cause flies, insects, vermin, rodent harborage, or to allow odors, ponded water or other liquid, the accumulation of manure, garbage, refuse or other noxious materials to become a public health nuisance.

J. To allow or permit colonies of feral bees, hornets, or wasps, or colonies of honeybees maintained for the production of honey to become a public nuisance.

K. Notwithstanding any other provisions of this Chapter, a person who commits a nuisance or willfully omits to perform any legal duty relating to the removal of a nuisance not enumerated in this chapter, but otherwise provided for within the scope and authority to regulate nuisances as granted to the Town by State Law, shall be in violation of this chapter, provided the violation poses a present hazard to public health, safety and welfare.

Section 8-6-3 <u>Violations Not Exclusive</u>

Violations of this Article are in addition to any other violation enumerated within the Town ordinances and Code and in no way limits the penalties, actions or abatement procedures which may be taken by the Town for any violation of this Article which is also a violation of any other ordinance of the Town, or statute of the State of Arizona.

Section 8-6-4 Option to Proceed Criminally or Civilly

The health officer or his designee (hereinafter referred to as "health officer") may proceed pursuant to this Article by citation for civil sanctions or by criminal complaint pursuant to the general penalties provision of § 1-9-2 of this Code.

Section 8-6-5 Commencement of Civil Action, Citation, Contents

A. The health officer is assigned the responsibility of enforcing this Article and is granted the authority expressly granted and impliedly needed and necessary for enforcement.

B. The health officer is authorized to commence an action under this Article by issuing a citation to the occupant of the property where the violation has occurred, or to the owner of record, or to both.

C. The citation will be substantially in the same form as the Arizona traffic citation form currently in use and shall direct the defendant to appear in Municipal Court or pay the civil sanction imposed pursuant to § 8-6-9(A) within twenty (20) days after issuance of the citation. The form shall contain a schedule of civil sanctions and penalties which are imposed by the Court.

D. The citation may be signed by the occupant, lessee or owner with his promise to appear or pay the civil sanction imposed as provided in § 8-6-9(A) within twenty (20) days of the issuance of the citation. If the occupant, lessee or owner is unavailable at the time the violation is noted, service may be accomplished and will be deemed proper and complete if the citation is either personally served or mailed to the owner, occupant or lessee at his last known address by certified mail, or the address to which the tax bill for the property was last mailed, or in any manner provided by the Rules of Civil Procedure.

Section 8-6-6 Presumption that Owner is Responsible

The owner of record, as recorded in the Maricopa County Recorder's Office records, of the property upon which a violation of this Article exists shall be presumed to be a person having lawful control over any building, structure or parcel of land. If more than one person shall be recorded as the owner of the property, the persons shall be jointly and severally presumed to be persons having lawful control over the building, structure or parcel of land. This presumption shall not prevent enforcement of the provisions of this Article against any other person, lessee or occupant specified in this Article.

Section 8-6-7 Civil Sanction, Appearance or Payment by Mail

The defendant shall within twenty (20) days of the issuance of the civil citation appear in person or through his attorney in the Municipal Court and shall either admit or deny the allegations contained in the citation. If the defendant admits the allegations, the Court shall immediately enter judgment against the defendant in the amount of the civil sanction for the violation charged as set by this Article. If the defendant denies the allegations contained in the citation, the Court shall set a hearing date for trial of the matter.

Section 8-6-8 Default Judgment

If the defendant fails to appear as directed on the citation, the Court shall enter a default judgment for the amount of the civil sanction indicated for the violation charged, together with any allowable penalty for the defendant's failure to appear as established by the Court. If the defendant fails to appear at a prehearing conference as set by the Court, the Court shall nonetheless set the matter for trial. If a defendant fails to appear at a trial, the Court may enter judgment against the nonappearing defendant for the amount of the civil sanction plus allowable penalty for failure to appear. No judgment may be entered against a fictitiously identified defendant.

Section 8-6-9 Civil Sanctions Imposed

A. *Civil sanction schedule:*

The civil sanction for violating Section 8-6-2 shall be an amount not to exceed two hundred fifty dollars ($250.00).

B. *Civil penalties imposed for failure to appear:*

In addition to the amount of the civil sanction imposed under subsection A above, there is imposed a civil penalty in the same amount as the civil sanction should the defendant fail to appear and answer for a violation of Section 8-6-2 within the time period stated on the citation or fails to appear at the time and place set for any hearing of a matter arising under this Article.

Section 8-6-10 Rules of Procedure

The Arizona Rules of Court for Civil Traffic Violation Cases shall be followed by the Municipal Court for civil citations issued pursuant to this Article except as modified or where inconsistent with the provisions of this Article or as modified or established for use by the Municipal Court or the Arizona Supreme Court.

Section 8-6-11 Collection of Civil Sanctions, Lien

Any judgment for a civil sanction or penalty imposed pursuant to this Article shall constitute a lien against the real property of the defendant which may be perfected by recording a copy of the judgment under seal of the Town with the Maricopa County Recorder. Any judgment for civil sanctions or penalties taken pursuant to this Article may be collected as any other civil judgment.

Section 8-6-12 Abatement

A. Any nuisance defined in this Article may be abated as provided in Article 8-5 of this Code or in any other manner authorized by law.

B. In addition to any other sanction or penalty authorized by law or ordinance for civil or criminal prosecution of violations herein, or for abatement as a public nuisance, the Court may issue an order permitting the Town to abate the condition giving rise to the violation. The reasonable costs of any such abatement shall be the responsibility of the person found responsible or guilty of the violation.

C. After notice to the owner, lessee, occupant or any responsible party, the judge or Court hearing officer shall conduct a hearing before issuing an abatement order. The hearing shall be informal and open to the public. Evidence may be taken from any interested party and considered in determining whether a condition in violation of this Article exists and what, if any, abatement action should be permitted. Any person who fails to appear after notice of the hearing may be deemed to have waived any right to introduce evidence. The Court's determination shall be based on the preponderance of evidence. Upon finding that abatement is appropriate, the Court may order removal, board-up, clean-up or any other action the Court deems reasonably necessary to correct the violation. The reasonable costs of any abatement permitted by Court order shall be the responsibility of the owner and may be collected as other costs of abatement provided for by ordinance or law.

D. If a defendant fails to correct any violation charged within thirty (30) days of the issuance of the first citation, the Town Attorney may also proceed without further notice to commence an injunctive action for abatement of the violation. Any action taken under this Article shall be in addition to any other remedies provided for in this Code.

Section 8-6-13 Notice of Violation, Recording

A. When the health officer determines a violation of this Article exists, the health officer may notify the occupant, owner or responsible party through the issuance of a notice of violation. A notice of violation issued shall include:

1. Identification of the property in violation

2. Statement of violations in sufficient detail to allow an owner or responsible party to identify and correct the problem

3. Reinspection date

4. Address and phone number of a Town representative to contact

5. Town's authority to abate if the owner, lessee or occupant does not correct the violation and to assess a lien against the property for the costs of abatement

6. Appeal procedures

7. Civil and criminal sanctions for violations and Court orders of abatement.

Nothing in this section shall require the issuance of a notice of violation prior to the commencement of civil or criminal violation proceedings.

B. The Town may record a notice of violation with the Maricopa County Recorder. A recorded notice of violation shall run with the land. Failure to record a notice of violation shall not affect the validity of the notice as to persons who receive the notice. When the property is brought into compliance, a satisfaction of notice of violation shall be filed at the request of the owner or responsible party at the requester's expense.

C. The transfer of any and all property interests in any manner, including but not limited to the sale, trade, lease, gift or assignment of any real property against which a notice of violation has been issued shall not relieve the party(s) served unless the legal entity assuming an ownership interest in such property, in writing, assumes responsibility for compliance with the notice of violation and a copy of such writing is presented to the Town. Any legal entity, real or statutory, who transfers the ownership interest in real property against which a notice of violation has been served without obtaining a written acceptance of liability from the new owner for the items listed in the notice of violation shall be guilty of a misdemeanor.

Section 8-6-14 Inspections and Authority

A. The Town is authorized to make inspections of property to determine compliance with this Article. An inspector may expand the scope of any inspection to include other Town Code violations noted during inspection.

B. Unscreened exterior areas, buildings, structures and lands may be inspected at any time with or without the involvement of the owner, occupant or responsible party in accordance with legal requirements.

Section 8-6-15 Each Day Separate Violation

Each day that a violation of this Article is permitted to continue or occur by the defendant shall constitute a separate offense which is subject to separate civil or criminal citation pursuant to the provisions of this Article.

ARTICLE 8-7 DRAINAGEWAYS [418]

Section 8-7-1 Drainageways and Watercourses, Duties, Presumption [601]
Section 8-7-2 Designation of Drainage Facilities by Town Engineer
Section 8-7-3 Maintenance and Repair by Owner, Occupant
Section 8-7-4 Violations, Civil and Criminal Enforcement [520]
Section 8-7-5 Abatement

Section 8-7-1 Drainageways and Watercourses, Duties, Presumption

A. It is unlawful and a public nuisance to allow or cause any alteration, diversion, retardation, obstruction or impeding of the flow of waters in any watercourse or drainageway whenever such action creates a hazard to life or property, damages or endangers by flooding, erosion or any other means any public or private property or improvements, or reduces the capacity of a watercourse or drainageway.

B. It is unlawful and a public nuisance to allow or cause any excavation, filling, grading, dumping or building in any drainageway or watercourse except in compliance with Town building codes and applicable law.

C. It is unlawful and a public nuisance to allow or cause an existing excavation or embankment or fill to become a hazard to life and limb, to endanger property or to adversely affect the safety, use or stability of a watercourse or drainageway.

D. It is unlawful and a public nuisance to cause or allow rubbish, trash, vegetation, weeds, grass, landscaping or other growth to occur or accumulate in a drainageway or watercourse whenever such growth or accumulation damages or endangers by flooding or other means, reduces the capacity of watercourse or drainageway, or otherwise threatens the safety or health of neighboring properties or the public.

E. For the purpose of this Article, watercourse and drainageway include and are not limited to the following: natural or artificial river, creek, stream, wash, arroyo, recorded drainage easement, channel, ditch, canyon, ravine, sheet flow or other potential flood hazard or flood plain area or other body of water having banks and bed through which waters flow on a recurrent basis.

F. For the purpose of provisions of this Article, an owner of record or occupant of property upon which any violation or condition exists, as set forth in Subsections A through D of this section or the remainder of this Article, is presumptively responsible for such violation, penalties and abatement. The existence of such violation or condition shall constitute a prima facie case against such owner or occupant.

Section 8-7-2 Designation of Drainage Facilities by Town Engineer

The Town Engineer is authorized to approve and designate drainageways and watercourses on public and private property which shall be designed to carry surface and storm waters to the nearest practical watercourse, drainageway or facility, street or right-of-way approved by the Town Engineer as a safe place to deposit such waters, and for other compliance with this Article. It is unlawful and a public nuisance to fail to comply with such designation or the conditions of same as determined by the Town Engineer on public or private property.

Section 8-7-3 Maintenance and Repair by Owner, Occupant

The owner or occupant of private property upon which a designated drainageway or watercourse exists shall be responsible for the maintenance and clearance of such drainageway or watercourse and to ensure compliance with Subsections A through D of Section 8-7-1 above, Town ordinances and law. Failure to so maintain, clear or repair such drainageway or watercourse is unlawful and a public nuisance.

Section 8-7-4 Violations, Civil and Criminal Enforcement [520]

A. Violations of this Article are in addition to any other violation enumerated within the Town Codes and ordinances and state law and in no way limits the penalties, actions or abatement procedures which may be taken by the Town for any violation of this Article.

B. Violations of this Article may be prosecuted by citation for civil sanctions, with a maximum sanction not to exceed five hundred dollars ($500.00), or by criminal complaint pursuant to the general penalties of § 1-9-2 of this Code.

C. Each day that a violation of this Article is permitted to continue or occur by the defendant shall constitute a separate offense which is subject to separate civil or criminal citation pursuant to the provisions of this Article.

D. A civil citation issued hereunder will be substantially in the same form as the Arizona traffic citation form currently in use, processed in accordance with the Arizona Rules of Court for Civil Traffic Violation Cases.

Section 8-7-5 Abatement

Any nuisance defined in this article may be abated as provided in Article 8-5 of this code or in any other manner authorized by law. The Town may also seek a court order of abatement pursuant to Section 8-6-12 of this code.

Article 8-8 SPECIAL EVENTS ON PRIVATE PROPERTY AND PUBLIC RIGHTS-OF-WAY [542]

Section 8-8-1 Intent and Purpose
Section 8-8-2 Definitions
Section 8-8-3 Permit Required
Section 8-8-4 Exemptions to Permit Requirement
Section 8-8-5 Application for Permit and Fees
Section 8-8-6 Prohibitions, Restrictions, and Limitations
Section 8-8-7 Requirements and Provisions for Approval of Permit
Section 8-8-8 Special Event Permits for Processions and Parades
Section 8-8-9 Pre-Approval of Temporary Structure Locations
Section 8-8-10 Procedure for Review of Application and Appeal of Decision
Section 8-8-11 Suspension of Permit
Section 8-8-12 Penalty

Section 8-8-1 Intent and Purpose

The intent of this chapter is to identify Special Events and to specify prohibitions, requirements, provisions, limitations, restrictions and conditions for their approval. The permitting and regulation of Special Events are intended to ensure the general health, safety, and welfare of the community, to ensure that the temporary operation of the Special Event will be a compatible activity for the neighborhood in which it is located and to minimize negative impacts on the immediate neighborhood.

Section 8-8-2 Definitions

"Block Party" means any group or neighborhood association consisting of Town residents, which, under competent adult supervision, gather upon any public street or right-of-way for a social purpose.

"Charitable Nonprofit Organization" means any person(s), partnership, association, corporation or other group whose activities are conducted for civic or humanitarian motives, or for the benefit of others, and not for the commercial gain of any private individual or group and may include, but shall not be limited, to political parties or committees, patriotic, philanthropic, social service, welfare, benevolent, educational, civic, fraternal, cultural, charitable, scientific, historical, religious, athletic or medical organizations. Proof of federal exemption under 26 U.S.C. Section 501 (c), Section 501 (d) or Section 501 (e) may be required.

“Commercial ” means any individual, entity or organization that operates for profit and does not have valid 26 U.S.C. Section 501(c), Section 501 (d), or Section 501 (e) tax-exempt status.

“Minor Event” means an event that takes place on private property; has a minimal impact on neighboring properties; and lasts for less than twenty-four (24) consecutive hours, including but not limited to weddings, family reunions, memorials, or other ceremonies.

“Parade “ or “Procession” means any organized procession, march, ceremony, or public walk, consisting of a group of individuals, animals or vehicles, or any combination thereof, moving in an orderly way on a public street or right-of-way, and shall include distance running, bicycle races and similar activities. This Article shall not apply to funeral processions or to governmental agencies acting within the scope of their functions.

Special Event” includes a wide variety of events or short-term activities, other than minor events, that may impact neighboring properties, and that involve: the use of temporary structures for more than 24 hours; the temporary use of residential property for commercial or charitable purposes; the use of pyrotechnics or other temporary displays visible or audible off the property; the temporary use of public rights-of-way; or the use of temporary directional signage in the public rights-of-way. Special Event includes, but is not limited to, parades or processions, block parties, film production events, charitable fundraising events, designer and/or showcase home events, home and garden tours, and fireworks displays.

“Temporary Structure” means anything constructed or erected, the use of which requires a fixed location on the ground that is intended to be erected for a limited time, including but not limited to, tents, grandstands, bleachers, scaffolding and platforms, but excluding temporary sunshade structures or canopies of 200 square feet or less which have no side walls**,** and any tents or membrane structures that are depicted on the approved site plan for a property subject to a Special Use Permit, or otherwise provided for pursuant to the terms of a Special Use Permit.

Section 8-8-3 Permit Required

A. An application for a Special Event permit on private property or Town-owned property shall be submitted to the Community Development Department. An application for a Special Event involving the use of a public street, or that may require extra security or special traffic control measures, shall also be reviewed by the Chief of Police or his designee.

B. It shall be unlawful to conduct a Special Event without a properly issued Special Event permit, unless the event is exempted as provided in Section 4 of this Article, provided, however, that any Special Event that occurs on or involves the use of public rights-of-way, in whole or in part, shall obtain a permit. Minor deviations or variances from Town Code requirements, such as temporary exceptions to the noise and sign regulations, shall be denoted in the Special Event permit.

C. Special Events occurring without a valid permit shall be subject to immediate cessation pursuant to notice from the Town manager or his designee. It shall be unlawful to continue event activities after notice of a violation has been issued.

Section 8-8-4 Exemptions to Permit Requirements

The following categories are exempt from the requirement to obtain a Special Event permit, provided they do not involve the use of temporary structures; the use of Town rights-of-way, including valet activities that involve the use of Town owned rights-of-way or valet parking occurring in prohibited areas; aerial activities that involve the use of aircraft or tethered balloons; the use of temporary traffic directional signage in the public rights-of-way; or the use of off-duty police officers for directing traffic in the public rights-of-way.

A. Garage, Yard or Estate Sales. Any commercial enterprise being run on residentially-zoned property under the pretense of a garage, yard or estate sale shall be prohibited and subject to immediate cessation. It shall be unlawful to continue such activities after an order to cease and desist has been issued by the Town Manager or his designee. The garage, yard or estate sale must sell items that are related to the residential use of that property and goods or items shall not be brought to the residential property from a commercial enterprise or business for the specific purpose of a sale or auction. Although exempt from the Special Event permit process, all garage, yard or estate sales are subject to the following requirements and limitations:

1. The garage, yard or estate sale shall be carried on wholly within the property lines on which the dwelling is located and limited to the hours between 7:00 a.m. and 5:00 p.m.

2. The garage, yard or estate sale shall operate for not more than three consecutive days and shall be held no more than three times within a calendar year at the same location.

3. All signage shall be in conformance with the sign regulations as designated in Article XXV of the Paradise Valley Zoning Code.

B. Minor Events. Although minor events, as defined in this Chapter are exempt from the Special Event permit requirements, they may require other types of permits, such as: Special Event liquor licenses, pursuant to A.R.S. § 4-203.02; Uniform Fire Code permits pursuant to Town Code §13-1-10, or any other section of the Code which requires a permit.

C. Certain Charitable Events. Charitable Nonprofit Organizations, schools, or political fund-raising events in which all of the net proceeds benefit the Charitable Nonprofit Organization, school, or political organization.

D. Special Use Permit Properties. Special Events on properties governed by Special Use Permits are exempt from the Special Event permit process, provided that such exempted events are limited to the type of activities that are customary and incidental to the primary uses of the property and do not require the use of temporary structures which are not allowed by the Special Use Permit.

E. Funeral processions. A funeral procession composed of a procession of vehicles identified by such methods as may be determined and designated by the Paradise Valley Chief of Police.

Section 8-8-5 Application for Permit and Fees

A. A completed application for each Special Event permit, and three copies of all submittals shall be submitted to the Community Development Department at least 15 days before the scheduled Special Event. The 15-day time limitation may be waived upon the applicant's agreement to waive the appeal provisions of Section 10 of this chapter, except for permits that involve a Special Event Liquor License or events that take place on Town-owned property.

B. Each applicant for a Special Event permit shall provide the information necessary to make recommendations and/or provisions for approval. At a minimum, the following information shall be provided:

1. The name, address and telephone number of the person or organization seeking to conduct the event.

2. The name, address, and telephone number of the organization's representative who will be responsible for managing the event.

3. A description of the type of Special Event to be held, the date(s) it is to be held and the proposed duration of the activities.

4. A site plan depicting existing facilities and the boundaries of the Special Event, the location of any proposed temporary buildings and/or structures, including any tents, stages or vendor's booths, or auxiliary power sources that may be used during the event, and a parking plan, that shall contain provisions for providing adequate parking for the attendees of the Special Event, and, if applicable, for any other parking needs for the property upon which the Special Event is to occur.

5. The expected number of participants, including but not limited to staff and attendees of the event

6. Proposed security measures for the event.

7. A plan for how sanitary and water facilities, and waste removal will be provided during the event.

8. If required by the Town, a permit issued by the Fire Marshal certifying compliance with the Uniform Fire Code.

C. The following information may also be required if deemed necessary by the Town.

1. The parade or procession route to be traveled, the starting point and the termination point, a statement as to whether the event will occupy all or only a portion of the width of the streets proposed to be traversed, and any trash or water points along the route.

2. A sign plan depicting the proposed location(s) for the placement of temporary directional or traffic control signage, the number and size of the proposed signs, and a schedule for the placement and removal of the signs.

3. Details on how the event may impact neighboring properties, including but not limited to: noise from the event and how the noise will be monitored and controlled; the amount of traffic likely to be generated and how it will be accommodated; parking for event attendees; location of temporary structures; and the emission of odor, dust, gas, vibration, smoke, heat, pollutants, or glare beyond any boundary of the property on which the Special Event is to be conducted.

D. The Town Council, may, by resolution, set appropriate fees due at the time of filing the application, said fees to defray the cost of issuing and administering

permits under this Chapter. Fees may be waived for non-profit organizations, neighborhood groups or associations, governmental agencies and schools.

Section 8-8-6 Prohibitions, Restrictions, and Limitations [631]

A. No carnival, festival, fair, amplified outdoor concert, mechanical amusement ride, circus, outdoor auction, pumpkin sale, Christmas tree sale, haunted house, or similar kind of temporary outdoor exhibition or performance conducted by a commercial entity shall be allowed.

B. The use of private homes for Special Events that involve commercial uses or sales, the advertising of any product or goods, or events held for profit, including such events as auctions, art sales, jewelry or furniture sales, furniture showrooms, or the rental of residential property for a commercial event or purpose is prohibited, except for film production events or as otherwise specifically allowed herein.

C. Temporary structures.

1. No temporary structure shall be situated in such a manner that it blocks the access of emergency vehicles, creates a traffic hazard, or reduces the amount of available parking at the site of the Special Event to less than required under Article VIII of the Paradise Valley Zoning Ordinance. Special Events to be held on property subject to a Special Use Permit shall be subject to the approved provisions of the parking plan as required under Section 5-B-4 of this Article.

2. All temporary structures shall meet accessory structure setbacks and primary structure height limitations as provided for in Article X, Tables 1001A and 1001B of the Zoning Code. Special Events to be held upon property subject to a Special Use Permit shall meet the setback and height limitations pursuant to the terms of the Special Use Permit, or if no such standards are provided, a 40-foot setback on all sides and a 30-foot height limitation shall apply. For the purpose of determining required distances, support ropes and guy wires shall be considered as part of the temporary structure.

3. Temporary structures shall generally be removed from the site by the next business day after the expiration of the permit, or as otherwise provided for in the Special Event permit.

4. A permit from the Fire Department is required for any structure or tent having an area in excess of 200 square feet, or a canopy in excess of 400 square feet.

5. The Town Manager, or his designee, may waive any setback requirement set forth in this Chapter for a Minor Event upon written request of an applicant when the applicant demonstrates reasonable cause and there are no material adverse impacts from the requested waiver.

D. Special Events conducted within the Town shall at all times be in compliance with applicable Town ordinances (unless modified by the approved terms of the Special Event permit) and all applicable County and/or State requirements.

E. Electrical wiring shall be installed in compliance with the provisions of the National Electrical Code as adopted by Article 5-3 of the Town Code. Any supplementary lighting used during the Special Event shall be in conformance with the lighting provisions of this Code.

F. The operating hours of the Special Event shall be limited to the hours between 8:00 a.m. and 10:00 p.m., or as more specifically provided for by a Special Use Permit or a Special Event permit. To avoid unreasonable interference with the use and enjoyment of other properties in the immediate vicinity of the Special Event, these time limitations may be modified by the Town.

G. The conduct of the event shall not substantially interrupt the safe and orderly movement of other traffic or unduly interfere with fire and police protection or ambulance service to contiguous neighborhoods.

H. The event shall not be held for the sole purpose of advertising any product or goods, and is not designed to be held purely for private profit.

I. No person shall unreasonably hamper, obstruct or impede, or interfere with any Special Event in which a validly issued Special Event permit has been obtained.

Section 8-8-7 Additional Requirements and Provisions for Approval of Permit [623]

A. Requirements or provisions may be imposed on any Special Event permit whenever the public health and safety so require. If deemed necessary, based upon the type of Special Event and its impact on the immediate neighborhood, such provisions may include, but are not limited to, the following:

1. The payment of a refundable security deposit for Special Events to be held on Town owned right-of-way may be required.
2. That the Special Event shall take place only within a prescribed area with set boundaries.

3. That the applicant may be required to provide traffic control measures for the Special Event.

4. That clean up after the Special Event and waste removal shall be complete by 5:00 p.m. on the next business day after the expiration of the permit, or such other time as specified in the permit.

5. That the location of temporary buildings/and or structures, including stages or vendor's booths may be limited to certain areas of the property.

6. That the applicant shall ensure there is adequate parking availability.

7. That specific noise restrictions may be imposed.

8. That the applicant may be required to procure such public liability and/or property damage insurance, in an amount satisfactory to the Town, as shall protect the applicant and the Town from all claims for bodily injury, including accidental death, as well as for property damage arising from the event.

9. That the applicant may be required to execute a hold harmless and indemnification agreement holding the Town of Paradise Valley and its officers, agents, and employees harmless against any and all losses and liabilities for personal injury, death, or property damage arising out of, or as a consequence to the Special Event, and any and all expenses related to claims or lawsuits resulting from the event, including court costs and attorney fees.

10. That the applicant may be required to obtain a statement from the Chief of Police, or his designee, showing either that no police presence at the Special Event is required or that the applicant has arranged for the number of off-duty police officers whose presence is deemed necessary to ensure the peace and safety of those attending the Special Event and to minimize event impacts on the neighborhood. In determining the number of off-duty police officers, or whether any are necessary, consideration shall be given to the estimated number and the age of attendees, if alcohol will be served and/or sold, the nature of the Special Event, the site selected, the potential for conflict with other events, and the experience with similar events. All off-duty police officers required pursuant to this section shall be employed by and at the expense of the applicant and shall be retained by contacting the Paradise Valley Police Department.

B. For Special Events in which beer, wine or spirituous liquor, as defined by A.R.S. § 4-101, will be served and/or sold, the applicant shall obtain a Special Event Liquor License from Arizona Department of Liquor Licenses and Control when required by A.R.S. § 4-203.02. Prior to the issuance of such a permit, the Arizona Department of Liquor License and Control requires Town Council approval of the Special Event Liquor License. Town approval of the Special Event Liquor License shall be processed through the Town Clerk's Office.

C. An extension of the time for a Special Event permit may be granted for good cause, provided the applicant submits, in writing, a request for such an extension.

D. A permittee shall comply with all permit restrictions and conditions and with applicable laws and ordinances. The event chairperson, or other person managing the event, shall ensure that the permit is posted at the site of the event, or carried upon his person during the event, and shall be responsible for compliance with all permit requirements.

Section 8-8-8 Parades, Processions, Foot Races and Runs, and Bicycle Races and Rides

A. All parades shall be held on routes designated by the Chief of Police.

B. All directional signs must be removed within one hour of the end of the event.

C. Only non-permanent, non-toxic and limited pavement markings may be used.

D. All trash at water points and along the route must be removed within one hour of the end of the event.

E. Public address systems and electronic amplification of all types are prohibited.

F. A parade or procession issued a permit under this chapter shall move from its point of origin to its point of termination expeditiously and without unreasonable delays in route.

G. The concentration of persons, animals, and vehicles at assembly points shall not unduly interfere with proper fire and police protection of, or ambulance service to area contiguous to such an area.

H. No person shall unreasonably hamper, obstruct or impede, or interfere with any parade or event, or with any person vehicle or animal participating in or used in a parade or event. No driver of a vehicle shall drive between the vehicles or persons comprising a parade when such vehicles or persons are in motion and are conspicuously designated as a parade.

Section 8-8-9 Pre-Approval of Temporary Structure Locations

A. To be eligible for pre-approval of temporary structure locations, the following information must have been previously submitted to the Community

Development Department for prior approval and the applicant shall agree to comply with all pre-approved terms of the permit.

B. The Community Development Department shall maintain records of all pre-approved temporary structure locations. These records shall include a site plan depicting existing facilities and the boundaries of the Special Event, the location of any proposed temporary buildings and/or structures, including any tents, stages or vendor's booths, or auxiliary power sources that may be used during the event, a parking plan that includes provisions for adequate parking for the attendees of the Special Event, and, if applicable, for any other parking needs for the property upon which the Special Event is to occur.

Section 8-8-10 Procedure for Review of Application and Appeal of Decision

A. Within 15 days after receipt of a complete application pursuant to Section 3 of this Article, the Community Development Director shall inform the applicant in writing of the decision that either: approves the request; conditionally approves the request with limitations and stipulations; or denies the request with the reason for denial stated. The Director's decision shall be final unless within ten (10) days of the receipt of the decision a written appeal is filed.

B. Any party aggrieved by a decision of the Community Development Director may, within ten days of receipt of notice of the decision, appeal to the Town Manager.

C. The request for an appeal shall set forth the specific objections to the decision of the Director, which form the basis of the appeal.

D. The Town Manager shall set a time and place for the hearing as soon as practicable.

E. The hearing proceeding shall be conducted in an informal process:

1. The Town Manager shall not be bound by the technical rules of evidence in the conduct of such hearings.

2. All parties to the hearing shall have the right to present evidence in support of or in opposition to the decision of the Director.

F. The decision of the Town Manager shall be based upon the evidence presented and it shall either:

1. Affirm the decision of the Director of Community Development, or

2. Reverse the decision of the Director of Community Development, in whole or in part.

Section 8-8-11 Revocation of Permit

A. The Town may revoke any Special Event permit if the applicant has done, or the event has resulted in any of the following:

1. Violation of any provision or requirement of approval imposed upon the permit, or if any false or incomplete information was included in the application upon which the decision to approve the permit was based.

2. Violation of any other applicable provision(s) of the law.

3. Disruption of the public peace, safety or general welfare, or unreasonably interfered with the use and enjoyment of other properties in the immediate vicinity of the activity.

B. The Town Manager or his designee shall give the applicant notice of the permit revocation and immediately upon the giving of such notice, all activities under the permit shall cease. It shall be unlawful to continue event activities after a notice of revocation has been issued.

Section 8-8-12 Penalty

No person shall hold, sponsor, organize, manage, participate in, aid, or commence a Special Event as defined in this article without first obtaining a Special Event permit issued by the Town. The failure to comply with this requirement will constitute a violation of the Town Code punishable pursuant to Article 1-9 of the Town Code. Each day that the violation occurs shall be a separate offense.

Article 8-9 ILLICIT DISCHARGE AND CONNECTION ORDINANCE [549]

Section 8-9-1. Purpose/Intent
Section 8-9-2. Definitions [601]
Section 8-9-3. Applicability
Section 8-9-4. Responsibility For Administration
Section 8-9-5. Compatibility With Other Regulations
Section 8-9-6. Severability
Section 8-9-7. Ultimate Responsibility
Section 8-9-8. Discharge Prohibitions
Section 8-9-9. Watercourse Protection
Section 8-9-10. Industrial Or Construction Activity Discharges [601]
Section 8-9-11. Compliance Monitoring
Section 8-9-12. Requirement To Prevent, Control, And Reduce Storm Water Pollutants By The Use Of Best Management Practices.
Section 8-9-13. Notification Of Spills
Section 8-9-14. Violations, Enforcement, And Penalties
Section 8-9-15. Appeal Of Notice Of Violation
Section 8-9-16. Enforcement Measures After Appeal
Section 8-9-17. Cost Of Abatement Of The Violation
Section 8-9-18. Violations Deemed A Public Nuisance
Section 8-9-19. Remedies Not Exclusive

Section 8-9-1. PURPOSE/INTENT

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of Paradise Valley through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant discharge Elimination System (NPDES) permit process. The objectives of this ordinance are:

A. To regulate the contribution of pollutants to the MS4 by illicit storm water discharges by any user.

B. To prohibit illicit connections and discharges to the MS4.

C. To establish legal authority to carry out all inspection, surveillance, monitoring, and enforcement procedures necessary to ensure compliance with this ordinance.

Section 8-9-2. DEFINITIONS [601]

For the purposes of this ordinance, the following shall mean:

"ADEQ" means Arizona Department of Environmental Quality.

"Authorized Enforcement Agency," means employees or designees of the Town.

"Best Management Practices (BMPs)" means schedules of activities, prohibitions of practices, general good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters, or storm water conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

"Clean Water Act," means the federal Water Pollution Control Act (33 U.S.C. § set seq.) and any subsequent amendments thereto.

"Construction Activity" means activities subject to NPDES Construction Permits. These include construction projects resulting in land disturbance of one acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating and demolition.

"Facility" or "Activity" means any NPDES point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

"Hazardous Material" means any material, including any substance, waste or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

"Illegal Discharge" means any direct or indirect non-storm water discharge to the storm drain system except as exempted in Section 8 of this ordinance.

"Illicit Connection" is defined as either of the following:

> Any drain or conveyance, whether on the surface or subsurface that allows an illegal discharge to enter the storm drain system including but not limited to any conveyances that allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or,

Any drain or conveyance connected from a commercial or industrial land use to the storm system that has not been documented in plans, maps, or equivalent records and approved by an authorized agency.

"Industrial Activity" mans activities subject to NPDES Industrial Storm Water Permits as defined in 40 CFR, Section 122.26(b)(14).

"Municipal Separate Storm Sewer System (MS4)" means the system of conveyances (including sidewalks, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned and operated by the Town of Paradise Valley and designed or used for collection or conveying storm water, and that is not used for collection or conveying sewage.

"National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit" means a permit issued by EPA, through the Arizona Department of Environmental Quality, that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

"Non-Storm Water Discharge" means any discharge to the storm drain system that is not composed entirely of storm water.

"Person" means any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

"Pollutant" means anything which cause or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid, swimming pool water, and solid wastes and yard wastes; refuse, rubbish, garbage, litter or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from construction a building or structure; and noxious or offensive matter of any kind.

"Premises" means any building, lot parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

"Storm Drainage System" means publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

"Storm Water" means any surface flow, runoff, and drainage consisting entirely of water form any form of natural precipitation, and resulting from such precipitation.

"Storm Water Management Plan" means a document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Storm Water, Storm Water Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.

"Wastewater" means any water or other liquid, other than uncontaminated storm water, discharged from a facility.

"Watercourse" includes and is not limited to the following: natural or artificial rivers, creeks, streams, washes, arroyos, recorded drainage easements, channels, ditches, canyons, ravines, sheet flows or other potential flood hazards or flood plain areas or other bodies of water having banks and/or beds through which waters flow on a recurrent basis.

Section 8-9-3. APPLICABILITY

This ordinance shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by ADEQ or the Town as applicable.

Section 8-9-4. RESPONSIBILITY FOR ADMINISTRATION

The Town of Paradise Valley shall administer, implement, and enforce the provisions of this ordinance. Any powers granted or duties imposed upon the Town of Paradise Valley may be delegated in writing by the Town Manager to persons or entities acting in the beneficial interest of or in the employ of the Town.

Section 8-9-5. COMPATIBILITY WITH OTHER REGULATIONS

This ordinance is not intended to modify or repeal any other ordinance, rule, regulation, or other provision of law. The requirements of this ordinance are in addition to the requirements of any other ordinance, rule, regulation, or other provision of law, and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule, regulation, or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.

Section 8-9-6. SEVERABILITY

The provisions of this ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this ordinance or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this ordinance.

Section 8-9-7. ULTIMATE RESPONSIBILITY

The standards set forth herein and promulgated pursuant to this ordinance are minimum standards, therefore this ordinance does not intend or imply that compliance by any person will ensure that there will be no contamination, pollution, or unauthorized discharge of pollutants.

Section 8-9-8. DISCHARGE PROHIBITIONS

A. Prohibition of Illegal Discharges

No person shall throw, drain, or otherwise discharge, cause, or allow others under its control to throw, drain, or otherwise discharge into the MS4 any pollutants or waters containing any pollutants, other than storm water.

The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

1. The following discharges are exempt from discharge prohibitions established by this ordinance: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water.

2. Discharges or flows from firefighting, and other discharges specified in writing the Town of Paradise Valley as being necessary to protect public health and safety.

3. Discharges associated with dye testing, however this activity requires a verbal notification to the Town prior to the time of the test.

4. These prohibitions shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the United States Environmental Protection Agency (EPA), provided that the

discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulation, and provided that written approval has been granted for any discharge to the storm drain system.

B. Prohibition of Illicit Connections

1. The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

2. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

3. A person is considered to be in violation of this ordinance if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

4. Improper connections in violation of this ordinance must be disconnected and redirected, if necessary, to an approved onsite wastewater management system or the sanitary sewer system upon approval of the Town.

5. Any drain or conveyance that has not been documented in plans, maps, or equivalent, and which may be connected to the storm sewer system, shall be located by the owner or occupant of that property upon receipt of written notice of violation from the Town requiring that such locating be completed. Such notice will specify a reasonable time period within which the location of the drain or conveyance is to be determined, that the drain or conveyance be identified as storm sewer, sanitary sewer or other, and that the outfall location or point of connection to the storm sewer system, sanitary sewer system or other discharge point be identified. Results of these investigations are to be documented and provided to the Town.

Section 8-9-9. WATERCOURSE PROTECTION

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

Section 8-9-10. INDUSTRIAL OR CONSTRUCTION ACTIVITY DISCHARGES [601]

A. Submission of ADEQ Notice of Intent Certificate to Town of Paradise Valley

1. Any person subject to an industrial or construction activity NPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the Town prior to the allowing of discharges to the MS4.

2. The operator of a facility, including construction sites, required to have an NPDES permit to discharge storm water associated with industrial or construction activity shall submit a copy of the certificate provided by ADEQ ("ADEQ Notice of Intent Certificate") to construction site operators, granting coverage under the Construction General Permit, to the Town at the same time the operator submits the original ADEQ Notice of Intent Certificate to the EPA as applicable.

3. The copy of the ADEQ Notice of Intent Certificate may be delivered to the Town either in person or by mailing it to:
Town of Paradise Valley
Attention: Storm Water Discharge Certificate Department
6401 E. Lincoln Drive
Paradise Valley, AZ 85253

4. A person commits an offense if the person operates an industrial facility or construction site that is discharging storm water associated with the industrial or construction activity without having submitted a copy of the ADEQ Notice of Intent Certificate to do so to the Town.

Section 8-9-11. COMPLIANCE MONITORING

A. Right of Entry: Inspection and Sampling

The Town shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance.

1. If a discharger has security measures in force, which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the Town.

2. Facility operators shall allow the Town ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any addition duties as defined by state and federal law.

3. The Town shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the Town to conduct monitoring and/or sampling of the facility's storm water discharge.

4. The Town has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operation condition by the discharger at its own expense. All devices used to measure storm water flow and quality shall be calibrated to ensure their accuracy.

5. Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the Town and shall not be replaced. The costs of such access shall be borne by the operator.

6. Unreasonable delays in allowing the Town access to a permitted facility is a violation of a storm water discharge permit and of this ordinance. A person who is the operator of a facility with an NPDES permit to discharge storm water associated with and industrial or construction activity commits an offense if the person denies the Town reasonable access to the permitted facility for the purpose of conduction any activity authorized or required by this ordinance.

B. Search Warrants

If the Town has been refused access to any part of the premises from which storm water pollution is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, the Town may seek issuance of a search warrant from any court of competent jurisdiction.

Section 8-9-12. REQUIREMENT TO PREVENT, CONTROL, AND REDUCE STORM WATER POLLUTANTS BY THE USE OF BEST MANAGEMENT PRACTICES.

The Town will adopt requirements identifying Best Management Practices for an activity, operation, or facility, which may cause or contribute to pollution or contamination of storm water, the storm drain system, or waters of the Untied States. The owner or operator of such activity, operation, or facility shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of these structural and non-structural BMPs. Further, any person responsible for a property or

premise that is, or may be, the source of an illicit discharge, may be required to implement, at said persons expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the MS4. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with the industrial or construction activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a storm water management plan (SWMP) as necessary for compliance with the requirements of the NPDES permit.

Section 8-9-13. NOTIFICATION OF SPILLS

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or waters of the United States, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the Town in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the Town within two business days of the phone notice. If the discharge of prohibited materials emanates from a commercial, industrial, or construction establishment or activity, the owner or operator shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least two years.

Failure to provide notification of a release as provided above is a violation of this ordinance.

Section 8-9-14. VIOLATIONS, ENFORCEMENT, AND PENALTIES

A. Violations

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this ordinance. Any person who has violated or continues to violate the provisions of this ordinance, may be subject to the enforcement actions outlined in this section or may be restrained by injunction or otherwise abated in a manner provided by law.

In the event the violation constitutes an immediate danger to public health or public safety, the Town is authorized to enter upon the subject property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the property. The Town is authorized to seek the costs of the abatement as outlined in Section 17.

B. Warning Notice

When the Town finds that any person has violated, or continues to violate, any provision of this ordinance, or any order issued hereunder, the Town may serve upon that person a written Warning Notice, specifying the particular violation believed to have occurred and requesting the discharger to immediately investigate the matter and to seek a resolution whereby any offending discharge will cease. Investigation and/or resolution of the matter in response to the Warning Notice in no way relieve the alleged violator of liability for any violation occurring before or after receipt of the Warning Notice. Nothing in this subsection shall limit the authority of the Town to take any action, including emergency action or any other enforcement action, without first issuing a Warning Notice.

C. Notice of Violation

Whenever the Town finds that a person has violated a prohibition or failed to meet a requirement of this ordinance, the Town may order compliance by written notice of violation to the responsible person.

The Notice of Violation shall contain:

1. The name and address of the alleged violator;

2. The address when available or a description of the building, structure or land upon which the violation is occurring, or has occurred;

3. A statement specifying the nature of the violation;

4. A description of the remedial measures necessary to restore compliance with this ordinance and a time schedule for the completion of such remedial action;

5. A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed.

6. A statement that the determination of violation may be appealed to the Town by filing a written notice of appeal within five (5) days of service of the notice of violation; and

7. A statement that, should the violation fail to restore compliance within the established time schedule, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

D. Such notice may require without limitation:

1. The performance of monitoring, analyses and reporting;

2. The elimination of illicit connections or discharges;

3. That violation discharges, practices, or operations shall cease and desist;

4. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property.

5. Payment of a fine to cover administrative and remediation costs; and

6. The implementation of source control or treatment BMPs.

E. Compensatory Action

In lieu of the enforcement proceedings, penalties, and remedies authorized by this ordinance, the Town may impose upon a violator alternative compensatory actions such as storm drain stenciling, attendance at compliance workshops, wash cleanup, etc.

F. SUSPENSION OF MS4 ACCESS

1. Emergency Cease and Desist Orders

When the Town finds that any person has violated, or continues to violate, any provision of this ordinance, or any order issued hereunder, or that the person's past violations are likely to recur, and that the persons violation(s) has (have) caused or contributed to an actual or threatened discharge to the MS4 or waters of the United States which reasonably appears to present an imminent or substantial endangerment to the health or welfare of persons or to the environment, the Town may issue an order to the violator directing it immediately to cease and desist all such violation and directing the violator to:

a. Immediately comply with all ordinance requirements; and

b. Take such appropriate preventive action as may be needed to properly address a continuing or threatened violation, including immediately halting operations and/or terminating the discharge.

Any person notified of an emergency order directed to it under this Subsection shall immediately comply and stop or eliminate its endangering discharge. In the event of a discharger's failure to immediately comply voluntarily with the emergency order, the Town may take such steps as deemed necessary to prevent or minimize harm to the MS4 or waters of the United States, and/or endangerment to persons or to the environment, including immediate termination of a facility's

water supply, sewer connection, or other municipal utility services. The Town may allow the person to recommence its discharge when it has demonstrated to the satisfaction of the Town that the period of endangerment has passed, unless further termination proceedings are initiated against the discharger under this ordinance. A person that is responsible, in whole or in part, for any discharge presenting imminent endangerment shall submit a detailed written statement, describing the causes of the harmful discharge and the measures taken to prevent any future occurrence, to the Town within five (5) days of receipt of the emergency order. Issuance of an emergency cease and desist order shall not be a bar against or a prerequisite for, taking any other action against the violator.

2. Suspension Due to Illicit Discharges in Emergency Situations

The Town may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge, which presents or may present imminent and substantial danger to the environment, or to the health or welfare of person, or to the MS4 or waters of the United States. If the violation fails to comply with a suspension order issued in an emergency, the Town may take such steps as deemed necessary to prevent or minimize damage to the MS4 or waters of the United States, or to minimize danger to persons.

3. Suspension Due to the Detection of Illicit Discharge

a. Any person discharging to the MS4 in violation of this ordinance may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The Town will notify a violation of the proposed termination of its MS4 access. The violation may petition the Town for a reconsideration and hearing.

b. A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this Section, without the prior approval of the Town.

G. Civil Penalties

In the event the alleged violation fails to take the remedial measures set forth in the notice of violation or otherwise fails to cure the violation described therein within five (5) days, or such greater period as the Town shall deem appropriate, after the Town has taken one or more of the actions described above, the Town may impose a penalty not to exceed seven hundred and fifty dollars ($750.00) (depending on the severity of the violation) for each day the violation remains unremedied after receipt of the notice of violation.

H. Criminal Prosecution

Any person that has violated or continues to violate this ordinance shall be liable to criminal prosecution to the fullest extent of the law, and shall be subject to a criminal penalty not to exceed two thousand five hundred dollars ($2,500) per violation per day, and/or imprisonment for a period of time not to exceed six (6) months. Each act of violation and each day upon which any violation shall occur shall constitute a separate offense.

Section 8-9-15. APPEAL OF NOTICE OF VIOLATION

Any person receiving a Notice of Violation may appeal the determination of the Town. The notice of appeal must be received within five (5) days from the date of the Notice of Violation. Hearing on the appeal before the Town Manager or his designee shall take place within five (5) days from the date of receipt of the notice of appeal. The decision of the Town Manager or their designee shall be final.

Section 8-9-16. ENFORCEMENT MEASURES AFTER APPEAL

If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or, in the event of an appeal, within five (5) days of the decision of the Town Manager or his designee upholding the decision of the Town, then representatives of the Town shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the governmental agency or designate contractor to enter upon the premises for the purposes set forth above.

Section 8-9-17. COST OF ABATEMENT OF THE VIOLATION

A. Notwithstanding any other provision of this Chapter, when a nuisance, source of pollution or cause of sickness exists on private property, the Town shall order the owner or occupant to remove it within twenty-four (24) hours at the expense of the owner or occupant. The order may be delivered to the owner or occupant in the same manner as provided for service of process under the Arizona Rules of Civil Procedure. If the order is not complied with, the Town in addition to any other remedies allowed under this Chapter shall cause the nuisance, source of pollution or cause of sickness to be removed, and expenses of removal shall be paid by the owner, occupant or other person who caused the nuisance, source of filth or cause of sickness.

B. Any nuisance as defined in this Chapter may be abated as provided in Chapter 8, Safety, Health, Sanitation and Nuisance, Article 8-5 of this Code.

Section 8-9-18. VIOLATIONS DEEMED A PUBLIC NUISANCE

In addition to the enforcement process and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this ordinance is deemed to be a

threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

Section 8-9-19. REMEDIES NOT EXCLUSIVE

The remedies listed in this ordinance are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the Town to seek cumulative remedies.

The Town may recover all attorney's fees, court costs and other expenses associated with enforcement of this ordinance, including sampling and monitoring expenses.

Article 8-10 NUISANCE NOISE [573]

Section 8-10-1 General Prohibitions
Section 8-10-2 Declaration of Certain Acts Constituting Disturbing, Excessive, or Offensive Noises [618]
Section 8-10-3 Exemptions
Section 8-10-4 Penalty

Section 8-10-1 GENERAL PROHIBITIONS

A. It shall be unlawful for any person to disturb the peace by any of the following: making, continuing, maintaining or causing to be made or continued, within the limits of the Town, any disturbing, excessive, unreasonable or unusually loud or offensive noise which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

B. The characteristics and conditions which should be considered in determining whether a violation of the provisions of this section exists should include, but Not be limited to, the following:

(1) The level of the noise;
(2) Whether the nature of the noise is usual or unusual;
(3) Whether the origin of the noise is natural or unnatural;
(4) The level of the ambient noise;
(5) The proximity of the noise to sleeping facilities;
(6) The nature and zoning of the area from which the noise emanates and the area where it is received;
(7) The time of day or night the noise occurs;
(8) The duration of the noise; and
(9) Whether the noise is recurrent, intermittent, or constant.

Section 8-10-2 DECLARATION OF CERTAIN ACTS CONSTITUTING DISTURBING, EXCESSIVE, OR OFFENSIVE NOISES

The following activities, among others, are declared to cause disturbing, excessive or offensive noises in violation of this section and are unlawful, namely:

A. Excessive Animal Noise

1. Restrictions on animal noise.

The keeping or maintaining by any person of any animal or animals which by any frequent or long–continued noise causes annoyance or discomfort to a reasonable person of normal sensitiveness in the vicinity is prohibited.

2. Prima Facie Violations

The noise from any such animal or animals that disturbs two or more residents residing in separate residences adjacent to any part of the property on which the subject animal or animals are kept or maintained, or three or more residents residing in separate residences in close proximity to the property on which the subject animal or animals are kept or maintained shall be prima facie evidence of a violation of this section.

B. Yard/landscape Maintenance Equipment

1. Definition.

"yard/landscape maintenance device" as used in this section, shall mean any portable, hand–held or propelled, ridden, carried, or pushed device, which is capable of and intended for landscape and yard maintenance purposes. This includes, but is not limited to, leaf blowers, chain saws, lawn mowers, edgers, or weed or string cutters.

2. Violations.

No person shall operate, or cause to be operated, yard/landscape maintenance devices, on properties not subject to a special use permit, between sunset and sunrise on weekdays and Saturdays, and prior to 8:00 a.m. and after sunset on Sundays and on the legal holidays defined in Section 10-7-2 (10) of this Code.

C. Burglar alarms

1. Prohibitions.

Audible burglar alarms for structures or motor vehicles are prohibited unless the operation of such burglar alarms can be terminated within 10 minutes of being activated, and remain silent unless another security breach occurs.

2. Emergency disconnections.

Notwithstanding the requirements of this provision, any member of the Police Department of the Town of Paradise Valley shall have the right to take such steps as may be reasonable and necessary to disconnect any such

alarm installed in any building, dwelling, or motor vehicle at any time during the period of its activation.

3. Emergency Contact Information.

   On or after thirty (30) days from the effective date of this article, any building or dwelling upon which an audible, unmonitored burglar alarm has been installed shall prominently display the telephone number at which communication may be made with the owner of such building or dwelling.

Section 8-10-3 Exemptions

The following uses and activities shall be exempt from the regulations of this Article;

1. Noises resulting from any authorized emergency or public safety vehicle,

2. Noises resulting from any authorized emergency work,

3. Noise resulting from activities of a temporary duration for which a license or permit has been granted by the town.

4. Vehicle back up warning alarms.

Section 8-10-4 Penalty

Any person who violates any provision of this article may be prosecuted for such a violation in accordance with the provisions of article 1-9 of the Paradise Valley Town Code.

Article 8-11 AIR QUALITY AND FUGITIVE DUST [598]

Section 8-11-1 Purpose/Intent
Section 8-11-2 Definitions
Section 8-11-3 Responsibility for Administration
Section 8-11-4 Parking Restriction on Vacant Lots
Section 8-11-5 Operation of Vehicles on Public and Private Property
Section 8-11-6 Unpaved Parking Lots
Section 8-11-7 Leaf Blower Restrictions
Section 8-11-8 Compliance Monitoring
Section 8-11-9 Violations, Enforcement, and Penalties
Section 8-11-10 Violations Deemed a Public Nuisance
Section 8-11-11 Remedies Not Exclusive
Section 8-11-12 Compatibility with Other Regulations
Section 8-11-13 Severability

Section 8-11-1. PURPOSE/INTENT

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of the Town of Paradise Valley by improving air quality through the regulation of Fugitive Dust and PM-10 particles to the maximum extent practicable as required by federal and state law. This ordinance establishes methods for controlling the introduction of Fugitive Dust and PM-10 into the air. The objectives of this ordinance are:

A. To regulate the contribution of Fugitive Dust and PM-10 from any Town resident, developer or visitor.

B. To establish legal authority to carry out all inspection, surveillance, monitoring, and enforcement procedures necessary to ensure compliance with this ordinance.

Section 8-11-2. DEFINITIONS

For the purposes of this ordinance, the following shall mean:

"County Dust Control Permit" – means a permit issued by Maricopa County evidencing that a dust generating operation has a satisfactory dust control plan in place approved by the Maricopa County Air Quality Department.

"Designated Or Opened Trail System" – means roads or routes that are part of a system of trails and that are designated or opened by a government land management agency by order, sign, and/or map approved by such agency.

"Fugitive Dust" - means the particulate matter not collected by a capture system, that is entrained in the ambient air and is caused from human and/or natural activities, such as, but not limited to, movement of soil, vehicles, equipment, blasting, and wind. For the purpose of this ordinance, fugitive dust does not include particulate matter emitted directly from the exhaust of motor vehicles and other internal combustion engines, from portable brazing, soldering, or welding equipment, or from piledrivers.

"Leaf Blower" - means any air blowing machine which uses a concentrated stream of air to blow leaves, grass cuttings, trash, or other debris.

"Off-Road Vehicle" – means any self-propelled conveyance specifically designed for off-road use, including, but not limited to, off-road or all-terrain equipment, trucks, cars, motorcycles, motorbikes, or motorbuggies.

"PM-10" - means the standard adopted by the Environmental Protection Agency that focuses on smaller particulates in the air that are likely responsible for adverse health effects because of their ability to reach the lower regions of the respiratory tract. The PM-10 standard includes particles with a diameter of 10 micrometers or less (0.0004 inches or one-seventh the width of a human hair).

"Person" - means any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

"Premises" - means any building, lot parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

"Road or Highway" – means the entire width between the boundary lines of every way publicly maintained by the federal government, a city, a town or a county if any part of the way is generally open to the use of the public for purposes of vehicular travel. For purposes of this ordinance, the term "road or highway" includes designated or opened trail systems and service roads regardless of surface composition.

"Town" - means the Town of Paradise Valley, Arizona.

"Unpaved Parking Lot" - Any area larger than 3,000 square feet that is not paved and that is used for parking, maneuvering, or storing motor vehicles.

"Vacant Lot" – means any of the following: (1) an unsubdivided or undeveloped tract of land; (2) a subdivided residential, industrial, institutional, governmental, or commercial lot that contains no approved or permitted buildings, structures, or uses of a temporary or permanent nature; or (3) a partially developed residential, industrial, institutional, governmental, or commercial lot. For the purposes of this ordinance, a vacant lot is not a road or highway.

"Vehicle" – means a self propelled device and its appurtenances, excluding devices moved by human power or used exclusively on stationary rails or tracks.

Section 8-11-3. RESPONSIBILITY FOR ADMINISTRATION

The Town shall administer, implement, and enforce the provisions of this ordinance. Any powers granted or duties imposed upon the Town may be delegated in writing by the Town Manager to persons or entities acting in the beneficial interest of or in the employ of the Town.

Section 8-11-4. PARKING RESTRICTION ON VACANT LOTS

It shall be unlawful to park or use a vehicle on a vacant lot within the Town. If a vacant lot is in excess of five acres, the owner of the vacant lot shall either erect a split rail-type fence or ditch and berm the perimeter of the lot to prevent vehicular access, including, but not limited to, preventing access to off-road vehicles. Owners of vacant lots less than 5 acres may be required to erect a split rail-type fence or take other actions to prohibit vehicular access to the vacant lot if more than one complaint is received about unauthorized vehicular access on the property. This section does not apply to sites that have been issued a County Dust Control Permit.

Section 8-11-5. OPERATION OF VEHICLES ON PUBLIC AND PRIVATE PROPERTY

A. A person shall not operate any vehicle on unpaved public property within the Town without lawful authority. Lawful authority shall consist of rules, regulations, or orders of a federal agency, this state, a county or municipality, which shall be made available to the public by any one of the following:

1. A sign to designate the property is/as open. Such sign shall be in compliance with the standard travel management sign protocol used by Southwest Land Management Agencies and shall at a minimum be conspicuously placed at all points of vehicular access and contain the following information: "Travel Must Remain On Designated Routes." Copies of the standard travel management sign protocol are available for review at the Maricopa County Air Quality Department, 1001 North Central Avenue, Phoenix, AZ, 85004.

2. Orders of a government land management agency.

3. Most current maps approved by such government land management agency.

4. Virtual posting from a government land management agency.

B. A person shall not operate any vehicle on unpaved private property within the Town without the consent of the lawful owner. Consent of the lawful owner consists of either or both of the following:

1. A sign to designate the property is/as open. Such sign shall be in compliance with the standard travel management sign protocol used by Southwest Land Management Agencies and shall at a minimum be conspicuously placed at all points of vehicular access and contain the following information: "Travel Must Remain On Designated Routes." Copies of the standard travel management sign protocol are available for review at the Maricopa County Air Quality Department, 1001 North Central Avenue, Phoenix, AZ, 85004.

2. Prior written permission which contains the following:

(a) The name, address, and telephone number of the person granting permission for the use of the property;

(b) A description of the interest the person granting permission has in the property (i.e., property owner, lessee, or agent);

(c) If the person granting permission is not the owner of the property, the written permission shall also contain the name, address, and telephone number of the property owner;

(d) Specify the period of time for which permission for the use of the property is being granted; and

(e) The signature of the person granting permission for the use of the property.

C. Whenever any person is stopped by an Enforcement Officer for a violation of Section 8-11-5 of this Ordinance, he/she shall, upon the request of the Enforcement Officer identify or present the lawful authority or consent of the lawful owner required in this section.

D. The property owner, person entitled to immediate possession of the property, or invitee who has lawful authority may operate such vehicles on the property if such use does not violate any other applicable laws.

E. For the purposes of this section, unpaved public or unpaved private property does not include roads or highways.

Section 8-11-6. UNPAVED PARKING LOTS

A. All owners/operators of an existing unpaved commercial parking lot shall stabilize the surface area(s) of the lot on which vehicles enter and park by implementing one of the following measures after first obtaining approval of the Town Engineer or designee: (1) pave; (2) apply chemical/organic stabilizers in sufficient concentration and frequency to maintain a stabilized surface; or (3) apply and maintain surface gravel uniformly to stabilize the surface.

B. All owners/operators shall maintain parking, maneuvering, ingress and egress areas at developments other than residential buildings with four or fewer units with one or more of the following dustproof paving methods:

1. asphaltic concrete
2. cement concrete
3. penetration treatment of bituminous material and seal coat of bituminous binder and a mineral aggregate
4. a stabilization method approved by the Town

C. All owners/operators shall maintain parking, maneuvering, ingress and egress areas that are three thousand square feet or more in size at residential buildings with four or fewer units with a paving or stabilization method authorized by the Town Code or permit.

Section 8-11-7. LEAF BLOWER RESTRICTIONS

It shall be unlawful to blow landscape debris into public roadways at any time by any person.

Section 8-11-8. COMPLIANCE MONITORING

A. Right of Entry: Inspection

The Town shall be permitted to enter and inspect property subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance.

1. If a property owner has security measures in force, which require proper identification and clearance before entry into its premises, the property owner shall make the necessary arrangements to allow access to representatives of the Town.

2. Any temporary or permanent obstruction to safe and easy access to the property to be inspected shall be promptly removed by the property owner at the written or oral request of the Town and shall not be replaced. The costs of such access shall be borne by the property owner.

B. Search Warrants

If the Town has been refused access to any part of the premises found to be in violation of this ordinance, and he/she is able to demonstrate probable cause to believe that there may be a violation of this ordinance, or that there is a need to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, the Town may seek issuance of a search warrant from any court of competent jurisdiction.

C. Exemption

This Ordinance shall not apply during a period of emergency or if the operation is directed by a peace officer or other public authority.

Section 8-11-9. VIOLATIONS, ENFORCEMENT, AND PENALTIES

A. A person who violates this Ordinance is guilty of a class 3 misdemeanor.

B. In addition to or in lieu of a fine pursuant to this section, a judge may order the person to perform at least eight but not more than twenty-four hours of community restitution or to complete an approved safety course related to the off-highway operation of motor vehicles, or both.

B. For violations of this Ordinance, the Enforcement Officer shall use a uniform traffic ticket and complaint prescribed by the rules of procedure in civil traffic cases adopted by the Supreme Court. The Enforcement Officer may issue a citation to persons in violation of this Ordinance.

Section 8-11-10. VIOLATIONS DEEMED A PUBLIC NUISANCE

In addition to the enforcement process and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this ordinance is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator’s expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

Section 8-11-11. REMEDIES NOT EXCLUSIVE

The remedies listed in this ordinance are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the Town to seek cumulative remedies.

The Town may recover all attorney's fees, court costs and other expenses associated with enforcement of this ordinance, including monitoring expenses.

Section 8-11-12. COMPATIBILITY WITH OTHER REGULATIONS

This ordinance is not intended to modify or repeal any other ordinance, rule, regulation, or other provision of law. The requirements of this ordinance are in addition to the requirements of any other ordinance, rule, regulation, or other provision of law, and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule, regulation, or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.

Section 8-11-13. SEVERABILITY

The provisions of this ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this ordinance or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this ordinance.

FOOTNOTES

157 - Ordinance #276 -12/17/87 (Total Revision)
177 - Ordinance #301 - 7/27/89
368 - Ordinance #368 - 2/24/94
369 - Ordinance #369 - 2/24/94
370 - Ordinance #370 - 3/24/94
396 - Ordinance #396 - 2/9/95
417 - Ordinance #417 - 6/13/96
418 - Ordinance #418 - 6/13/96
420 - Ordinance #420 - 6/13/96
448 - Ordinance #448 - 1/22/98
456 - Ordinance #456 - 1/22/98
457 - Ordinance #457 - 2/12/98
468 - Ordinance #468 - 8/27/98
503 – Ordinance #503 – 05/11/2000
517 – Ordinance #517 – 9/13/2001
520 – Ordinance #520 – 01/24/2002
542 – Ordinance # 542 – 07/8/2004
549 – Ordinance # 549 – 01/13/2005
573 – Ordinance # 573 – 02/09/2006
598 – Ordinance # 598 – 12/20/2007
601 – Ordinance #601 – 02/28/2008
618 - Ordinance #618 – 11/19/2009
623 - Ordinance #623 – 05/27/2010
631 – Ordinance #631 – 09/08/2011

CHAPTER 9 LAW ENFORCEMENT DEPARTMENT

Article 9-1 **LAW ENFORCEMENT DEPARTMENT**

9-1-1 Created, Composition
9-1-2 Compensation of Police Chief
9-1-3 Departmental Rules and Regulations
9-1-4 Answering Calls Outside the Town
9-1-5 Disputes Involving Property in the Possession of the Police Department [453]

Article 9-2 **POLICE OFFICERS AND RESERVE OFFICERS**

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Article 9-3 **ALARM SYSTEMS** [651]

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9-1-5 Disputes Involving Property in the Possession of the Police Department [453]

Section 9-1-1 Created; Composition

There is hereby created a law enforcement department for the Town which shall consist of a Police Chief, and as many police officers and reserve officers as may from time to time be deemed necessary by the Council for the safety and good order of the Town.

Section 9-1-2 Compensation of Police Chief

The Police Chief and the police officers shall not receive any perquisites, commissions, or compensations for their services, except as the Council may prescribe.

Section 9-1-3 Departmental Rules and Regulations

The law enforcement department shall be operated and managed in accordance with such departmental rules and regulations as may from time to time be adopted by the Council.

Section 9-1-4 Answering Calls Outside the Town

The members of the department are duly authorized to answer calls for aid and assistance beyond the corporate limits of the Town pursuant to mutual aid and assistance agreements and State statutes.

Section 9-1-5 Disputes Involving Property in the Possession of the Police Department

A. When the police department possesses property that it has obtained in the normal course of work but no longer needs, the police department shall determine whether disposal of the property is provided for by law and effect such disposal. Where property disposition is not otherwise provided by law, notice of property available

for release or return shall be given to person(s) claiming ownership interest that the property must be claimed within thirty (30) days following the date of the notice or it will be disposed of by the department. Thereafter, if the property remains unclaimed or if the owner or other claimant is unknown, the police department may petition for, and the Municipal Court may order, escheatment and disposal of the property as requested by the department.

B. If a dispute exists over the ownership of property whose disposition is not otherwise prescribed by law, and the property is claimed by more than one person, then the police department shall file a Request for Interpleader in the Municipal Court for a hearing to be conducted to determine the ownership of the property. The police department shall mail copies of the request to each person who is claiming ownership.

C. Upon filing the Request, the Municipal Court shall schedule a hearing on the matter and provide written notification of the hearing date, time and location to each person who is claiming ownership of the property. The hearing shall be governed by the Arizona Rules of Procedure in Civil Traffic Violation Cases. The technical rules of evidence shall not apply and decisions shall be based upon the preponderance of the evidence. The Court shall allow testimony to be given orally or through sworn affidavits. Final decisions of the Court are subject to appeal to the Superior Court within thirty (30) days after the date of the order of the Municipal Court pursuant to the Rules of Procedure for Special Actions. When the time for appeal has expired or, if the decision of the Municipal Court is appealed, when a final order is issued by the Superior Court, the Municipal Court shall notify the party awarded the property that they may obtain the property from the police department. The Municipal Court shall provide a copy of this notification to the police department.

Article 9-2 POLICE OFFICERS AND RESERVE OFFICERS

9-2-1 Qualifications of Members
9-2-2 Oath Required
9-2-3 Training

Section 9-2-1 Qualifications of Members

The qualifications for appointment and duty of all members of the law enforcement department shall be in accordance with practices established by the personnel regulations adopted by the Town Council.

Section 9-2-2 Oath Required

Each appointee, before entering upon his duties, shall sign an oath stating that he will faithfully perform the duties of reserve or police officer.

Section 9-2-3 Training

The Police Chief shall conduct a period of pre-assignment training for reserve and police officers sufficient to enable the reserve and police officers to properly and adequately perform their required duties. Further, the Police Chief may require such additional continuing training as he may find necessary.

Article 9-3 ALARM SYSTEMS [651]

9-3-1 Purpose
9-3-2 Definitions
9-3-3 Applicability
9-3-4 Administration
9-3-5 Notices
9-3-6 Limitation of Liability
9-3-7 Alarm Business Responsibility for Notifying Public Safety Personnel
9-3-8 Alarm User Responsibilities
9-3-9 False Alarm Warnings and Fines/Assessments
9-3-10 False Alarm Dispute and Review
9-3-11 Appeal Procedures
9-3-12 Decision of Town Manager
9-3-13 Offenses; Penalty

Section 9-3-1 Purpose

Alarm systems that are improperly installed, maintained, or operated result in false alarms that waste public safety resources, to the detriment of the community at large. This Article is intended to encourage the improvement in reliability of alarm systems, devices, and services, and to ensure that Town Police personnel will not be unduly diverted from responding to actual criminal activity as a result of false alarms.

Section 9-3-2 Definitions

The following words, terms and phrases, when used in this Article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Activate or activation means setting off or triggering an alarm system, whether intentionally or unintentionally, rather than placing an alarm system in a state of readiness, as upon the completion of installation or when arming the alarm system.

Act of God means an unusual, extraordinary, sudden, and unexpected manifestation of the forces of nature, causing collateral damage, which cannot be prevented by reasonable care, skill, or foresight.

Alarm agent means a person, whether an employee, an independent contractor or otherwise, who acts on behalf of an alarm business and who tests, maintains, services, repairs, sells, rents, leases or installs alarm systems other than an alarm system located on the person's own property or the property of the person's employer.

Alarm business means:
(a) any person who, either alone or through a third party, engages in the business of either of the following:
(i) Providing alarm monitoring services.
(ii) Selling, leasing, renting, maintaining, repairing or installing a non-proprietor alarm system or service.
(b) Does not include any of the following:
(i) A person or company that purchases, rents or uses an alarm that is affixed to a motor vehicle.
(ii) A person who owns or conducts a business of selling, leasing, renting, installing, maintaining or monitoring an alarm that is affixed to a motor vehicle.
(iii) A person who installs a non-monitored proprietor alarm for a business that the person owns, is employed by or manages.
(iv) The installation or monitoring of fire alarm systems.
(v) An alarm system that is operated by a city or town.

Alarm system means (a) any mechanical or electrical device that is designed to emit an audible alarm or transmit a signal or message if activated and that is used to detect an unauthorized entry into a building or other facility or alert other persons of the occurrence of a medical emergency or the commission of an unlawful act against a person or in a building or other facility; (b) includes a silent, panic, holdup, robbery, duress, burglary, medical alert or proprietor alarm that requires emergency personnel to respond; (c) does not include a telephone call diverter or a system that is designed to report environmental and other occurrences and that is not designed or used to alert or cause other persons to alert public safety personnel.

Alarm user means any person who purchases, leases, rents, contracts for, or otherwise obtains for use an alarm system and who is responsible for the premises where an alarm system is located.

Audible alarm means a device designed to generate an audible sound when an alarm system has been activated.

Common cause means a reason that an alarm system generates a series of false alarms, all of which occur in a seventy-two (72) hour period, which could not be reasonably corrected before subsequent activations within the seventy-two (72) hour period.

False alarm means an activation of an alarm system that results in a public safety personnel dispatch to premises where the alarm system is activated, with no evidence at the premises of a crime or emergency, as emergency is determined by public safety personnel. An activation resulting in a criminal report will not be counted as a false alarm.

False alarm assessment means the second and each additional false alarm generated by a particular alarm user within the same calendar year.

Final notice means a letter sent to advise of a past due amount, which also advises of pending collection activity with a private collection service unless arrangements are made within ten (10) days of receipt.

Monitoring agency means any person or organization that is legally or contractually responsible for monitoring one (1) or more alarm systems located in the Town.

Police means the Town of Paradise Valley Police Department.

Premise(s) means the land, building, facility and/or area intended to be protected by an alarm system.

Public safety personnel means a Town representative who is a member of the police department or fire service.

Responsible representative means a person to be notified when an alarm system is activated, as designated by an alarm user.

Verify or verification means to attempt by an alarm company to contact the premises and/or alarm user by telephone and/or other electronic means, to determine whether an alarm system activation is a false alarm.

Section 9-3-3 Applicability

This Article shall apply to all alarm systems in the Town except:

A. Audible alarms installed in or used in motorized transportation, including but not limited to motor vehicles and boats;
B. Telephone call diverters and systems designed to report environmental and other occurrences that are not intended to alert public safety personnel;
C. Water flow alarms;
D. Manually-activated emergency medical and check welfare alarm systems; and

Stand-alone, battery-operated smoke alarms that are not wired or otherwise connected to an alarm system.

Section 9-3-4 Administration

The administration of this Article, including the duty of prescribing forms, is vested in the Chief of the Paradise Valley Police Department "PVPD", who may delegate responsibility for the enforcement of its terms to a designee.

Section 9-3-5 Notices

A. All notices under this Article shall be in writing. The PVPD may require any notice to be given on a form prescribed by the PVPD.
B. Except for final notices, notices from the Town shall be sent by regular mail to the last address recorded with the Town. In addition, notices may also be electronically-delivered. When the PVPD reasonably believes that the address of record is incorrect, the PVPD may mail the notice to any reasonably current address known to the PVPD, including, but not limited to those shown on any Town permits and the address on a criminal citation, police record, or other report.
C. Final notices shall be mailed, posted with the United States Postal Service, by certified mail, restricted delivery to the addressee only, return receipt requested.
D. Notices that are mailed are deemed given upon the earlier of the date received or five (5) business days from the date of notice.
E. Notices that are electronically-delivered are deemed given on the date delivered.
F. Compliance with the mailing provisions of this section constitutes valid notice. The Town is not required to prove actual receipt of notice or actual knowledge of a denial or revocation.

Section 9-3-6 Limitation of Liability

The Town is not liable for any failure or neglect:

A. To respond appropriately upon receipt of an alarm system activation, or
B. On the part of any person or business utilizing an alarm system.

Section 9-3-7 Alarm Business Responsibility for Notifying Public Safety Personnel

A. Except when the type of alarm system activated may make verification inappropriate (including robbery, fire, duress, and panic alarm signals), an alarm business shall verify the alarm system activation first, at the premises, and if no one at the premises is able to inform the alarm business about the activation, second, with the alarm user. The verification shall be made before requesting public safety personnel dispatch.
B. When an alarm business notifies public safety personnel of an alarm system activation, the alarm business shall provide the following information:

1. The specific location in the premises, identifying the nearest room and its relationship to north, where the alarm system was activated.
2. The estimated time of arrival of the alarm user, responsible representative, or alarm agent if requested by public safety personnel, including the name of the person responding and a description of the person or vehicle responding.

C. When requested to do so by public safety personnel, an alarm business shall arrange for the alarm user, alarm user's responsible representative, or alarm agent to go to the premises of an activated alarm system within thirty (30) minutes of the request to assist public safety personnel in determining the reason for the activation, resetting the alarm system, and securing the premises.

D. A responsible representative or alarm agent shall respond to the scene of an alarm system activation as expeditiously as safety permits, without unnecessary or unreasonable delay.

Section 9-3-8 Alarm User Responsibilities

All alarm users within the Town of Paradise Valley shall:

A. Maintain the alarm system in good working order and take all reasonable and practicable steps to prevent false alarms. The alarm system shall be inspected once a year by a licensed alarm business to ensure the alarm system is in proper working order.

B. Respond or arrange for response to the premises of an activated alarm system by an alarm agent or responsible representative within thirty (30) minutes of any public safety personnel request.

C. Except for a fire alarm system, assure that any audible alarm is deactivated within ten (10) minutes of activation.

Section 9-3-9 False Alarm Warnings and Fines/Assessments

A. When an alarm system generates a false alarm at any time within a calendar year, PVPD shall send a warning letter to the alarm user that each additional false alarm within the same calendar year will be assessed a false alarm assessment in an amount as set forth in the Town of Paradise Valley Master Fee Schedule. For the second and each additional false alarm within the same calendar year, the alarm user shall be assessed a false alarm assessment in an amount as set forth in the Town of Paradise Valley Master Fee Schedule.

B. No activations shall be counted and no false alarm assessments shall be assessed for an alarm system activation that results in the police preparing a departmental criminal report or the fire department preparing a run report with evidence of fire or other emergency.

C. All false alarm assessments shall become due and payable when a statement of charges is mailed to the alarm user and shall become delinquent thirty (30) days after being mailed.

Section 9-3-1 0 <u>False Alarm Dispute and Review</u>

A. An alarm user may submit a written dispute of a false alarm reported in a False Alarm Warning letter sent by the PVPD.

B. Upon receipt of a false alarm assessment, where false alarm fines/assessments are indicated due, an alarm user may submit a written dispute of the false alarm that generated the false alarm assessment within ten (10) days of the date of the false alarm assessment. The dispute of a false alarm assessment received after thirty (30) days after the date of mailing shall be deemed late, and the rights of dispute and review are waived.

C. The review request shall include:
   1. A statement of the grounds in subsection (D) below that justify waiver of the false alarm assessment,
   2. What actions have been taken to eliminate false alarms in the future, and
   3. Copies of any documentation such as inspection and service reports the alarm user intends to rely upon.

D. Grounds for waiver are an act of God or common cause, or an alarm system activation for which the police prepares a departmental criminal report or the fire department prepares a run report with evidence of fire or other emergency.

E. If the activation or false alarm assessment results from a common cause, the PVPD may waive all but one activation or false alarm assessment if the PVPD finds:
   1. There have been actions taken to eliminate the common cause, and
   2. There are no additional activations of the alarm system from the common cause.

F. The PVPD shall give written notice to the alarm user of its findings. If good cause for relief has been shown, the false alarm assessment shall be waived. If the alarm user is still responsible for false alarm assessment(s), the PVPD shall give written notice to the alarm user within ten (10) days of receipt of dispute letter and indicate that the false alarm assessment(s) are due and payable on receipt of the notice.

Section 9-3-11 <u>Appeal Procedures</u>

A. An alarm user aggrieved by the decision resulting from a false alarm or false alarm assessment dispute may appeal to the Town Manager by written request within ten (10) working days of the PVPD's decision. The request shall be filed with the PVPD or the Town Manager's designee.

B. The request for an appeal shall set forth the specific objections to the decision of the PVPD which form the basis of the appeal.

C. The Town Manager shall set a time and place for the hearing as soon as practicable.

D. The hearing shall be informal and shall proceed as determined by the Town Manager, who may determine the length of the hearing, the manner of presenting

evidence, and the order of evidence. No formal rules of evidence shall be required in conducting the hearing.

E. The alarm user and the Town may present witnesses and written evidence subject to any limitation imposed by the Town Manager. The burden of proof to show that the activation or false alarm assessment should be waived is on the alarm user.

Section 9-3-12 Decision of Town Manager

A. The Town Manager's decision shall be based upon the evidence presented and rendered within ten (10) business days of the hearing.

B. If the Town Manager affirms the false alarm assessment(s), the Town Manager shall give written notice to the alarm user, including, if applicable, the amount due and the due date, which shall not be later than ten (10) days after the date of the notice.

C. If the Town Manager finds that grounds exist for waiving the false alarm assessments, the Town Manager shall give written notice to the alarm user of any amount due and the due date, which shall not be later than ten (10) days after the date of the notice.

D. The decision of the Town Manager shall be final.

Section 9-3-13 Offenses; Penalty

A. It shall be unlawful for any person to:
   1. Intentionally, knowingly or recklessly activate any alarm system, except to warn of a criminal act or other emergency.
   2. Place into operation, monitor, or use an alarm system that is known to be defective or contains defective components such as depleted batteries.
   3. Install, place into operation, monitor, or use any security device or system that emits any medium that could obscure the premises.

B. It shall be unlawful for an alarm agent, while servicing an alarm system at a premises, to activate an alarm system negligently which results in the arrival of public safety personnel.

C. It shall be unlawful for an alarm user or an alarm user's responsible representative to fail to arrive at the premises where an alarm system has been activated, within thirty (30) minutes of activation, after being requested to do so by public safety personnel.

D. Violators of the terms of this Article are subject to the provisions set forth in Article 1-9 of the Town of Paradise Valley Code.

FOOTNOTES

98 Ordinance #203 - 4/28/83
113 Ordinance #222 - 9/27/84
129 Ordinance #245 - 6/26/86
139 Ordinance #255 - 12/4/86
144 Ordinance #260 - 2/12/87
148 Ordinance #265 - 4/9/87
154 Ordinance #273 - 8/27/87
165 Ordinance #289 -10/13/88
384 Ordinance #384 - 12/15/94
453 Ordinance #453 - 12/18/97
618 Ordinance #618 – 11/19/2009
651 Ordinance #651 – 06/28/2012

CHAPTER 10 OFFENSES

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CHAPTER 10 OFFENSES

Article 10-1 FALSE REPORTS [157]

Section 10-1-1 False Reports

It is unlawful for any person willfully to make to the office of the Chief of Police any false, fraudulent, misleading, or unfounded report or statement, or willfully misrepresent any fact for the purpose of interfering with the operation of the Police Department or with the intention of misleading any police officer.

Article 10-2 CLEAN INDOOR AIR ACT [149]

10-2-1 Definitions
10-2-2 Purpose
10-2-3 Regulation of Smoking in Enclosed Public Places
10-2-4 Exceptions
10-2-5 Posting
10-2-6 Tobacco Products Vending Machines [208]
10-2-7 Penalties and Enforcement

Section 10-2-1 Definitions

1. Bar means an area devoted primarily to alcoholic beverage service in which food service is only incidental.

2. Enclosed Public Place means any area closed in by a roof and walls with openings for ingress and egress which is customarily used by the public. Enclosed public places include, but are not limited to, elevators, waiting rooms, reception areas, lobbies, rest rooms, retail stores, retail service establishments, public and private schools, offices of health care professionals, pharmacies, indoor sports facilities, resort hotel public areas, financial institutions, any public places already regulated by A.R.S. Section 36-601.01, and restaurants.

3. Private clubs and recreational facilities mean those enclosed places to which access is limited by membership in an organized association.

4. Private function means an activity in which participation is limited by specific invitation.

5. To smoke or smoking means burning or carrying any lighted cigarette, tobacco or any other weed or plant or placing any burning tobacco, weed or plant in an ashtray or other receptacle and allowing smoke to diffuse into the air.

Section 10-2-2 Purpose

Because the smoking of tobacco and other plants is a health hazard to those exposed to the smoke and is a source of annoyance and discomfort to those present in confined areas where smoke is present, this Ordinance shall regulate smoking in enclosed public places.

Section 10-2-3 Regulation of Smoking in Enclosed Public Places

A. Smoking is prohibited in restrooms, public areas of stores, markets, shops, offices, clinics, hotels, resorts, restaurants and all other enclosed public places except in designated smoking areas.

B. Provision for the maintenance of separate non-smoking areas of not less than 25% of the seating capacity or floor space, whichever is greater, in restaurants, cafeterias, lunchrooms and other eating establishments shall be provided.

C. Hosts, hostesses, maitre d's, waiters, waitresses, owners or designated employees must advise guests upon making reservations or upon arrival that non-smoking areas are or are not provided and, if provided, ask whether or not the guests prefer non-smoking areas.

D. The owner or operator of any restaurant, cafeteria, lunchroom or other establishment who believes that reservation of 25% of its seating capacity or floor space represents a non-smoking proportion so large that it creates a hardship may appeal to the Town Council for an exception and the Town Council shall have discretion to lower the 25% requirement.

Section 10-2-4 Exceptions

The following areas shall not be subject to the smoking restrictions of this Article:

A. Private residences.

B. Bars and lounges.

C. Resort and hotel rooms not specifically designated as non-smoking rooms, rented to guests.

D. Resort and hotel public and private conference/meeting rooms, while these rooms are being used exclusively for private functions.

E. Private clubs and recreation facilities.

F. Private offices of owners/executives.

Section 10-2-5 Posting

A. Any person who owns, manages, operates or otherwise controls the use of any premises subject to this Article has the responsibility:

(1) to set aside required "no smoking" areas;

(2) to properly post the required signs.

B. "Smoking" or "No Smoking" signs, whichever are appropriate, or the international "No Smoking" symbol (consisting of a picture of a burning cigarette inside a red circle with a red bar across it) shall be clearly and conspicuously posted by the person in control in every place where smoking is controlled by this Article.

C. Any owner, manager, or operator of any establishment, controlled by this Article shall, upon either observing or being advised of a violation of Section 10-2-3, have the obligation to inform the violator of the appropriate requirements of this law and then request immediate compliance.

D. A violation of this Section is a petty offense, punishable by a fine not to exceed Three Hundred Dollars ($300).

Section 10-2-6 Tobacco Products Vending Machines [208]

A. Except as provided in paragraph B of this Section, if a business has vending machines that disperse tobacco products, then the vending machines dispensing tobacco products must be located in areas accessible only to employees working on the premises.

B. Vending machines that dispense tobacco products are allowed only in bars associated with those restaurants that are not part of a resort complex.

C. The vending machines allowed by paragraph B of this Section must be within the immediate control of the bartender.

D. It is the responsibility of the proprietor of the business to ensure compliance with this Section 10-2-6.

The purpose of this ordinance is to prevent minors purchasing tobacco products.

Section 10-2-7 Penalties and Enforcement

Except as noted in Section 10-2-5(D), any person found guilty of violating any of the provisions of this Ordinance shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not to exceed $1,000 or by imprisonment for a period not to exceed six months, or by both such fine and imprisonment. Each day that a violation continues shall be a separate offense punishable as described.

Article 10-3 LOITERING; PROSTITUTION [126]

10-3-1 Loitering Prohibited
10-3-2 Circumstances to Cause Alarm
10-3-3 Opportunity to Dispel Alarm
10-3-4 Requisites for Conviction
10-3-5 Prostitution, Assignation, Lewd or Indecent Acts

Section 10-3-1 Loitering Prohibited

It shall be unlawful for any person to loiter or prowl in a place, at a time or in a manner not usual for law abiding individuals under circumstances that warrant alarm for the safety of persons or property in the vicinity.

Section 10-3-2 Circumstances to Cause Alarm

Among the circumstances which may be considered in determining whether alarm is warranted is the fact that the person takes flight upon appearance of a police officer, refuses to identify himself or endeavors to conceal himself or any object.

Section 10-3-3 Opportunity to Dispel Alarm

Unless flight by the person or other circumstances makes it impracticable, a police officer shall, prior to any arrest for an offense under this division, allow the person an opportunity to dispel any alarm which would otherwise be warranted by requesting him to identify himself and explain his presence and conduct.

Section 10-3-4 Requisites for Conviction

No person shall be convicted of an offense under this provision if the police officer did not comply with the preceding section, or if it appears at trial that the explanation given by the person, if believed by the police officer at the time, would have dispelled the alarm.

Section 10-3-5 Prostitution, Assignation, Lewd or Indecent Acts

It shall be unlawful for any person to aid, offer or agree to commit, or commit any act of prostitution, assignation, or lewd or indecent acts; or to behave or conduct himself in such a manner as to be injurious to the health or morals of others.

A. Hiring of Premises. It shall be unlawful for any person to hire or use any apartment, room or tenement for the purpose of assignation, prostitution or any lewd or indecent act. No person shall let any apartment, room or tenement, knowing or under such circumstances that should cause a person of reasonable understanding to know that it is to be used for the purpose of assignation, prostitution or any lewd or indecent act.

B. Securing Another for Purpose. It shall be unlawful for any person to offer to secure or secure another for the purpose of committing any act of prostitution, assignation, or for any other lewd or indecent act with any other person.

C. Transportation of Persons. It shall be unlawful for any person to knowingly transport any person to any place where he may commit, or for the purpose of committing any act of prostitution, assignation or any lewd or indecent act.

D. Receiving of Persons. It shall be unlawful for any person to knowingly receive, offer or agree to receive any person into any apartment, room, tenement or other building for the purpose of committing any act of prostitution, assignation or other lewd or indecent act, or to knowingly permit any person to remain there for such purposes.

E. Directing Others. It shall be unlawful for any person to knowingly direct any other person to any place for the purpose of committing any act of prostitution, assignation, or any lewd or indecent act.

F. Visiting. No person shall knowingly visit, attend, resort to, or be in any location where prostitution is being committed, conducted or performed, or where any acts offensive to public decency are being conducted, engaged in or permitted.

G. Aiding or Abetting. It shall be unlawful for any person to in any manner aid, abet, or participate in the doing of the acts prohibited in the above sections.

Article 10-4 OFFENSES AGAINST PROPERTY AND PRIVACY; GRAFFITI; TRESPASSING AND RESIDENTIAL SOLICITATION [157 378 457 560]

10-4-1 Graffiti Prohibited [378 457] Repealed and Re-enacted
10-4-2 Reserved
10-4-3 Trespassing Prohibited
10-4-4 Residential Solicitation of Sales and Contributions [42 144 560 578]

Section 10-4-1 Graffiti Prohibited [457]

A. Purpose and Intent

1. The purpose of this chapter is to provide a program for abatement of graffiti from public and private property to reduce blight and deterioration within the Town, protect public safety, and to expedite removal of graffiti from structures on both public and private property. The Town Council finds and determines as follows:

2. Graffiti, on both public and private property, creates a condition within the Town which results in blight and deterioration of property values and of the comfortable enjoyment of life and property for adjacent and surrounding residents and owners, and contributes to the overall detriment of the Town.

3. Graffiti constitutes a public nuisance and a threat to public safety which must be abated to alleviate the detrimental impact of such graffiti on the Town, and to prevent the further spread of graffiti.

4. Certain categories of graffiti which incite violence are especially harmful and must be removed as quickly as possible to avoid or minimize harm to persons and the whole community.

B. Definitions

1. *Aerosol paint container* means any aerosol container which is adapted or made for the purpose of spraying paint.

2. *Broad tip marker* means any marker or similar implement which has a writing surface which is one-half (½) of an inch or greater and containing anything other than a solution which can be removed with water after the solution dries.

3. *Graffiti* means a drawing or inscribing a message, slogan, sign or symbol or mark of any type that is made on any public or private building, structure or surface, and that is made without permission of the owner.

4. *Graffiti implement* means an aerosol paint container, broad tip marker, paint stick, graffiti stick or bleeder.

5. *Paint stick, graffiti stick, or bleeder* means an implement containing paint, wax, epoxy, or other similar substance.

6. *Responsible party* means an owner, occupant, lessor, lessee, manager, licensee, or other person having the right to control such property.

C. Possession of Graffiti Implements Prohibited

1. No person shall knowingly possess any graffiti implement with the intent to use the implement for the purpose of committing criminal damage.

2. Violation of this section by an adult is a class 1 misdemeanor, punishable by a term of not less than forty-eight (48) hours in jail and not less than eighty (80) hours of community service. Violation of this section by a juvenile is a class 1 misdemeanor, punishable as provided for in Title 8, Arizona Revised Statutes.

D. Graffiti Prohibition and Removal

1. Graffiti prohibited. All sidewalks, walls, buildings, fences, signs, and other structures or surfaces shall be kept free from graffiti when the graffiti is visible from the street or other public or private property.

2. Notice of Violation. If it is determined by the city that graffiti exists on property in violation of this Ordinance, the Town shall, in writing, notify the responsible party with a notice of violation. The notice may be served by certified mail, personal service, or by posting the subject property and publishing the notice in the official Town newspaper.

3. Contents of Notice of Violation. The notice of violation shall identify the property in violation, shall generally describe the location of the graffiti, and shall direct that the graffiti be abated within ten days of receipt of the notice. The notice shall state that in the event the responsible party fails to abate the graffiti within the time period specified in the notice of violation, the Town shall abate the graffiti and may bill the responsible party for the costs. The notice shall state that the responsible party may appeal the notice by filing a written notice of appeal with the Town Clerk within the same time period given to abate the graffiti. The effective date of the notice of violation shall be the date received if delivered in person or sent by certified mail, or the date of first publication, if the alternate method of service is used.

4. Town's Authority to Abate. If the responsible party fails to abate the graffiti as required by the notice of violation, the Town may proceed to abate the graffiti, and may bill the responsible party for the costs thereof. The Town or its authorized private contractor is expressly authorized to enter private property and abate graffiti thereon in accordance with this section. The Town Police Department shall assist in the enforcement of this ordinance.

E. Penalties

1. Any person found guilty of violating any provision of this ordinance shall be guilty of a class one misdemeanor punishable by a fine not to exceed Two Thousand Five Hundred Dollars ($2,500) and/or by imprisonment not to exceed six (6) months. Each day that a violation continues shall be a separate offense.

2. A Judge shall not suspend any part or all of the imposition of any jail time, community service, or fine required by this ordinance or other applicable code provision.

3. At the request of the affected property owner, a Judge shall order a person convicted under this section to restore the surface upon which the graffiti was applied.

4. If a person other than the person convicted of violating this section has abated the graffiti, then a Judge shall order reimbursement of the cost of said abatement as restitution.

5. If any section, subsection, sentence, clause, phrase or portion of this ordinance or any part of these amendments to the Town Code adopted herein by reference is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions thereof.

Section 10-4-2 Reserved

Section 10-4-3 Trespassing Prohibited

A person is guilty of the offense of trespassing and shall be punished as provided by Article 10-6 of the Town Code if such person willfully enters the privately owned real property of another without the express or implied permission of the owner or lawful occupant of such real property under any of the following circumstances:

A. The person enters any house, garage, barn, shed, office, store, residence, greenhouse, tack room, or other building on the subject real property.

B. The owner or lawful occupant of the subject real property had previously requested that the person charged under this section not enter the subject real property, and this request had in fact been communicated to the person charged.

C. The owner or lawful occupant of the subject real property asked the person charged under this section to leave the subject real property, and this request had in fact been communicated to the person charged and thereafter the person charged failed to promptly leave the subject real property.

D. The person remains on the subject real property for ten minutes or longer.

E. The person causes any damage or harm to the subject real property or fixtures or to any personal property thereon.

F. The owner or lawful occupant of the subject real property has posted or caused to be posted a sign or signs which conspicuously state "no trespassing" or other words which clearly indicate that trespassing is contrary to the wishes of the owner or lawful occupant of the subject real property and the person charged under this section was aware or should have been aware of such a sign or signs.

G. The person intentionally activates a burglar or fire alarm or electronic security system with the intent to harass the owner or lawful occupant of the subject real property or to harass the private company, firm, or person employed to monitor the system.

Section 10-4-4 Residential Solicitation of Sales and Contributions [42] [90] [144] [560] [578]

A. It shall be unlawful for any person, without first obtaining a permit pursuant to paragraph E, to go to the dwelling of another person with the intent to attempt to sell some product, thing or service to a person or persons at such dwelling, unless the person qualifies for one of the exemptions set forth in paragraph D.

B. It shall be unlawful for any person, without first obtaining the permission of the dwelling resident, to throw, deposit or distribute any object**,** item or material onto the property of the dwelling resident for the purpose of selling some product, thing, or service to a person or persons at such dwelling, unless the person qualifies for the exemption set forth in paragraph D(2).

C. For the purposes of this section, "dwelling" means any building, or portion, patio, entranceway, or front door area thereof, which is designed or used exclusively for residential purposes or purposes which are an accessory use or uses to residential use.

D. The prohibitions of this section shall not apply to the following classes of persons:

1. A person who has the permission of a resident of the subject dwelling to come to the subject dwelling.

2. A person who personally and regularly delivers a newspaper to dwellings, where (a) such person is acting within the scope of, or in furtherance of, his newspaper delivery business, and (b) where the subject dwelling is within the delivery route or delivery area in which the person personally and regularly delivers such newspaper.

3. Nonprofit organizations recognized as exempt from federal income tax under 26 U.S.C. 501(C)(3) unless the dwelling or lot upon which the dwelling is located

displays a “no trespassing” sign or other sign indicating that solicitors, canvassers or peddlers are not welcome.

E. Any person desiring to engage in the activity described in paragraph A shall first apply to the Police Chief for a commercial solicitation permit. The application for such permit shall be on a form supplied by the Police Chief and shall include the following information: (1) name, address, date of birth, and social security number of the applicant (2) name and address of the organization, business, or other entity that the applicant represents, (3) a brief description of the nature of the business that the organization, business, or other entity is engaged in, including the goods to be sold or the services offered, (4) the name, address, and social security number of a responsible corporate officer employed by the organization, business, or other entity, (5) proof of a valid tax license if engaged in the sale of goods, and (6) presentation of a valid driver license or identification card issued to the applicant The Police Chief shall issue a commercial solicitation permit within three business days of the receipt of the completed application and fee. The solicitation permit shall be valid for a period of two weeks from the date of issuance, shall state on its face its expiration date, and shall be visibly displayed at all times by the permit holder while engaged in the activity which is the subject of the permit.

F. No person shall go to the dwelling of another person with the intent to attempt to either (1) sell some product, thing or service to a person or persons at such dwelling, or (2) solicit or request a contribution or donation of any kind from a person or persons at such dwelling between the hour of 9:00 o’clock p.m., and the hour of 8:00 o’clock a.m. the next day.

G. The permit application set forth in paragraph 10-4-4(E) shall be accompanied by a non-refundable fee prescribed in the Town of Paradise Valley Fee Schedule.

H. No Person shall enter the private property of another without the express or implied permission of the owner or lawful occupant of such property if the property has posted a sign or signs which state “No Trespassing” or other words which indicate that trespassing, soliciting, canvassing, or peddling is contrary to the wishes of the owner or lawful occupant of the subject property.

Article 10-5 POSSESSION OF FIREARMS; EXCEPTION [355]

10-5-1 Definitions
10-5-2 Unlawful Possession
10-5-3 Forfeiture

Section 10-5-1 Definitions:

1. "Minor" means a person who is under the age of eighteen years.

2. "Firearm" means any loaded or unloaded pistol, revolver, rifle, shotgun or other weapon which will or is designed to or may readily be converted to expel a projectile by the action of an explosive or expanding gases, except that it does not include an air rifle, air pistol, BB gun, or a firearm in permanently inoperable condition.

3. "Written Consent" means written approval or permission to possess a firearm, which is on a form prescribed by the police department, signed by the minor's parent or legal guardian and notarized, and which specifically describes the firearm as follows:

   (a) Type;
   (b) Manufacturer;
   (c) Caliber; and
   (d) Serial Number

   The police department shall not maintain a file or register of executed written consent forms.

Section 10-5-2 Unlawful Possession:

It shall be unlawful for a minor to possess any firearm within the Town without the written consent of the minor's parent or legal guardian. The original written consent form shall be carried by the minor any time the minor is in possession of a firearm outside the minor's residence.

Section 10-5-3 Forfeiture:

Any firearm possessed by a minor in violation of this Article shall be subject to forfeiture in the same manner as authorized by Chapter 39 of Title 13, Arizona Revised Statutes.

Article 10-6 POSSESSION OF DEADLY WEAPONS AND EXPLOSIVES [352]

10-6-1 Definitions
10-6-2 Unlawful Possession [506]
10-6-3 Forfeiture

Section 10-6-1 Definitions:

A. "Deadly weapon" means anything designed for lethal use. The term includes a firearm.

B. "Explosive" means any dynamite, nitroglycerin, black powder or other similar explosive material including plastic explosives and ammunition or ammunition components such as primers, percussion caps, smokeless powder, black powder and black powder substitutes used for hand loading purposes.

C. "Firearm" means any loaded or unloaded pistol, revolver, rifle shotgun or other weapon which will or is designed to or may readily be converted to expel a projectile by the action of an explosive.

Article 10-6-2. Unlawful Possession

A. No person, except those persons authorized to carry weapons pursuant to A.R.S § 13-3102(C) and security officers engaged in official Town business, shall carry any deadly weapon or explosives in the Town Hall, the Police Department building, or the Street Department facilities.

B. Unlawful possession under this subsection is a Class One Misdemeanor.

Section 10-6-3 Forfeiture:

Any deadly weapon or explosive possessed in violation of this Article shall be subject to forfeiture in the same manner as authorized by Chapter 39 of Title 13, Arizona Revised Statutes.

Article 10-7 CONTROL OF EXCESSIVE NOISE [44 607]

10-7-1 Purpose of Article
10-7-2 Definitions [522 607]
10-7-3 Stationary or Fixed Noise Sources [607]
10-7-4 Motor Vehicles [607]
10-7-5 Construction and Related Activities [522 561 573]
10-7-6 Sound Level Measurement Criteria [607]
10-7-7 Exemptions

Section 10-7-1 Purpose of Article

A. The making, creating and maintaining of excessive, unnecessary, unnatural and unusual loud noises which are prolonged or unnatural in a specific time and place are considered a detriment to public health, safety, welfare and comfort, convenience and prosperity of the residents of the Town of Paradise Valley.

B. Noises of the type described in subsection A, supra, are found to be on the increase in extent and volume within the Town of Paradise Valley. Noises are measurable and their elimination or control is considered to be a matter of legislative determination and public policy in maintaining and preserving public health, safety, welfare, prosperity, comfort, convenience, peace and quiet of the Town of Paradise Valley and its residents.

C. It is the intent of the Town of Paradise Valley to periodically re-evaluate stated quantitative noise level limits and the other standards established by state and federal agencies as well as those contained in this noise control ordinance; the right to adjust such standards in accordance with future developments in the technology and state of the art is retained by the Town of Paradise Valley within its Town limits.

Section 10-7-2 Definitions [522 607]

In this Article, unless the contents otherwise require:

1. "A" Band level means the total sound level of all noise as measured with a sound level meter using the A-weighted scale. The unit of measurement is the dB (A).

2. "Ambient Noise" means the all-encompassing noise associated with a given environment, being usually a composite of sounds from many sources, near and far as measured on an A-weighted scale. For the purpose of this chapter, ambient noise level is the A-weighted level obtained when the noise level is averaged over a period of fifteen (15) minutes, without inclusion of the noise generated from the isolated identifiable alleged violation noise source, at the location and time of day near that at which a comparison is to be made.

3. "ANSI" means the American National Standards Institute or its successor bodies. All acoustical terminology shall be that contained in ANSI Specifications for Sound Level Meters S1.4-1983, or its successor.

4. "Decibel" means a logarithmic unit of measurement which indicates the ratio between two quantities commonly referred to as electric or sound energy levels, or pressure levels. One decibel on the A-weighted scale is abbreviated "dB (A)."

5. "Essential services" means the erection, construction, alteration or maintenance by public utilities, municipal departments or commissions, or any governmental agencies of underground or overhead gas, electrical, steam or water transmission or distribution system, collection, communication, supply or disposal system, including poles, wires, mains, drains, sewers, pipes, conduits, cables, fire alarm boxes, police call boxes, traffic signals, hydrants, towers, electrical substations, telephone exchange buildings, gas regulator stations, connection therewith, reasonably necessary for the furnishing of utility service by such public utilities, municipal departments, commissions or any governmental agencies, or for the public health, safety or welfare.

6. "Fluctuating noise" means a noise whose sound pressure level varies significantly but does not equal the ambient environmental level more than once during the period of observation.

7. "IEC" means International Electrotechnical Commission or its successor bodies.

8. "Impulse noise" means brief excursions of sound pressure which significantly exceed the ambient environmental sound pressure. The duration of a single impulse is less than one second.

9. "Intermittent noise" means a noise whose sound pressure level equals the ambient environmental level two or more times during the period of observation. The periods of time during which the level of the noise remains at an essentially constant value different from that of the ambient noise level is on the order of one second or more.

10. “Legal holidays” means Christmas Day, New Year’s Day, Martin Luther King Day, Memorial Day, Independence Day, Labor Day, Veteran’s Day, and Thanksgiving Day.

11. "Motor vehicle" means any passenger vehicle, truck, truck-trailer, trailer, cycle, or semi-trailer propelled or drawn by mechanical power.

12. "Person" means every natural person, firm, partnership, association or corporation which may own, operate or control those devices or facilities herein described.

13. "Repetitive impulse noise" means more than five impulses per hour.

14. "SAE" means Society of Automotive Engineers or its successor bodies.

15. "Sound level" or "noise level" means, for airborne sound, a weighted sound pressure level, obtained by the use of metering characteristics and A-weighting as specified in the referenced standards. Whenever the A-weighted scale is employed, it must be indicated.

16. "Sound level meter" means an instrument including a microphone, an amplifier, an output meter, and frequency weighing networks for the measurement of sound levels which satisfies the pertinent requirements in ANSI S1.4-1983, or its successor.

17. "Sound pressure level" of a sound, in decibels, means 20 times the logarithm to the base 10 of the ratio of the pressure of this sound to the reference sound pressure having the value of 2×10^{-4} dynes per square centimeter.

18. "Steady noise" means a noise whose level remains essentially constant.

19. “Sunset and Sunrise” shall be as determined by the U.S. Naval Observatory Standards Sunset and Sunrise Table.

Section 10-7-3 Stationary or Fixed Noise Sources [607]

TABLE 1
Limiting noise levels for stationary sources

TIME	**MAXIMUM ALLOWABLE NOISE LEVEL dB (A)**
7:00 a.m. to 10:00 p.m.	56
10:00 p.m. to 7:00 a.m. and on all Sundays and specified legal holidays	45

Table 1 sets forth the noise level limits for stationary sources, and it is unlawful to project a sound or noise, except those caused by motor vehicles, from one property into another in excess of the stated limits.

1. All measurements of noise levels shall be made at the property line of the property on which said noise is generated or perceived, as appropriate, at an elevation of not less than four (4) feet above ground level.

2. Noise level limits specified in this section shall not apply to residential air conditioning equipment and swimming pool filtering equipment when functioning in accord with manufacturer's specifications and maintained in proper operating condition.

Section 10-7-4 Motor Vehicles [607]

TABLE 2

TYPE OF VEHICLE	**MAXIMUM ALLOWABLE NOISE LEVEL**
1. Any motor vehicle operated on any public street	79 dB (A) when posted speed limit is 35 mph or less or 82 dB (A) when posted speed limit is over 35 mph
2. Any recreation-type motor vehicle operated on any site not located on a public street or highway, whether or not registered for road use by the State of Arizona (includes recreational vehicles, sandbuggies, go-karts, trail bikes, mini-bikes, all-terrain vehicles, but excludes construction equipment)	82 dB (A)

A. No motor vehicle of a type described in Table 2 shall be operated at any time or under any conditions that shall exceed stated limits specified in Table 2. This table shall conform with the federal and state regulations whenever applicable.

B. Every motor vehicle shall be equipped at all times with a muffler in good working condition to prevent excessive or unusual noise. No person shall use a muffler cut-out, bypass or similar device upon a motor vehicle on a Town street.

C. Noise levels shall be measured at a distance of not less than fifty feet from the center line of vehicle travel and shall be measured in conformance with ANSI S1.4-1983, or its successor, and with SAE Standard J-184; the sound level meter used for such measurements must be set for fast response on the A-weighted scale.

Section 10-7-5 Construction and Related Activities [522 561 573]

A. It is unlawful for any person to operate or permit to be operated any pile driver, power shovel, rotary drill or auger, loader, pneumatic or hydraulic hammer, or bulldozer**,** in any building, construction, demolition, land clearing, excavation or similar outside construction, between sunset and sunrise on Monday through Friday, and at all times on Saturdays**,** Sundays and designated legal holidays**.**

B. It shall be unlawful for any person to perform or cause to be performed the maintenance or servicing of construction vehicles or equipment or to deliver or cause to be delivered construction equipment or materials to a construction site between sunset and sunrise Monday through Saturday, and at all times on Sundays and designated legal holidays except that sprayed termite prevention material may be applied between sunset and sunrise.

C. It is unlawful for any person to operate or permit to be operated any device in any building, construction, demolition, land clearing, excavation or similar outside construction, alteration, or repair work on any buildings, structures or projects, between sunset and sunrise Monday through Saturday, and at all times on Sundays and designated legal holidays, if the noise level created exceeds 45 db(a) measured at the nearest residential or commercial property line.

Section 10-7-6 Sound Level Measurement Criteria [607]

For the purpose of enforcement of the provisions of this Article, noise levels of alleged violations shall be measured on the A-weighted scale with a sound level meter satisfying at least the applicable requirements for Type 2 sound level meters as defined in ANSI S1.4-1983, or its successor. The meter shall be set for slow response speed, except that for impulse noises or rapidly varying sound levels (motor vehicles), fast response speed may be used. Prior to measurement, the meter shall be verified, and adjusted to ` 0.3 decibel by means of an acoustical calibrator.

Measurements recorded shall be taken so as to provide a proper representation of the noise source. The microphone during measurement shall be positioned so as not to create any unnatural enhancement or diminution of the measured noise. A windscreen for the microphone shall be used when required. When measuring the sound level of alleged violations sporadic noise sources such as aircraft and emergency vehicles shall not be considered.

Section 10-7-7 Exemptions [693]

A. Under unusual circumstances not specified in this ordinance, at the discretion of the Town Manager, time and day restrictions may be waived, and a noise level may exceed the ranges specified in Tables 1 and 2, supra.

B. The following noise sources, activities and uses shall be exempt from the noise regulations specified in this Article:

1. Noises of safety signals, warning devices, and emergency pressure relief valves.

2. Noises resulting from any authorized emergency vehicle when responding to an emergency call or acting in time of emergency.

3. Noises resulting from work on essential services as defined in Section 10-7-2 (5), supra.

Article 10-8 CURFEW HOURS FOR MINORS [399]

10-8-1 Definitions
10-8-2 Offenses
10-8-3 Defenses/Exceptions
10-8-4 Enforcement

Section 10-8-1 Definitions

In this Section unless the context otherwise requires:

1. "Emergency" means an unforeseen combination of circumstances or the resulting state that calls for immediate action.

2. "Guardian" means a person who, under court order, is the guardian of the person of a minor or a public or private agency with whom a minor has been placed by an authorized agency or court; or least 21 years of age and authorized by a parent or guardian to have the care and custody of a minor.

3. "Insufficient control" means failure to exercise reasonable care and diligence in the supervision of the juvenile.

4. "Minor" means any person under eighteen years of age.

5. "Parent" means a person who is a natural parent, adoptive parent or step-parent of another person.

Section 10-8-2 Offenses

1. It is unlawful for any minor under the age of sixteen years to be in, about, or upon any place in the town away from the property where the youth resides between the hours of 10:00 P.M. and 5:00 A.M. of the following day.

2. It is unlawful for any minor sixteen years of age or older and under the age of eighteen years, to be in, about, or upon any place in the town away from the property where the child resides between the hours of 12:00 A.M. and 5:00 A.M.

3. It is unlawful for a parent or guardian of a minor to knowingly permit, or by insufficient control, allow a minor to violate Section 10-8-2-1 or Section 10-8-2-2 as listed above.

4. It is unlawful for a parent, guardian or other person having the care, custody or supervision of the minor to fail or refuse to take custody of the minor after such demand is made upon him by a law enforcement officer who arrests the minor for violation of Section 10-8-2-1 or 10-8-2-2 as listed above.

Section 10-8-3 Defenses/Exceptions

It is a defense to prosecution under Section 10-8-2, including 10-2-8-3, of this section that the minor was:

1. Accompanied by the minor's parent or guardian.

2. With prior permission of the parent or guardian, in a motor vehicle involved in interstate travel.

3. With prior permission of the parent or guardian, in an employment activity or going to or returning home from an employment activity without any detour or stop by the most direct route.

4. Involved in an emergency.

5. With prior permission of the parent or guardian, was engaged in reasonable, legitimate, and specific business and/or activity. Examples include, but are not limited to, a juvenile with prior permission of the parent or guardian, attending an official school, religious or other recreational activity supervised by adults who take responsibility for the minor, or going to or returning home from an official school, religious or other recreational activity supervised by adults who take responsibility for the minor.

6. With prior permission of the parent or guardian, engaged in a reasonable and legitimate exercise of First Amendment rights protected by the United States Constitution.

7. Married and 16 years of age or over, or in the military.

8. On the sidewalk abutting their residence or on the next door neighbor's property with the consent of the neighbor.

Section 10-8-4 Enforcement

1. Before taking any enforcement action under this section, a police officer shall attempt to ascertain the apparent offender's age and reason for being in the place. The officer shall not issue a citation or make an arrest under this section unless the officer reasonably believes that an offense has occurred and that, based upon the circumstances, the minor's responses and minor's conduct no defense as provided in subsection C of this section is probably present.

2. In addition to any other powers he/she may have, any law enforcement officer who arrests a minor for violating any of the provisions of Section 10-8-2-1 or 10-8-2-2 is also hereby empowered to demand of the parent, guardian or other person having the care, custody or supervision of the minor that such parent, guardian or other person

come and take the minor into custody. The law enforcement officer is also empowered to take the minor to a designated location where arrangements can be made for a parent, guardian or other appropriate party to take the minor into custody. Should there be a failure of the parent, guardian or other person to take custody of such minor, the officer may then be empowered to take the minor home.

Article 10-9 GAMBLING [131]

10-9-1 Definitions
10-9-2 Exclusions
10-9-3 Promotion of Gambling; Classification
10-9-4 Benefiting from Gambling; Classification
10-9-5 Accepting Bets; Wagers; Classification
10-9-6 Possession of a Gambling Device; Classification
10-9-7 Possession of Gambling Records; Classification
10-9-8 Presumption
10-9-9 Seizure; Exception; Definition
10-9-10 Forfeiture

Section 10-9-1 Definitions

In this Article, unless the context otherwise requires:

1. "Amusement gambling" means gambling involving a device, game or contest which is played for entertainment if all of the following apply:

   (a) All players actively participate in the game or contest or with the device.

   (b) The outcome is not in the control to any material degree of any person other than the player or players.

   (c) The prizes are not offered as a lure to separate the player or players from their money.

   (d) Either of the following:

      (i) No benefit is given to the player or players other than an immediate and unrecorded right to replay which is not exchangeable for value.

      (ii) The gambling is an athletic event and no person other than the player or players derives a profit or chance of a profit from the money paid to gamble by the player or players.

2. "Gambling" means an act of risking or giving something of value for the opportunity to obtain a benefit from a game or contest of chance or skill or a future contingent event but does not include bona fide business transactions which are valid under the law of contracts including contracts for the purchase or sale at a future date of securities or commodities, contracts of indemnity or guarantee, and life, health or accident insurance.

3. "Player" means a natural person who participates in gambling.

4. "Regulated gambling" means gambling to which all of the following apply:

   (a) It is authorized and controlled in accordance with a statute or rule of this state or of the United States.

   (b) All Federal, state or local taxes, fees and charges in lieu of taxes have been paid by the entity on any activity arising out of or in connection with the gambling.

   (c) If conducted by an organization which is exempt from taxation of income under A.R.S. Section 43-1201, the organization's records are open to public inspection.

5. "Social gambling" means gambling which is not conducted as a business and involves players who compete on equal terms with each other in a gamble if all of the following apply:

   (a) No player receives, or becomes entitled to receive, any benefit, directly or indirectly, other than his winnings from the gamble.

   (b) No other person receives, or becomes entitled to receive, any benefit, directly or indirectly, from the gambling activity.

   (c) None of the players are below the age of majority.

Section 10-9-2 <u>Exclusions</u>

1. The following conduct is not unlawful under the provisions of this Article:

   (a) Amusement gambling.

   (b) Social gambling.

   (c) Regulated gambling if the gambling is conducted in accordance with the statutes or rules governing the gambling.

2. An organization which has qualified for an exemption from taxation of income under paragraphs 1, 2, 4, 5, 6, 7, or 11 of A.R.S. Section 43-1201, may conduct a raffle that is subject to the following restrictions:

    (a) The organization shall maintain nonprofit status and no member, director, officer, employee or agent of the organization may receive any direct or indirect pecuniary benefit other than being able to participate in the raffle on a basis equal to all other participants.

    (b) The nonprofit organization shall have been in existence continuously in this state for a five year period immediately before conducting the raffle.

    (c) No person except a bona fide local member of the sponsoring organization may participate directly or indirectly in the management, sales or operation of the raffle.

3. A state, county or local historical society designated by this state or any county, city or town to conduct a raffle may conduct the raffle subject to the following conditions:

    (a) No member, director, officer, employee or agent of the historical society may receive any direct or indirect pecuniary benefit other than being able to participate in the raffle on a basis equal to all other participants.

    (b) The historical society must have been in existence continuously in this state for a five year period immediately before conducting the raffle.

    (c) No person except a bona fide local member of the sponsoring historical society may participate directly or indirectly in the management, sales or operation of the raffle.

Section 10-9-3 <u>Promotion of Gambling; Classification</u>

1. Except for amusement, regulated or social gambling, a person commits promotion of gambling if he knowingly does either of the following for a benefit:

    (a) Conducts, organizes, manages, directs, supervises or finances gambling.

    (b) Furnishes advice or assistance for the conduct, organization, management, direction, supervision or financing of gambling.

2. Promotion of gambling is a Class 1 Misdemeanor.

Section 10-9-4 <u>Benefiting from Gambling; Classification</u>

1. Except for amusement or regulated gambling, a person commits benefiting from gambling if he knowingly obtains any benefit from gambling.

2. Benefits obtained from gambling, whether from one or several persons or from one or several gambling activities or events, may be segregated in one or more complaints at the discretion of this state. In the case of written instruments, "value" means either the fair market value or the face amount of the instrument, whichever is greater. If a benefit has indeterminable value, its value shall be determined by the trier of fact and, in reaching its decision, all relevant evidence may be considered.

3. Benefiting from social gambling as a player is not unlawful under this section.

4. Benefiting from gambling is a Class 1 Misdemeanor.

Section 10-9-5 Accepting Bets; Wagers; Classification

1. Subject to the exceptions in A.R.S. Section 5-112, no person may engage for a fee, property, salary or reward in the business of accepting, recording or registering any bet, purported bet, wager or purported wager or engage for a fee, property, salary or reward in the business of selling wagering pools or purported wagering pools with respect to the result or purported result of any race, sporting event, contest or other game of skill or chance or any other unknown or contingent future event or occurrence whatsoever.

2. No person shall directly or indirectly knowingly accept for a fee, property, salary or reward anything of value from another to be transmitted or delivered for wagering or betting on the results of a race, sporting event, contest or other game of skill or chance or any other unknown or contingent future event or occurrence whatsoever conducted within or without this state or anything of value as reimbursement for the prior making of such a wager or bet on behalf of another person.

3. Any person violating this section is guilty of a Class 1 Misdemeanor.

Section 10-9-6 Possession of a Gambling Device; Classification

1. A person commits possession of a gambling device if he knowingly possesses any implement, machine, paraphernalia, equipment or other thing which the person knows or has reason to know is used or intended to be used in violation of this Article.

2. Possession of a gambling device is a Class 1 Misdemeanor.

Section 10-9-7 Possession of Gambling Records; Classification

1. A person commits possession of gambling records if he knowingly possesses any book, writing, paper, instrument, article, electronically produced data, computer software and programs, discs, tapes or other tangible or intangible method of recording information knowing or having reason to know that it arises out of, or was made in connection with, gambling in violation of this Article.

2. Possession of gambling records is a Class 1 Misdemeanor.

Section 10-9-8 Presumption

In a prosecution under this Article in which it is necessary to prove the occurrence of any event that is the subject of gambling, a published report of its occurrence in a daily newspaper, a magazine, or any other periodically printed publication of general circulation is admissible into evidence, and, on admission, it is presumed that the event occurred. This presumption may be rebutted. Either party may use additional evidence to prove or disprove the occurrence of the event.

Section 10-9-9 Seizure; Exception; Definition

1. In addition to any other remedies provided by law, any monies used or intended to be used in violation of this Article may be seized by any peace officer on probable cause that it is money used or intended to be used in violation of this Article.

2. In addition to any other remedy provided by law, gambling records may be seized by any peace officer on probable cause that they are gambling records.

3. In addition to any other remedy provided by law, a gambling device may be seized by any peace officer on probable cause that it is a gambling device being used or intended to be used in violation of this Article.

4. If a gambling device is an antique slot machine and is not used for gambling purposes or in violation of the laws of this state, possession of the antique slot machine is lawful and it shall not be confiscated or destroyed. If the gambling device is confiscated and the owner shows that the gambling device is an antique slot machine and it is not used for gambling purposes or in violation of the laws of this state, the court acquiring jurisdiction shall order the antique slot machine returned to the person from whom it was confiscated.

5. For purposes of this Section, "Antique slot machine" means a gambling device which was manufactured for use as a slot machine and is at least twenty-five years old.

Section 10-9-10 Forfeiture

1. In addition to any other remedies provided by law, on a first violation under this Article the following property shall be forfeited pursuant to A.R.S. Section 13-3306 and Chapter 39 of Title 13 A.R.S.:

   (a) All benefits derived from a violation of this Article.

   (b) All unlawful gambling devices.

2. In addition to any other remedies provided by law, on a second or subsequent violation under this Article the following property shall be forfeited pursuant to A.R.S. Section 13-3306 and Chapter 39 of Title 13 A.R.S.:

   (a) All benefits derived from a violation of this Article.

   (b) All unlawful gambling devices.

   (c) All things of value used or intended to be used to facilitate a violation of this Article.

3. A person that obtains property through a violation of this Article is an involuntary trustee. An involuntary trustee and any other person, except a bona fide purchaser for value without notice of the unlawful conduct and who has not knowingly taken part in an illegal transaction, holds the property, its proceeds and its fruits in constructive trust for the benefit of persons entitled to remedies pursuant to A.R.S. Section 13-3306 and Chapter 39 of Title 13 A.R.S.

Article 10-10 ESCORTS, ESCORT BUREAUS AND INTRODUCTORY SERVICES [132]

10-10-1	Definitions
10-10-2	Nonprofit Corporation, or Organization Exemption
10-10-3	Escort Bureau and Introductory Service, License Required
10-10-4	License and Permit Term, Non-transferability
10-10-5	Application for Escort Bureau or Introductory Service License; Contents; Required Fees
10-10-6	Escorts, Permit Required
10-10-7	Escort Permit Identification Card
10-10-8	Escort License
10-10-9	Information Update
10-10-10	Prohibited Activities
10-10-11	Renewal of Licenses
10-10-12	Fees
10-10-13	Revocation of License or Permit, Grounds and Procedure; Appeal
10-10-14	Applicability of Regulations to Existing Business

Section 10-10-1 Definitions. As used in this Article:

A. Escort means any person who consorts with or escorts another person in any public or private place within the Town of Paradise Valley for financial consideration; except a person hired to care for the ill or disabled, and except a person otherwise known as a baby-sitter, nanny or nursemaid hired to care for minors.

B. Escort bureau means any person who offers to furnish an escort for consideration.

C. Introductory service means any person who, for financial consideration, offers to assist any person in meeting any other person for social or personal purposes not connected with or forming part of another lawful business or professional activity.

D. Person means any individual, or any firm, partnership, corporation or association of any kind.

E. Person financially interested includes, for a corporation, any person who is an officer or a director or any shareholder holding more than 5% of the shares thereof; and for a noncorporate business includes any person who shares in any financial gain attributable to the business as a proprietor or owner or on the basis of a percentage in excess of 5% of gross or 10% of net revenue.

F. Consideration means money or money's worth.

Section 10-10-2 Nonprofit Corporation, or Organization Exemption

An organization which is qualified for exemption from taxation of income under A.R.S. Section 43-1201, paragraph 1, 2, 4, 5, 6, 7, 10 or 11 is exempt from this Article.

Section 10-10-3 Escort Bureau and Introductory Service, License Required

It is unlawful for any person to act in the capacity of, or engage in the activity of an escort bureau or an introductory service without a valid license issued pursuant to the provisions of this Article. A separate license is required for each location or type of activity licensed pursuant to this article within the Town of Paradise Valley.

Section 10-10-4 License and Permit Term, Non-transferability

The term of a license or permit issued pursuant to the provisions of this Article is one year. All licenses or permits issued pursuant to this Article are non-transferable.

Section 10-10-5 Application for Escort Bureau or Introductory Service License; Contents; Required Fees

A. An applicant for an escort bureau license or an introductory service license shall file an application with the Town Clerk accompanied by a nonrefundable application fee.

B. Unless otherwise provided in this Article, the application shall contain the name and address of the activity and the following information about the applicant, any person financially interested in the activity to be licensed, any authorized local agents, and any managing employee of the activity to be licensed:

1. The name, including any aliases, business trade names or styles;

2. Current residence and business addresses and telephone numbers, as applicable;

3. Each residence and business address for the five-year period immediately preceding the date of filing of the application and the inclusive dates of each such address;

4. Arizona driver's license;

5. Valid proof of age and that the applicant is at least eighteen (18) years of age;

6. Height, weight, color of eyes and hair and date of birth;

7. Two (2) current 2" x 2" photographs;

8. The business, occupation or employment history for the three-year period immediately preceding the date of the filing of the application;

9. Information as to whether such individual or business has ever been refused any similar license or permit or has had any similar license or permit issued to such individual or business in Paradise Valley or elsewhere revoked or suspended, and the reason or reasons therefor;

10. All prior criminal convictions excepting minor traffic offenses;

11. Fingerprints.

12. If the applicant is a corporation, the name of the corporation shall be set forth exactly as shown in its Articles of incorporation or charter, together with the state and date of incorporation, and the names, residence addresses, and dates of birth of each of its current officers and directors, and each stockholder holding more than five (5) percent of the stock in the corporation. If the applicant is a partnership, the applicant shall set forth the names, residence addresses and dates of birth of each of the partners, including limited partners and profit interest holders. If the applicant is a limited partnership, the applicant shall furnish a copy of the certificate of limited partnership as filed with the county clerk. If one or more of the partners is a corporation, the provisions of this subsection pertaining to corporations shall apply. The corporation or partnership applicant shall designate one of its officers or general partners to act as its responsible managing officer. Such designated person shall complete and sign all application forms required of an individual applicant under this Ordinance, but only one application fee shall be charged;

13. A description of any service to be provided;

14. The names and residential addresses of all persons employed as escorts.

C. The Town Clerk shall have a reasonable period of time in which to investigate the application and background of the applicant and process the application through various Town Departments.

D. The Town Clerk shall grant the license upon the following circumstances:

1. The required fees have been paid;

2. The application conforms in all respects to the provisions of this Article;

3. The applicant has not made a material misrepresentation of fact in the application;

4. That neither the applicant, if an individual; nor any person financially interested if a corporation; nor any of the partners, including partners, nor the holder of any profit interest, nor the manager or other person principally in charge of the operation of the existing or proposed escort bureau or introductory service, nor any individual employed or contracted with to be an escort or to provide escort services has been convicted of, pleaded nolo contendere to or guilty to any felony or to a misdemeanor involving moral turpitude within five years prior to the issuance of the license;

5. The applicant has not had a license similar to the one issued pursuant to the provisions of this Article issued by another local authority, suspended or revoked for cause within the five-year period immediately preceding the date of the filing of the application.

6. The escort bureau or introductory service complies with all applicable laws of the Town of Paradise Valley, Maricopa County and State of Arizona; and,

7. The applicant, manager or other person principally in charge of the operation of the business is at least eighteen (18) years of age.

E. The Town Clerk shall deny the license application if all of the requirements set forth in subsections E (1) through (7) of this subsection have not been met. In the event of denial, the applicant shall be notified by mail of the denial and the reasons therefor. The applicant may appeal such denial to the Town Council.

Section 10-10-6 Escorts, Permit Required

It shall be unlawful for any person to act in the capacity of an escort within the Town of Paradise Valley without a valid permit issued pursuant to the provisions of this Article.

Section 10-10-7 Escort Permit Identification Card

Each escort license holder shall be issued an identification card. This card must be carried on the person of any individual while such person is engaged in the activity of an escort within the Town of Paradise Valley. Such identification card shall be displayed upon request of any law enforcement official.

Section 10-10-8 Escort License

A. An applicant for a license shall make application to the Town Clerk.

B. Each applicant shall furnish all applicable information required by Section 10-10-5.

C. The applicant must provide a 2" x 2" photograph and be fingerprinted by the Paradise Valley Police Department.

D. The Town Clerk shall cause to be investigated the application and background of the applicant.

E. The Town Clerk shall issue the license if he finds that all of the requirements of subsections of this Article have been met, and, in addition, if he finds that the following additional requirements have been met:

1. The applicant has not had any license issued by the Town of Paradise Valley denied, suspended or revoked for cause relating to licensed activity by the Town of Paradise Valley within (5) years immediately preceding the date of the filing of the application;

2. The applicant is at least eighteen (18) years of age;

3. The applicant has not been convicted of, pleaded nolo contendere to or guilty to any felony or to a misdemeanor involving moral turpitude within five years prior to the issuance of a license.

F. The Town Clerk shall deny the license application if the requirements of Section 10-10-5 and this Section have not been met. In the event of denial, the applicant shall be notified by mail of the denial and the reasons therefor. Denial may be appealed to the Town Council.

Section 10-10-9 Information Update

Any changes in information required to be submitted by this Article must be given to the Town Clerk within ten (10) days of any such change.

Section 10-10-10 Prohibited Activities

It is unlawful for a licensee to provide escort or introduction services as described in this Article to individuals under eighteen (18) years of age unless written authorization by a parent or legal guardian is issued on the escort when acting as such.

Section 10-10-11 Renewal of Licenses

Any license issued pursuant to the provisions of this Article, which has not been suspended or revoked, may be renewed for a period of not to exceed one year on written application to the Town Clerk made at least 45 days prior to the expiration date of the current valid license or permit. The renewal application shall be on a form provided by the Town Clerk and shall contain all of the information required by either Sections 10-4 or 10-8 as applicable.

Section 10-10-12 Fees

A. The fee for the application required in Section 10-10-5 shall be $1,000. Upon approval a license fee of $1,000.00 (one thousand dollars) shall be assessed and a renewal fee of $1,000 (one thousand dollars) shall accompany each application for renewal.

B. The fee for the application required in Section 10-10-8 shall be in the amount of $1,000 (one thousand dollars). Upon approval a license fee of $1,000.00 (one thousand dollars) shall be assessed. A renewal fee of $1,000 (one thousand dollars) shall accompany each application for renewal.

Section 10-10-13 Revocation of License or Permit, Grounds and Procedure; Appeal

A. Any license issued pursuant to this Article shall be revoked upon any one or more of the following grounds:

1. The licensee, any employee, agent, or any other person connected or associated with the license or manager, or any "person financially interested" as defined in Section 10-1 (E) has violated any provision of this Article in conducting an activity licensed under the provisions of this Article or has been convicted of a violation of the Town Code, State or Federal law in conducting such an activity under the provisions of this Article.

2. The licensee, any employee, agent or any other person connected or associated with the license as a partner, director, officer, stockholder or manager, or any "person financially interested" as defined in Section 10-10-1 E, has made a material misrepresentation of fact in the application for any license required in this Article.

3. The licensee has been convicted, subsequent to the issuance of any license, of a crime which is either a felony or a misdemeanor involving moral turpitude.

4. The licensee has violated a provision of this Article in conducting a licensed activity pursuant to this Article.

5. The licensee is a corporation and is not or is no longer qualified to transact business in the State of Arizona.

B. To revoke a license, the Town Clerk or his Agent shall notify the licensee in writing by mail to the address as shown on the application or otherwise more recently of record, that said license or permit is revoked. The cause for such revocation must be set forth in the notice.

C. Except as otherwise provided in this Article, the license shall terminate if the licensee fails to pay any license fee owed either when due or by the end of any renewal period.

D. Appeals from the revocation or termination of a license or permit as provided for in this Article may be appealed to the Town Council.

E. A revoked license shall be surrendered to the Town Clerk on demand at the expiration of the appeals process.

Section 10-10-14 Applicability of Regulations to Existing Business

The provisions of this Article shall be applicable to all persons and activities described herein whether the herein described activities were established before or after the effective date of the ordinance enacting this Article into law. All such persons and businesses shall have sixty (60) days from said effective date hereof to comply with the provisions of this Article.

ARTICLE 10-11 HELICOPTER AND AIRCRAFT LANDING RESTRICTIONS [498]

10-11-1 Aircraft Prohibited; Exceptions
10-11-2 Penalty

Section 10-11-1 Aircraft Prohibited; Exceptions

Aircraft Prohibited

A. Except as provided in this Section no person shall land any type of aircraft, including but not limited to, helicopters, hang gliders, hot air balloons, parachutes, paragliders or any contrivance now known or hereafter invented, used, or designed for navigation of or flight in the air, within the Town of Paradise Valley limits.

Exceptions

B. Helicopter takeoffs and landings for the purposes hereafter enumerated may be made with the authorization of the Chief of Police or his designee:

1. A takeoff or landing to assist in investigating an accident or to remove persons or property from the scene of an accident or other medical emergency.
2. A takeoff or landing directed by or approved by the Chief of Police or his designee for purposes related to public safety.
3. Public safety agency helicopters.

B. The provisions of article shall not apply to takeoffs or landings by any type of aircraft made necessary by an emergency.

Section 10-11-2 Penalty

Any person who shall violate any of the provisions of this Ordinance shall be guilty of a Class 1 Misdemeanor and upon conviction thereof shall be punished by a fine not to exceed two thousand five hundred dollars ($2,500.00) or by imprisonment for a period not to exceed six months or by both fine and imprisonment. Each day that a violation continues shall be a separate offense punishable as described. In the alternative to the criminal penalty, civil prosecution may proceed pursuant to this Article by citation for civil sanction(s). The procedure for civil actions shall be as outlined in §8-6-5 of this code.

Article 10-12 RESTRICTIONS AND EXCEPTIONS TO UNMANNED AERIAL VEHICLE OPERATIONS [691]

10-12-1 Purpose
10-12-2 Definitions
10-12-3 Restrictions; Exceptions
10-12-4 Penalty

Section 10-12-1 Purpose; Harmony with Other Governmental Regulations

The Town Council hereby recognizes that unmanned aerial vehicles, also known as drones, can pose unique safety, nuisance, and privacy invasion risks; thus regulating the operation of unmanned aerial vehicles within the Town is needed to promote the public safety and welfare of the Town and its residents. These regulations are to be read in harmony with all other regulations regarding the use of unmanned aerial vehicles, specifically including any rules promulgated by the Federal Aviation Administration. Further, compliance with these regulations should not be interpreted as express, implied or tacit approval to operate an unmanned aerial vehicle in violation of any other governmental regulations or in a manner that jeopardizes the health, safety, or welfare of the general public. Nothing in this article shall be construed to authorize the operation of any UAV in Town airspace in violation of any Federal statute or rules promulgated thereunder. Operators of unmanned aerial vehicles should familiarize themselves with all applicable regulations relating to the use of an unmanned aerial vehicle, including the Federal Aviation Administration requirements regarding notification of an airport operator and control tower, where applicable, prior to operating an unmanned aerial vehicle within five miles of an airport.

Section 10-12-2 Definitions

A. The following words, terms and phrases, when used in this article, have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

   1. “Commercial Use” means the use of an Unmanned Aerial Vehicle within the Town for a commercial purpose, including aerial photography, aerial mapping, or geospatial imaging.

   2. “Commercial User” means any company, entity or person who is in the business of flying an Unmanned Aerial Vehicle for a Commercial Use.

   3. “FAA” means the Federal Aviation Administration.

4. “Law Enforcement Agency” means a lawfully established federal, state, or local public law enforcement agency that is responsible for the prevention and detection of crime, local government code enforcement, and the enforcement of penal, traffic, regulatory, game, or controlled substance laws.

5. “Private Property“ means all parcels of land within the Town of Paradise Valley limits that are not Public Property, including, but not limited to, residences, schools, churches, resorts, utility substations, golf course, or canals.

6. “Public Property” means streets, rights of way, parks, mountain preserves, and other parcels of land owned by the Town of Paradise Valley or the Mummy Mountain Preserve Trust.

7. “PVPD” means the Town of Paradise Valley Police Department.

8. “Unmanned Aerial Vehicle” or “UAV” (aka “Drone”) means an aircraft that may be flown without a pilot or operator in or touching the aircraft.

Section 10-12-3 Restrictions; Exceptions

A. Private Property. It is unlawful for a person to use an UAV over Private Property at a level between zero feet and five hundred feet above the ground level of the Private Property without the express permission of the owner of the Private Property over which the UAV is flying. An offense under this section will be considered a criminal trespass and subject to civil and criminal penalties pursuant to subsection 10-12-4 below and Article 1-9 of the Town Code.

B. Public Property. The use of an UAV over Public Property within the Town is unlawful unless the use has been authorized by the issuance of a Special Event Permit pursuant to Section 8-8-3 of the Paradise Valley Town Code.

C. Commercial Use on Private or Public Property. The Commercial Use of an UAV within the Town is unlawful unless the Commercial User has met the requirements provided in subsection A and B above with respect to operation of a UAV on either Private Property or Public Property and the following additional requirements:

1. Registered as a Commercial User with the PVPD, said registration to include proof of having obtained the appropriate certifications or registrations required from the FAA for the type of Commercial Use(s) to be conducted within the Town by the Commercial User;

2. Provided a list of the types and number of UAVs that the Commercial User plans to use within the Town limits, as well as: the brand and model of each UAV; any registration number, license number or other identifying information for each such UAV, specifically including registration numbers supplied by the FAA; and photos of each UAV, at least one such photo to show the particular registration or license number for each UAV; and

3. At least four hours prior to each Commercial Use of a UAV, the Commercial User will first have provided notification to the PVPD of the planned date, time, location of the Commercial Use, contact information for the Commercial User, and other information required by the Police Department through its online UAV Commercial User web portal.

D. Exceptions. In addition to the uses allowed above, the use of a UAV is allowed within the Town for:

1. Recreational use of an UAV within one's own property so long as such use is at a height of less than five hundred feet (500') and not in violation of the additional violations set forth in subsection E below; or

2. By a Law Enforcement Agency in response to an emergency situation or after obtaining a warrant based upon probable cause that criminal activity is occurring.

E. Additional Violations. In addition to those violations enumerated above, the following are violations of this Article, even under an otherwise authorized use or exception. No person or entity shall operate a UAV within the Town:

1. In a careless or reckless manner that poses an apparent or actual threat of harm, or actual harm to persons or property; or

2. Without the express permission of a person, owner, or authorized representative, to capture, view, record or transmit any visual image or audio recording of such person or their private real property, located in the Town, under circumstances in which the subject person or owner of the private property has a reasonable expectation of privacy (including, but not limited to, inside a private residence, school room, resort room, office, or inside an enclosed yard);

3. Or in such a manner as to intentionally harass, annoy, or assault a person or persons or to cause a public nuisance.

Section 10-12-4 Penalties/Seizure of Evidence.

For a first violation of this ordinance (except those violations which are accompanied by intentional or reckless acts), the penalty shall be a civil violation with a fine not to exceed $500. For a second violation or any violation accompanied by intentional or reckless acts, the charge or violation shall be as provided for in Article 1-9 of the Town Code, with a maximum penalty to include a criminal misdemeanor charge, which, upon conviction thereof shall be a fine not to exceed two thousand five hundred dollars ($2,500.00) or imprisonment for a period not to exceed six months or both fine and imprisonment. Each day that a violation continues shall be a separate offense punishable as described.

If the PVPD police chief or a Town code enforcement officer, or any of their duly authorized enforcement officers or designees, have a reasonable basis to believe that any UAV is or has been operating in violation of this section, said UAV may be seized by such duly authorized enforcement official, followed by an opportunity for an administrative hearing, with notice to the owner within seven calendar days of such seizure, for the purpose of reviewing the appropriateness of the seizure, and shall be held by the Town until such time that the owner of such UAV reimburses the Town for the actual costs incurred in connection with the seizure and storage of the UAV. If criminal charges involving the use, condition or operation of the UAV are pending, the UAV shall be held until disposition of the criminal charges. If it is determined at an administrative hearing, by a preponderance of the evidence, that the UAV was not being operated in violation of this article, such UAV shall be returned to its owner without charge.

FOOTNOTES

42 Ordinance #129 - 1/27/77
43 Ordinance #146 - 9/29/78
44 Ordinance #140 - 12/1/77
45 Ordinance #157 - 9/13/79
90 Ordinance #188 - 12/17/81
126 Ordinance #238 - 1/23/86
131 Ordinance #247 - 7/24/86
144 Ordinance #260 - 2/12/87
149 Ordinance #267 - 5/14/87
152 Ordinance #270 - 7/23/87 (eff. 1/1/88)
157 Ordinance #276 - 12/17/87
178 Ordinance #302 - 9/28/89 (repealed former Article 10-6)
196 Ordinance #342 - 4/9/92
208 Ordinance #346 - 5/28/92
352 Ordinance #352 - 2/9/93
355 Ordinance #355 - 2/9/93
378 Ordinance #378 - 9/22/94
399 Ordinance #399 - 2/23/95
457 Ordinance #457 - 2/12/98
498 Ordinance # 498 – 3/09/00
506 Ordinance #506 – 8/24/00
522 Ordinance #522 – 2/14/02
560 Ordinance #560 – 05/12/2005
561 Ordinance #561 – 05/12/2005
573 Ordinance #573 – 02/09/2006
578 Ordinance #578 – 03/27/2006
607 Ordinance #607 – 11/20/2008
693 Ordinance #693 – 10/22/2015
691 Ordinance #691 – 12/3/2015

CHAPTER 11 TRAFFIC

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CHAPTER 11 TRAFFIC

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Section 11-1-1 Duty of Law Enforcement Department

It is the duty of the Law Enforcement Department to provide for the enforcement of the street traffic regulations of the Town and all of the State Vehicle Laws applicable to street traffic in the Town, to make arrests for traffic violations, to investigate accidents and to assist in developing ways and means to improve traffic conditions and to carry out all duties specially imposed upon said department by this chapter.

Section 11-1-2 Records of Traffic Violations

A. The Law Enforcement Department shall keep a record of all violations of the traffic laws of the Town or the State Vehicle Laws of which any person has been charged, together with a record of the final disposition of all such alleged offenses. Such record shall accumulate during at least a five-year period and from that time on the record shall be maintained complete for at least the most recent five-year period.

B. All forms for records of violations and notices shall be serially numbered. For each month and year a written record shall be kept available to the public showing the disposal of all such forms.

C. All records and reports shall be public records.

Section 11-1-3 Law Enforcement Department to Investigate Accidents

It is the duty of the Town Law Enforcement Department to investigate traffic accidents and to arrest and assist in the prosecution of those persons charged with violations of law causing or contributing to such accidents.

Section 11-1-4 Traffic Accident Studies

Whenever the accidents at any particular location become numerous, the Town Law Enforcement Department shall conduct studies of such accidents and determine remedial measures.

Section 11-1-5 Traffic Accident Reports

A. The Law Enforcement Department shall maintain a suitable system of filing traffic accident reports. Accident reports or cards referring to them shall be filed alphabetically by locations.

B. The Town Law Enforcement Department shall receive and properly file all accident reports made to him under State law or under any law of the Town, but all such accident reports made by drivers shall be for the confidential use of the Town, and no such report shall be admissible in any civil or criminal proceeding other than upon request of any person making such report or upon request of the Court having jurisdiction, to prove a compliance with the laws requiring the making of any such report.

C. The Law Enforcement Department shall annually prepare a traffic report which shall be filed with the Town Clerk. Such report shall contain information on traffic matters in the Town as follows:

1. The number of traffic accidents, the number of persons killed, the number of persons injured and other pertinent traffic accident data.

2. The number of traffic accidents investigated and other pertinent data on the safety activities of the Law Enforcement Department.

3. Plans and recommendations of the department for future traffic safety activities.

Article 11-2 TRAFFIC CONTROL

11-2-1 Speed Limits [442]
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11-2-3 Obedience to Traffic Regulations
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11-2-31 Towing on Private Property, Notices Required, Penalty, Vehicular Trespass [416]

Section 11-2-1 Speed Limits [442]

The speed limit within the Town is twenty-five (25) miles per hour unless otherwise posted. The Town Council may, in accordance with the authority granted by State law, change the speed limit on specified streets by resolution. Speed limits may also be established, altered, posted and enforced by the Town Manager or his designee when construction or work is being conducted on a street or right of way, applicable at such locations and during such time periods as deemed advisable by the Manager or his designee.

Section 11-2-2 Directing Traffic

A. Officers of the Law Enforcement Department are hereby authorized to direct all traffic by voice, hand or signal.

B. Officers of the Fire Department, when at the scene of a fire, may direct or assist the Town Marshal in directing traffic thereat or in the immediate vicinity.

Section 11-2-3 Obedience to Traffic Regulations

It is unlawful for any person to do any act forbidden or fail to perform any act required by this chapter. It is unlawful for any person to willfully fail or refuse to comply with any lawful order or direction of a law enforcement officer or of any Fire Department official.

A. It is unlawful for one vehicle to pass another vehicle in a zone signed for school crossing. Passing occurs when the front bumper of the rear vehicle overtakes the rear bumper of the overtaken vehicles.

B. The Town Manager, on approval by the Council, may designate certain additional sections of streets as No Passing Zones.

Section 11-2-4 Traffic Control Devices

A. The Town Manager, with the approval of the Council, shall designate the location of traffic control devices, signs and signals when and as required under the traffic regulations of the Town to make effective the provisions of said regulations, and may designate such additional traffic control devices as he may deem necessary to regulate traffic under the traffic laws of the Town or under State law or to guide or warn traffic.

B. The driver of any vehicle shall obey the instructions of any official traffic control device applicable thereto placed in accordance with the traffic regulations of the Town unless otherwise directed by the law enforcement officers, subject to the exceptions granted in this chapter or by State law.

Section 11-2-5 Authority to Designate Crosswalks, Establish Safety Zones

The Town Manager is hereby authorized, on approval by the Council:

A. To designate or cause to be designated, by appropriate devices, marks or lines upon the surface of the roadway, crosswalks at intersections where in his opinion there is

particular danger to pedestrians crossing the roadway, and at such other places as he may deem necessary.

B. To establish or cause to be established safety zones of such kind and character and at such places as he may deem necessary for the protection of pedestrians.

C. To mark lanes or cause lanes to be marked for traffic on street pavements at such places as he may deem advisable, consistent with the traffic laws of the Town.

Section 11-2-6 Authority to Place and Obedience to Turning Markers

A. The Town Manager is authorized on approval of the Council to place or cause to be placed markers, buttons or signs within or adjacent to intersections indicating the course to be traveled by vehicles turning at such intersections, and such course to be traveled as so indicated may conform to or be other than as prescribed by law.

B. When authorized markers, buttons, or other indications are placed within an intersection indicating the course to be traveled by vehicles turning there, no driver of a vehicle shall disobey the directions of such indications.

Section 11-2-7 Authority to Place and Obedience to Restricted Turn Signs

A. The Town Manager, on approval by the Council, is hereby authorized to determine those intersections at which drivers of vehicles shall not make a right, left or U-turn, and shall place or cause to be placed proper signs at such intersections. The making of such turns may be prohibited between certain hours of any day and permitted at other hours, in which event the same shall be plainly indicated on the signs or such signs may be removed when such turns are permitted.

B. Whenever authorized signs are erected indicating that no right or left or U-turn is permitted, no driver of a vehicle shall disobey the directions of any such sign.

Section 11-2-8 Limitations on Turning Around

The driver of any vehicle shall not turn such vehicle so as to proceed in the opposite direction upon any street in a business district and shall not upon any other street so turn a vehicle unless such movement can be made in safety and without interfering with other traffic.

Section 11-2-9 Regulation of Traffic at Intersections

A. The Council shall by resolution designate through streets, intersections where stops are required, and intersections where vehicles shall yield the right-of-way.

B. When any resolution of the Council shall designate any through street or intersection where vehicles are to stop or yield the right-of-way, the Town Marshal shall erect and maintain or shall cause to be erected and maintained the appropriate signs at every location where a vehicle must stop or yield the right-of-way.

Section 11-2-10 Existing Speed Limits, Traffic Control Measures, and Devices

All stop signs, speed limits, no passing zones, parking restrictions and other traffic control signs and devices in existence as of the date of this Code are hereby declared duly authorized and valid. Location and restrictions of such devices are on file with the Town Marshal.

Section 11-2-11 Drivers to Obey Signs

Whenever traffic signs are erected as provided in this chapter, every driver of a vehicle shall obey such signs unless directed to proceed by a law enforcement officer or a traffic control signal. No driver shall drive upon or through any private property such as an oil station, vacant lot, or similar property to avoid obedience to any regulation included in this chapter.

Section 11-2-12 Funeral Processions [504] [542]

A. A funeral procession composed of a procession of vehicles shall be identified by such methods as may be determined and designated by the Town of Paradise Valley Chief of Police.

B. Each driver in a funeral or other procession shall drive as near to the right hand edge of the roadway as practical and shall follow the vehicle ahead as close as is practical and safe.

C. No person shall unreasonably hamper, obstruct or impede, or interfere with a funeral procession, or any person or vehicle participating in a funeral procession. No driver of a vehicle shall drive between the vehicles or persons comprising a procession when such vehicles or persons are in motion and are conspicuously designated as a funeral procession. This provision shall not apply at intersections where traffic is controlled by traffic control signals or a law enforcement officer.

Section 11-2-13 No Passing Zones [357]

The Town Manager, on approval by the Council, may designate certain sections of streets as no passing zones.

A. It is unlawful for one vehicle to pass another vehicle in a zone signed for school crossing. Passing occurs when the front bumper of the rear vehicle overtakes the rear bumper of the overtaken vehicles.

B. The Town Manager, on approval by the Council, may designate certain additional sections of streets as no passing zones.

Section 11-2-14 Repealed [416]

Section 11-2-15 Operation of Vehicles on Private Property [47]

It shall be unlawful for any person to operate or drive any motor vehicle, motorcycle, mini-bike, trail-bike, dune buggy, motor scooter, jeep or any form of transportation propelled by an internal combustion engine, upon the private property of another; however, it shall be a complete defense to a charge of violating this section that the person charged had the express or implied permission of the owner thereof or the person entitled to immediate possession thereof, or the authorized agent of either.

Section 11-2-16 Signs on Public Right-of-Way [416, 426]

A. It shall be unlawful and a public nuisance for any person or other entity to place or erect any structure or sign, either temporary or permanent on or upon the right-of-way of any public road, street or alley, not a State highway, and inside the corporate limits of the Town except as authorized by this Code or applicable law.

B. Any person or other entity whose name or address, or telephone number serving that name or address, is indicated on such sign or structure shall be prima facie responsible for such violation, and be subject to payment of any penalty, damages to public or private property, abatement and costs thereof.

C. Police Department, Street Department and other Town employees designated by the Town Manager may summarily abate and remove any sign or structure which is in violation of this section and may establish enforcement guidelines to carry out the purpose of this section.

Section 11-2-17 Regulation of Trucks [156, 359]

A. Application of Regulations. It is unlawful to operate a truck on any street which is not a truck route.

Exceptions: Subsection A will not prohibit:

1. Operation on Street of Destination. The operation of trucks upon any street where necessary to the conduct of business at a destination or in the Town.

2. Emergency Vehicles. The operation of emergency vehicles upon any street in the Town.

3. Public Utilities. The operation of trucks owned or operated by the Town, any contractor, material man or public utility, while engaged in the repair, maintenance, or construction of streets, street improvements, street utilities or home utilities within the Town.

4. Detoured Trucks. The operation of trucks upon any officially established detour.

B. Designating Streets for Truck Use. The Council may designate specific streets as truck routes.

C. Dust Covers. All haul trucks must be covered to prevent the escape of fugitive particulate matter (dust). [359]

D. Truck Traffic in the Town.

Outside origin:

1. One inside destination point: All trucks entering the Town for a destination point in the Town shall proceed only over an established truck route and shall deviate only at the intersection with the street, on which such traffic is permitted, nearest to the destination point. Upon leaving the destination point, a deviating truck shall return to the truck route by the shortest route.

2. Multiple inside destination points: All trucks entering the Town for multiple destination points shall proceed only over established truck routes and shall deviate only at the intersection with the street, upon which such traffic is permitted, nearest to the first destination point. Upon leaving the first destination point, a deviating truck shall return to the truck route by the shortest route.

Inside origin:

1. Outside destination point: All trucks, on a trip originating in the Town, and traveling in the Town for a destination point outside the Town shall proceed by the shortest direction to a truck route.

2. Inside destination points: All trucks, on a trip originating in the Town for destination points in the Town shall proceed over a truck route to the fullest extent possible under the circumstances.

E. Enforcement. Weigh-in: The Chief of Police shall have the authority to require any person driving or in control of any commercial vehicle not proceeding over a truck route or street over which truck traffic is permitted to proceed to the nearest public or private scale available for the purpose of weighing and determining compliance with this section. Any person convicted of violating the terms of this section shall be fined not less than $250.00 in addition to any penalties which may be imposed by the terms of Title 28 of the Arizona Revised Statutes.

Section 11-2-18 Presumptive Operator [48, 153, 172]

A. If any vehicle unoccupied by a licensed driver is found upon a street or roadway in violation of any provision of this Article Title 28, Chapter 6, Article 14 of the Arizona Revised Statutes; or if any vehicle has been driven in violation of the speed restrictions of this Article or Title 28, Chapter 6, Article 6 of the Arizona Revised Statutes or A.R.S. 28-797, then proof of the identity of the person in whose name such vehicle is registered pursuant to Title 28, Chapter 3 of the Arizona Revised Statutes may be sufficient evidence that such person was responsible for such violation, in the absence of probative contrary evidence and if the magistrate is so persuaded.

B. Nothing in this Section shall limit the defenses to or evidence otherwise probative and admissible concerning such violation or responsibility therefor.

C. The registered owner of such violation, if not the person responsible for such violation, shall upon request inform the magistrate or Town attorney of the identity of the person responsible for such violation, if known.

Section 11-2-19 Horses Prohibited on Town Sidewalks and Paved Bicycle Paths [49]

It is unlawful to ride, lead, or direct a horse upon a Town owned sidewalk or Town owned paved bicycle path, unless it is necessary to do so in order to cross over such a sidewalk or paved bicycle path and then only for such a distance as is reasonably necessary to permit the horse to cross over the sidewalk or paved bicycle path.

Section 11-2-20 Operation of Vehicles on Canal or Ditch [92]

It shall be unlawful for any person to operate or drive any motor vehicle, motorcycle, mini-bike, trail bike, dune buggy, motor scooter, jeep or any form of transportation propelled by an internal combustion engine in or upon any canal or ditch or the banks adjacent thereto.

Section 11-2-21 Parking Areas Reserved for Physically Disabled [97] [416]

A. It is unlawful to park a vehicle in a parking space set aside and identified for use only by persons with physical disabilities unless the vehicle has displayed plainly thereon a distinguishing insignia as provided in A.R.S. § 28-378 or numbered plates bearing the international wheelchair symbol issued pursuant to A.R.S. § 28-378, or a distinguishing insignia pursuant to the laws of the state in which the vehicle is registered if registered outside of the State of Arizona.

B. Subsection (A) of this section shall apply only to those parking spaces that are identified with standard signs or other markers as approved by the Police Chief.

Section 11-2-22 Repealed [416]

Section 11-2-23 Barricades: Requirement; Lighting; Restitution [385]

A. A contractor, utility company, agency or other person responsible for construction of any type, or for storage of materials shall provide and maintain all necessary temporary traffic and pedestrian control devices including regulatory signs, to protect and guide vehicles, pedestrians, and to protect workers, during construction or storage in or along any area within a public right-of-way or public utility easement (including the recreation paths).

B. Temporary traffic and pedestrian control devices shall follow the standards set by the Manual on Uniform Traffic Control Devices in effect at the time of construction or storage.

C. It is unlawful for any person to leave construction barricades or hazard warning barricades unlighted from sunset to sunrise. Lighting may be provided by either battery powered strobes with sufficient power to remain lighted during the required time period, or other means of illumination of sufficient intensity as to provide an easily noticed warning of obstruction or hazard in the right of way.

D. Any person convicted of violating the terms of this Section 11-2-23 shall be ordered to pay full restitution to the Town for the Town's expenses in placing temporary lighted or unlighted barricades and other traffic control devices for unguarded construction or storage in the public right-of-way. Restitution shall include all overtime, regular time, and rental of equipment.

Section 11-2-24 Parking of Taxicabs [386]

A. It is unlawful for commercial vehicles commonly referred to as taxicabs, taxis, cabs, couriers or limousines, to park in the right of way unless actually picking up or discharging a passenger.

B. It is unlawful for commercial vehicles commonly referred to as taxicabs, taxis, cabs, couriers or limousines, to park upon private property unless actually picking up or discharging a passenger, unless the driver has obtained the written permission of the property owner on each occasion of so parking.

Section 11-2-25 Violations, Civil Sanction [482]

A. Any person violating any of the provisions of this Article 11-2, except Section 11-2-23 (barricades), shall be liable for the imposition of a civil sanction not to exceed two hundred fifty dollars ($250), unless another penalty is specified. The civil sanctions for second or subsequent parking violation in any twelve-month period may be increased or doubled in the discretion of the Municipal Court.

B. A violation of Section 11-2-23 and any criminal provision of this Article is punishable as provided in Section 1-9-2 of the Town Code.

A. C. Civil Traffic Default Judgment Fee
A default fee in the amount of fifty dollars ($50.00) shall be imposed on each default judgment entered for failure to appear in a civil traffic violation case, or for failure to satisfy in full a civil sanction imposed in a civil traffic case.

Section 11-2-26 Owner's Liability for Parking Offenses

The registered owner of any vehicle which has been parked in violation of any of the provisions of this chapter or any other Town ordinance prohibiting or restricting parking shall be prima facie responsible for such violation and subject to penalty therefore.

Section 11-2-27 Immobilization

A. In addition to the civil sanction imposed by this chapter, where a motor vehicle has been found parked in violation of the provisions of this chapter, and judgment has been entered and remains unsatisfied, the Court may order the registration number of the vehicle placed on a list of vehicles which the Police Department is authorized to immobilize by installing on such vehicle a wheel clamp designed to restrict the normal movement of such vehicle.

B. Whenever a vehicle is immobilized, a notice shall be conspicuously attached to the vehicle stating that the vehicle has been immobilized by the Town for failure to satisfy an outstanding judgment, that release from such immobilization may be obtained at a designated place, and that unless arrangements are made for release of the vehicle within a reasonable time, the vehicle may be towed and impounded at the direction of the Town. Reasonable charges may be made for releasing the wheel clamp from the vehicle or for towing and impounding the vehicle.

C. It is a misdemeanor, punishable as provided in Section 1-9-2, for any person to tamper with or remove, without Police Department authority, a wheel clamp which has been attached to a vehicle pursuant to this section.

D. Notice of parking violation issued by the Police Department shall be attached to the vehicle and shall warn that failure either to pay the civil sanction indicated on the notice or to appear at the location indicated on the notice and dispose of the charge on the date specified may result in a judgment by default being entered against the registered owner of the vehicle, and that the vehicle may thereafter be subject to immobilization by the installation of a wheel clamp, and to towing and impoundment pursuant to this section. The notice of parking violation attached to the vehicle shall be deemed constructive notice to the registered owner that the vehicle may be immobilized and impounded.

Section 11-2-28 Parking Signs

A. The Town Manager or his designee shall determine and designate by appropriate signs or markings any parking time limit and any other limits, restrictions or regulations applicable to parking, standing, stopping, driving or riding on any street or right of way or on any property owned or controlled by the Town. When official signs are erected indicating parking, stopping or standing regulations as authorized herein, no person shall park, stop or cause to be standing any vehicle in such place.

B. Parking regulations contained in this chapter or state law which are applicable throughout the Town shall be effective without any signs being erected or posted to limit or regulate such parking.

Section 11-2-29 Residential Parking Permit Areas

The Police Chief is authorized to designate streets or portions of streets on which the parking of motor vehicles may be restricted or granted in whole or in part to residents of the area as designated by the Police Chief. A residential area shall be deemed eligible for residential one-time permit parking (good for one day or a lesser specified period) when the Police Chief finds that parking in the area is significantly impacted by motor vehicles owned by nonresidents. The Police Chief is directed to prepare such administrative guidelines as may be deemed necessary and desirable to implement the provisions of this section.

Section 11-2-30 Parking Restrictions [487 597]

A. It is unlawful to stop, stand or park a vehicle, except when necessary to comply with law or the directions of a police officer or traffic control device, in any of the following places:

1. On a sidewalk, recreation path, bicycle path or bicycle lane.

2. Within an intersection or within twenty (20) feet of an intersection.

3. Where prohibited by official signs or where the curb is painted red.

4. Within fifteen (15) feet of a fire hydrant or within twenty (20) feet of the driveway entrance to any fire station.

5. Alongside or opposite any street excavation or obstructions when stopping, standing or parking would impede traffic.

6. On the roadway side of any vehicle stopped or parked at the edge or curb of a street.

7. In front of a public or private driveway, or within three (3) feet thereof, or in such a manner as to obstruct the flow of traffic or create a hazard in or near the driveway.

8. Within thirty (30) feet upon the approach to any flashing beam, stop sign, yield sign or traffic control signal located at the side of a roadway.

9. In any private driveway or on private property or private parking area without the express or implied consent of the owner or person in lawful possession of such property.

10. Where there are adjacent curbs, more than eighteen (18) inches away from the curb and not parallel to the curb.

11. Which obstructs or impedes traffic in any manner or create a hazard.

12. For a chassis rated more than one ton or a vehicle more than twenty-two feet in length, or any trailer, on a street or right of way, for 72 hours or longer.

13. On any roadway, public property, or right of way for any of the following purposes:

    (a) Displaying a vehicle or boat for sale

    (b) Washing, greasing or repairing such vehicle or boat except repairs necessitated by an emergency.

(c) Advertising or displaying commercial exhibits.

(d) Storing a vehicle or boat or for the purpose of salvaging parts of a vehicle or boat.

14. Upon any bridge or other elevated structure;

15. No person shall park or permit to be parked any motor vehicle for the purpose of sale upon any paved or unpaved lot or area within the town, except that one (1) motor vehicle may be displayed for sale at a time, when the motor vehicle is owned by the owner or resident of the property and the motor vehicle is not being offered for sale in connection with an automobile sales business. The sale of three (3) or more vehicles per year from one lot shall be considered an automobile business. The display of any signs or other markings indicating that a motor vehicle is for sale shall be prima facie evidence that the motor vehicle has been parked for sale or permitted to be parked for sale.

B. The Town Manager or his designee may designate certain of those areas referred to in subsection A above as tow-away zones. Such designation shall be based upon a determination that the designated zone is a traffic lane of such nature that a vehicle parked in such lane is a hazard to the public safety and welfare.

C. The Police Department may take charge, remove and keep in custody, any unoccupied vehicle found in violation of this section or violating any of the terms of this Code or any of the Town ordinances or state law regulating vehicles. The Police Department shall return to the owner of such an impounded vehicle when the owner has furnished evidence of his identity and ownership and signed a receipt. The owner shall pay any towing and storage fee. The towing fee shall be that fee set forth in the applicable current tow service contract between the Town and the tow contractor providing tow service to the Town. Payment of such towing and storage fee shall not release the owner or driver of such vehicle of any other penalty imposed for the violation of this Code.

Section 11-2-31. Towing on Private Property, Notices Required, Penalty, Vehicular Trespass

A. The owner or person in lawful possession of any private parking area shall be deemed to have given consent to unrestricted parking by the general public in such parking area unless such parking area is posted with signs as prescribed by this section which are clearly visible and readable from any point within the parking area and at each entrance thereto. Such signs shall contain, as a minimum, the following information:

1. Restrictions on parking.

2. Disposition of vehicles found in violation of parking restrictions.

3. Maximum cost to the violator, including daily storage fees and other charges, that could result from the disposition of a vehicle parked in violation of parking restrictions.

4. Telephone number and address where the violator can locate his vehicle.

5. Each sign shall state “Paradise Valley Town Code Section 11-2-31”.

B. No tow truck operator acting under the authority of this section shall tow a vehicle from a private parking area unless the signs are posted as required by subsection A containing all the information specified in subsection A, nor shall charge fees in excess of the amounts specified on the signs.

C. In addition to any other restrictions imposed by this section, a tow truck operator shall not tow or transport a motor vehicle from any private property without the permission of the owner or operator of the vehicle unless such tow truck operator receives a request from a law enforcement agency or a written towing order from the real property owner or his agent. A tow truck operator shall not act as the agent of the real property owner. The real property owner or his agent shall sign each towing order or authorize the tow by a written contract which is valid for a specific length of time. A tow truck operator shall not tow or transport a vehicle unless the towing order is in his possession.

D. No person shall hold or attempt to hold any vehicle towed without the consent of the owner of the vehicle as security for accrued towing or other charges. Nor shall any person require the owner of such a vehicle to give any security as a condition precedent for the release of such vehicle. A person may require the display of a driver's license or other reliable means of identification from the person claiming such vehicle to assist in the billing and collections of towing and storage charges.

E. The owner or any person authorized to represent the owner of a vehicle being towed or transported pursuant to this section may demand the release of the vehicle at any time prior to the transportation of the vehicle to a storage area. Upon such demand, the

towing or transportation of the vehicle shall be considered complete and the tow truck operator shall release the vehicle.

F. Notwithstanding any other provision of this section an abandoned vehicle may be towed from any private parking area, pursuant to a written order from the real property owner or his agent. A tow truck operator shall not act as the agent of the real property owner. The real property owner or his agent shall sign the towing order, which shall specify each vehicle to be towed and shall not authorize the towing of any unknown vehicle at a future date. A tow truck operator shall not tow or transport a vehicle unless the towing order is his possession. For purposes of this section an "abandoned vehicle" is a vehicle left in a private parking area more than ten (10) days, when it has not been left under a written contract of storage and has not during that period been removed by the person leaving it.

G. Notwithstanding any other provision of this Code, it is unlawful for any vehicle to be parked without the express or implied consent of the property owner or occupant on property which is neither a "private parking area" nor other area on which the general public has been invited to park. Such vehicle may be towed by a tow truck operator at the request of the owner or occupant without compliance with subsections A or B of this section.

H. In addition to all other provisions of this Article, any vehicle found on public street, right-of-way or public property in violation of Town ordinances or law for a period of time in excess of forty-eight (48) hours from the date and time of any notice to remove a such violating vehicle may be impounded upon order of the Police Chief or his designee. The owner of record of the vehicle shall be liable for any towing and storage charges arising therefrom.

Article 11-3 TRANSPORTATION OF EXPLOSIVE MATERIALS [353]

11-3-1 Definitions
11-3-2 General
11-3-3 Certification of Fitness
11-3-4 Motor Vehicle Liability Insurance
11-3-5 Placard Requirements
11-3-6 Vehicle Requirements
11-3-7 Class II Magazines
11-3-8 Vehicle Travel Routes and Times
11-3-9 Terminals

Section 11-3-1 Definitions

For the purpose of this ordinance, the following definitions shall apply:

A. APPROVED - as applied to a material, device or mode of construction, means approved by the Town Engineer in accordance with the provisions of the Town Code, or by other authority designated by law to give approval in the matter in question.

B. ATTENDED - shall mean that the vehicle driver or authorized designee is within 100 feet of, and has an unobstructed view of the vehicle.

C. CERTIFICATION OF FITNESS - shall mean the documentation and results of any examinations to prove the applicant meets the requirements for the Card applied for.

D. EXPLOSIVE MATERIALS - shall mean Class A, Class B, and Class C explosives, including blasting caps, detonating cord, and blasting agents.

Section 11-3-2 General

A. No person shall smoke, carry matches, or other flame-producing device, or carry any firearms or loaded cartridges while in or near a motor vehicle containing explosive materials; or drive, load or unload such vehicle in a careless or reckless manner.

B. Vehicles transporting explosive materials shall only be driven by and be in the charge of, a properly licensed driver who is physically fit, careful, capable, reliable, able to read and write the English language, and not addicted to the use of, or under the influence of intoxicants, narcotics, or other dangerous drugs, or controlled substances.

C. The driver of a vehicle transporting explosive materials shall be not less than 21 years of age. The driver shall be familiar with State and local traffic regulations, and applicable Federal regulations governing the transportation of explosive materials.

D. Explosive materials shall not be transferred from one vehicle to another within the Town Limits without informing the Paradise Valley Police Department. In the event of a breakdown or collision, the Paradise Valley Police Department shall be promptly notified.

E. No driver shall use or permit the use of any flame-producing emergency signal flares for protecting any motor vehicle transporting explosive materials. Emergency reflective triangles, red electric lanterns or red emergency reflectors shall be used.

F. No vehicle transporting explosive materials shall be parked before reaching its destination, even though attended, on any public street adjacent to or in the proximity of any bridge, tunnel, dwelling, building, or place where people work, congregate, or assemble.

G. A Certificate of Fitness Cardholder who is cited by Federal, State, County, or local agencies for the improper transportation of explosive materials, may have his/her Card revoked or suspended.

Section 11-3-3 Certification of Fitness

A. Any person requesting to transport explosive materials within the Town of Paradise Valley, shall first obtain a Certificate of Fitness Card. The Card is issued upon successfully passing a written examination administered by the Town Engineer.

B. Applications for Certificate of Fitness Cards, new or renewals, shall be made in person. Application shall be made to the Town Engineer.

C. Applicants for Certificate of Fitness Cards, new or renewals, shall successfully pass a criminal history background check conducted by the Paradise Valley Police Department.

D. A Certificate of Fitness shall not be issued when it is known or there is reason to believe that the applicant:

1. Is under indictment; or

2. Was convicted in any Court of a felony or crime of moral turpitude within the last seven (7) years; or

3. Is a fugitive from justice; or

4. Is an unlawful user of, or under the influence of intoxicants, narcotics, or other dangerous drugs, or controlled substances; or

5. Was adjudicated as a mental defective or was committed to a mental institution.

E. A Certificate of Fitness card shall not be issued when it is know, or there is reason to believe, that the applicant has an expired drivers license or the applicants drivers license is under suspension or revocation at the time of application.

F. An applicant submitting an out-of-state drivers license as identification shall:

1. Provide proof of having a valid Federal Explosives Users Permit or Federal Explosives License; or

2. Submit proof of a corporation or business entity having a Federal Explosives User's Permit of Federal Explosives License. In addition, the corporation or business entity shall provide at time of application, letterhead documenting an Arizona business address and authorizing the applicant(s) by name, to transport, use, and handle explosive materials in behalf of the corporation or business entity.

G. The Certificate of Fitness Card is valid for one (1) year and shall be renewed on an annual basis prior to the expiration date. Payment of the permit fee, shall be made at time of application. Payment of the permit fee entitles the applicant to one (1) retest within 90 calendar days; the permit fee(s) are not refundable.

H. Certificate of Fitness Cards renewed after the expiration date, but within 30 calendar days of the Card's expiration, shall require payment of a permit fee.

I. Application for Certificate of Fitness Card renewal received 31 calendar days or more after the expiration date, shall require the applicant to successfully pass a pre-scheduled written and/or oral examination administered by the Town Engineer. The permit fee shall be in accordance with the Paradise Valley Fee Schedule.

J. The Certificate of Fitness Card shall, at all times, be subject to inspection by any duly authorized Fire or Police official.

Section 11-3-4 Motor Vehicle Liability Insurance

A. In accordance with Arizona Revised Statute 28-1233.A.3.(b)., every person who transports any quantity of Class A and B explosives shall maintain motor vehicle combined single limit liability insurance in the amount of five million dollars.

B. In accordance with Arizona Revised Statute 28-1233.A.4.(b)., every person who transports Class C explosives or blasting agents shall maintain motor vehicle combined single limit liability insurance in the amount of one million dollars.

C. The applicant shall document the following when applying for a new or renewal Certificate of Fitness to transport explosive materials.

1. The applicant has read and understands Arizona Revised Statute 28-1233.

2. The vehicle used to transport explosive materials is in compliance with Arizona Revised Statute 28-1233.

3. The applicant/driver of the vehicle used to transport explosive materials is covered under a current motor vehicle liability insurance policy.

Section 11-3-5 Placard Requirements

A. The motor vehicle, when transporting any amount of explosive materials, shall be placarded on each side and each end as follows:

Class A Explosives: EXPLOSIVES A
Class B Explosives: EXPLOSIVES B

Note: The EXPLOSIVES B placard is not required when the motor vehicle contains Class A explosive materials, and as required, is placarded EXPLOSIVES A.

B. If more than 1,000 pounds of Class C explosive materials are transported, the motor vehicle shall be placarded on each side and each end as DANGEROUS.

Exceptions: See CFR Title 49, Subsection 172.504, Table 2, Footnote #1 and #9.

Section 11-3-6 Vehicle Requirements

A. Vehicles used for transporting explosive materials shall be strong enough to carry the load and shall be in good mechanical condition.

B. When explosive materials are transported on a vehicle with an open body, an approved portable magazine (see Class II Magazines) securely fastened to the vehicle body, shall be used to transport the explosive materials.

C. Floors of transportation vehicles shall be constructed to prevent loss of product.

D. Vehicles used for transporting explosive materials shall have no exposed spark-producing surface on the inside of the body.

Exception: Vehicles transporting blasting agents and oxidizing materials need not comply with this requirement.

E. Packages of explosive materials shall not be loaded above the side of an open-body vehicle.

F. Blasting caps and electric blasting caps shall be separated from other explosive materials by containment within an approved Class II magazine, when transported on the same vehicle.

G. Each motor vehicle used for transporting explosive materials shall be equipped with a minimum of two (2) fire extinguishers each having a minimum rating of 2A:10BC.

H. Only listed fire extinguishers shall be used. They shall be equipped with a device permitting visual determination of the charge condition.

I. Extinguishers shall be located where they will be accessible for immediate use.

J. The fire extinguishers shall be charged and in operative condition.

K. Extinguishers shall be examined and recharged periodically in accordance with NFPA #10, 1988 Edition.

L. A motor vehicle used for transporting explosive materials shall be in proper condition for safe transportation.

M. All electrical wiring shall be completely protected and securely fastened to prevent short- circuiting.

N. Chassis, motor, pan, and underside of body shall be reasonably clean and free of excess oil and grease.

O. Brakes, lights, horn, windshield wipers, and steering apparatus shall function properly.

P. Tires shall be properly inflated and without defects.

Q. The vehicle shall be in proper condition in every other aspect and acceptable for handling explosive materials.

Section 11-3-7 Class II Magazines

Class II magazines shall be constructed of wood, metal, fiber, or a combination thereof, or any equivalent construction as follows:

1. Two-inch nominal thickness lumber, covered on the exterior with a minimum of No. 20 manufacturer's standard gage steel, or

2. Two thicknesses of one-inch plywood covered on the exterior with a minimum of No. 20 manufacturer's standard gage steel, or

3. Fiber equal in strength of wood as indicated in Items No. 1 and 2 above, covered on the exterior with a minimum of No. 20 manufacturer's standard gage steel, or

4. Minimum No. 14 manufacturer's standard gage steel, lined on the interior with one layer of one-inch thick plywood, or

5. Material of equal strength and fire resistance.

6. Class II magazines shall be painted red and, when size permits, shall bear lettering in white on both sides and top which reads EXPLOSIVES. The lettering shall be at least three inches high with a minimum of one half inch stroke.

Section 11-3-8 Vehicle Travel Routes and Times

Any vehicle transporting explosive materials shall comply with the following:

1. No vehicles transporting explosive materials shall enter the Town between 6:30 a.m. and 9:00 a.m. Further, no vehicles transporting explosive materials shall be allowed in the Town between the hours of 4:00 p.m. and 6:30 p.m.

Section 11-3-9 Terminals

Every motor vehicle transporting any amount of explosive materials shall, at all times be attended by a driver or other qualified representative of the motor carrier operating the vehicle. The attendant shall be made aware of the class of explosive material in the vehicle and its inherent danger, and shall have been instructed in the measures and procedures to be followed in order to protect the public from those dangers. He shall have been made familiar with the vehicle he is assigned to attend, shall be trained, supplied with the necessary means, and authorized to move the vehicle when required.

Article 11-4 MOTORIZED SKATEBOARDS (GO-PEDS) [469] [480]

11-4-1 Definitions
11-4-2 Application of Traffic Laws
11-4-3 Responsibility of Parents, Guardians, and Custodians
11-4-4 Prohibited Operation
11-4-5 General Operating Restrictions
11-4-6 Operating Restrictions on Roadway
11-4-7 Required Safety Equipment
11-4-8 Violations

Section 11-4-1 Definitions

For the purpose of this Article, the following terms shall have the meanings prescribed herein unless the context clearly requires otherwise:

A. "CHILD" or "JUVENILE" means an individual who is under the age of eighteen (18) years.

B. "CUSTODIAN" means a person who has lawful custody of a child.

C. "MOTORIZED SKATEBOARD" means a self-propelled device which has a motor, a deck on which a person may ride and at least two (2) wheels in contact with the ground and which is not otherwise defined in Arizona Revised Statutes title 28, as amended, as a "motor vehicle," "motorcycle," "motor driven cycle" or "motorized wheelchair."

D. "MOTORIZED WHEELCHAIR" means a self-propelled vehicle that is designed for and used by a physically challenged, injured, or incapacitated person.

E. "MULTIUSE PATH" path means an off-road hard surfaced path which may be separated from motorized vehicle traffic by an open space or barrier. A multiuse path is used exclusively for pedestrians, and any human-powered vehicles or devices.

F. “OWNER” means any person holding the legal title of a motorized skateboard, or any person who is a lessee, conditional vendee or mortgagor of a motorized skateboard with a right to immediate possession.

G. “VEHICLE” means a device in, upon or by which any person or property is or may be transported or drawn upon a public roadway, excepting devices moved by human power or used exclusively upon stationary rails or tracks.

Section 11-4-2 Application of Traffic Laws

Every person operating a motorized skateboard upon a roadway, or any shoulder adjoining a roadway shall be granted all rights and shall be subject to all the duties applicable to the driver of a vehicle by the laws of this state declaring rules of the road applicable to vehicles, or by the traffic laws of the Town applicable to the driver of a vehicle, except as to special regulations herein and except as to those provisions which by their nature can have no application. This section shall not be construed to require the licensing or registration of motorized skateboards, the licensing of motorized skateboard operators, or the carrying of insurance covering accidents involving motorized skateboards.

Section 11-4-3 Responsibility of Parents, Guardians, and Custodians

No person shall, if a parent, guardian, or custodian of a child, authorize or knowingly permit any child to violate this article.

Section 11-4-4 Prohibited Operation

No person shall operate a motorized skateboard:

A. On any sidewalk in the city, except for use in crossing such sidewalk by the most direct route to gain access to any public or private road or driveway.

B. In the Municipal Complex.

C. On any public roadway having an established speed limit of greater than twenty-five (25) miles per hour, and the portion of McDonald Drive posted at twenty five (25) miles per hour between Tatum Boulevard and 56th Street.

D. On any private property of another, or any public property which is not held open to the public for vehicle use, without the written permission of the owner, the person entitled to immediate possession of the property, or the authorized agent of either.

On any sidewalk, or recreational path, bicycle path, or multiuse path.

Section 11-4-5 General Operating Restrictions

A. No child under the age of fourteen (14) years shall operate a motorized skateboard.

B. No person shall operate a motorized skateboard at a speed greater that is reasonable and prudent under the circumstances then existing.

C. The operator of a motorized skateboard, approaching a sidewalk, bicycle path, recreational path, or multiuse path in order to cross such, shall yield the right-of-way to all other users.

D. No operator of a motorized skateboard shall allow passengers when the motorized skateboard is in operation or motion.

E. No person operating or riding upon a motorized skateboard shall attach themselves or the motorized skateboard in any manner to any other vehicle.

F. No person shall operate a motorized skateboard while carrying any package, bundle, or article which prevents the operator from keeping both hands upon the steering mechanism at all times.

G. No person, other than the owner, shall operate a motorized skateboard without the written permission of the owner.

H. No person shall operate a motorized skateboard that has been structurally altered from the original design.

I. No person shall operate a motorized skateboard in a crosswalk.

Section 11-4-6 Operating Restrictions on Roadway

A. A person operating a motorized skateboard on a roadway at less than the normal speed of traffic, at the time and place and under the then existing conditions, shall ride as close as practical to the right hand curb or edge of the roadway, except under the following conditions and when the movement can be made in safety:

   1. If overtaking and passing a bicycle or vehicle proceeding in the same direction.

   2. If preparing for left turn at an intersection or into a private roadway or driveway.

   3. If reasonably necessary to avoid hazardous conditions ahead in the roadway.

4. If the lane in which the person is operating the motorized skateboard is too narrow for a motorized skateboard and a bicycle or another vehicle to travel safely side by side within the lane.

A. No operator of a motorized skateboard shall transport extra fuel in a separate container or alter the fuel reservoir from the original manufacturer's design. This includes the prohibition of physically attaching fuel packs or containers to the operator's person.

B. Persons operating motorized skateboards on the roadway shall not ride two (2) abreast.

Section 11-4-7 Required Safety Equipment

A. No person shall operate a motorized skateboard without a head lamp emitting a beam and a red rear reflector anytime from sunset to sunrise, or any other time when there is not sufficient light to render clearly discernible persons or vehicles on the roadway.

1. A head lamp shall emit a white light and be visible from the front at a distance no less that five hundred (500) feet.

2. A rear red reflector shall be visible when illuminated by a vehicle head lamp from a distance of not less that three hundred (300) feet.

3. A rear red lamp visible from a distance of five hundred (500) feet to the rear may be used in addition to the rear red reflector.

A. No person shall operate a motorized skateboard unless it is equipped with a brake which enables the operator to make a braked wheel(s) skid on pavement.

B. Any child operator of a motorized skateboard being operated on a roadway shall at all times wear a protective helmet on his or her head in an appropriate and safely secured manner. The helmet shall meet minimum standards of testing and safety inspected by the bicycle industry.

C. No person shall operate a motorized skateboard without wearing footwear. The footwear must have a sole and completely cover the feet and toes.

Section 11-4-8 Violations

Violations of this article are civil traffic infractions to which the provisions 11-2-25 of this chapter apply.

ARTICLE 11-5 PARADES, BICYCLE AND FOOT RACES AND RUNS, AND BLOCK PARTIES [499] Repealed 07/08/04 Ord. 542

ARTICLE 11-6 MOVING STRUCTURES [501]

11-6-1	Special Single Trip Permits Required
11-6-2	Single Trip Permit
11-6-3	Liability for Damages
11-6-4	Times Allowed For Moving Structures
11-6-6	Pay Expenses of Officer
11-6-6	Fees for Single Trip Permit
11-6-7	Penalties

Section 11-6-1 Special Single Trip Permits Required

No building or structure shall be moved upon the streets of Paradise Valley, Arizona, unless a separate single trip permit for each building or structure has first been obtained at least thirty (30) days in advance from the Paradise Valley Police Department. A "Single Trip" permit means a permit issued for a one-time, one-way, continuous operation or movement of a specific vehicle, or vehicle and load, along a designated route to a designated location.

Section 11-6-2 Single Trip Permit

A. Application for permit

To obtain a single trip permit, the applicant shall first file an application in writing with the Paradise Valley Police Department. In conjunction with the filing of the application, every such applicant shall:

1. Submit a notarized statement that the building or structure and lot from which it is to be removed are free of any entanglements and that all taxes and any Town charges are paid in full. (If applicable.)
2. Identify and describe the company authorized by the owner of the building or structure to complete the move.
3. Identify and describe the location of the building or structure to be moved and the location to which said structure will be moved.
4. Describe the vehicle or vehicles and load to be operated or moved.
5. Submit proof that the vehicle or vehicles to be used in the move comply with all State size, weight and load regulations, pursuant to Title 28, Chapter 3 of the Arizona Revised Statutes and any other applicable law.

6. Submit a map of the route to be used by the moving company that describes the streets to be used when the building or structure is moved
7. Identify locations of overhead wires and all other obstacles to ensure there will be no damage or disruption in services to any power or utility lines.
8. Submit copies of any permit(s) issued by any other agency in connection with moving the building or structure.
9. Submit a copy of the acceptance permit from the receiving municipality, county, or state.
10. Submit a traffic control plan for major intersections and movement on major or minor arterial roadways within the Town of Paradise Valley.
11. Submit proposed hours during which the movement of the structure is to be conducted.

B. Terms of Permit

The Chief of Police or his designee should review all applications for completeness and shall prescribe any additional limitations including, seasonal or other time limitations, for the movement of structures through the corporate limits of the Town of Paradise Valley, as he deems appropriate to the circumstances,

C. Retention of Permit

The permit, once issued, shall be carried in the vehicle or combination of vehicles to which it refers and shall be open to inspection by any police officer or authorized agent of The Town of Paradise Valley. A person shall not violate any of the terms or conditions of the single trip permit.

Section 11-6-3 Liability for Damages

The owner of the building or structure shall assume liability for any damage done by him or his agent to any street, light, sign, utility, landscaping or any property owned by the Town of Paradise Valley.

The Chief of Police shall require the applicant to procure such public liability and property damage insurance as shall protect the applicant and the Town from all claims for bodily injury, including accidental death, as well as for property damage arising from the movement of the structure.

The applicant shall execute a hold harmless agreement in a form acceptable to the Town and to be provided to the Paradise Valley Police Department with the application. The hold harmless agreement shall indemnify the Town and hold it harmless against any and all losses and liabilities for personal injury, death, or property damage arising out of, or

as a consequence to the move, and any and all expenses related to claims or lawsuits resulting from the above, including court costs and attorney fees.

Section 11-6-4 Times Allowed For Moving Structures

It shall be unlawful to move a building or structure except within the time period allowed. That time shall be limited from 11:00 p.m. to 6:00 a.m.

Section 11-6-5 Pay Expenses of Officer

The applicant shall pay the expense of an off-duty uniformed Arizona certified police officer ordered by the Chief of Police to accompany the movement of the building or structure to protect the public from injury. Officers may be employed from any Arizona law enforcement agency, but if they are not Paradise Valley Police Department officers, the officer must check in with the Paradise Valley Police Department immediately prior to the movement of the structure.

Section 11-6-6 Fees for Single Trip Permit

All single trip permit fees shall be those prescribed in the Town of Paradise Valley Fee Schedule. These fees shall reimburse the Town for its permit and inspection fees and for costs reasonably related to the administration of the permit and activities pursuant to the permit.

Section 11-6-7 Penalties

Any person who shall violate any of the provisions of this Ordinance shall be guilty of a Class 1 Misdemeanor and upon conviction thereof shall be punished by a fine not to exceed two thousand five hundred dollars ($2,500.00) or by imprisonment for a period not to exceed six months or by both fine and imprisonment. Each day that a violation continues shall be a separate offense punishable as described. In the alternative to the criminal penalty, civil prosecution may proceed pursuant to this Article by citation for civil sanction(s). The procedure for civil actions shall be as outlined in §8-6-5 of this code.

ARTICLE 11–7 RESIDENTIAL PERMIT PARKING

11-7-1 Designation of Residential Permit Parking Area

The Town Manager may designate, subject to Town Council approval, a residential area or areas consisting of streets or portions of streets on which the parking of motor vehicles may be restricted in whole or in part to motor vehicles bearing a valid parking permit issued pursuant to these provisions.

11-7-2 Eligibility of Residential Areas of Designation

A residential area shall be deemed eligible for designation for residential permit parking where the Police Chief finds that a preponderance of the residents in a particular area are impacted on a regular basis by illegally parked vehicles owned by non-residents.

11-7-3 Issuance of Permits; Signing; Exemptions

Following Town Council approval of a residential permit parking area, the Police Chief shall provide for issuance of permits and cause parking signs to be erected in the area indicating times and conditions under which parking shall be by permit only. A permit shall be issued upon application and payment of the applicable fee only to an owner of property immediately adjacent to a street within the residential permit parking area. Each permit is the property of the Town and shall be assigned to a single residence with a limit of three parking permits per residence. Permits shall be issued to only the owner of the residence on the “permit parking only” street. Permits may be used by guests of the residence, but not be sold, rented or transferred. Resident permits would be valid for 12 months from date of issue. This Article exempts service and delivery vehicles while parked for the purpose of providing service or delivery in the residential parking permit area. Those vehicles must be clearly identified with company name.

11-7-4 Fees

The Town Manager is authorized to establish, with Town Council approval, an annual residential parking fee to cover the administrative costs of permits issued pursuant to these provisions.

11-7-5 Administrative Guidelines

The Police Chief is to prepare, and the Town Manager may issue, an administrative directive as they may deem necessary and desirable to implement the provisions of this Article.

11-7-6 Permit Visibility; Placement

Permits must be clearly visible and shall be placed on the driver side dashboard without obscuring the vehicle identification number (VIN).

11-7-7 Effective Date/Termination

The residential permit parking process will take effect in the manner permitted by law, and shall be reviewed by the Council one year after implementation and automatically sunset on July 1, 2017 unless otherwise extended by the Town Council.

ARTICLE 11-8 PEDESTRIAN/TRAFFIC SAFETY

Crossing or Stopping in a Roadway

A. Except in a crosswalk, no pedestrian shall cross a roadway at any place other than by a route at right angles to the curb or by the shortest route to the opposite curb. A pedestrian shall not cross a roadway where prohibited by signs, devices or by law.

B. No pedestrian may stop or remain in the portion of the roadway designed for vehicular use, or in a painted or raised traffic island or median not designated for use by pedestrians, except to wait to cross the roadway, when appropriately signaled or, in the absence of a pedestrian signal, when traffic has cleared.

C. Before any pedestrian is cited for a civil violation of this section, the pedestrian must be given a warning by law enforcement. The first violation of this section, after the warning is given, is a civil traffic offense, and a second or subsequent violation of this section is a Class 1 misdemeanor.

FOOTNOTES

46 Ordinance #147 - 12/12/78
47 Ordinance #109 - 12/4/75
48 Ordinance #107 - 9/25/75
49 Ordinance #125 - 8/12/76
92 Ordinance #195 - 3/25/82
97 Ordinance #202 - 4/14/83
117 Ordinance #226 - 2/28/85
153 Ordinance #272 - 8/27/87
156 Ordinance #275 - 12/17/87
172 Ordinance #297 - 3/23/89
193 Ordinance #332 - 2/13/92
204 Ordinance #332 - 2/13/92
353 Ordinance #353 - 2/09/93
357 Ordinance #357 - 8/03/93
359 Ordinance #359 - 8/03/93
385 Ordinance #385 - 12/15/94
386 Ordinance #386 - 12/15/94
416 Ordinance #416 - 6/13/96
426 Ordinance #426 - 9/26/96
442 Ordinance #442 - 5/15/97
469 Ordinance #469 - 9/24/98
480 Ordinance #480 - 2/25/99 (Amends Scriver's error of Ordinance #469)
482 Ordinance #482 - 7/8/99
487 Ordinance #487 - 6/10/99
499 Ordinance # 499 – 3/9/2000
501 Ordinance #501 – 3/9/2000
504 Ordinance # 504 – 6/8/2000
542 Ordinance # 542 – 07/08/2004
597 Ordinance # 597 – 07/12/2007
688 Ordinance #688 – 06/11/2015
689 Ordinance #689 – 06/11/2015

CHAPTER 12 MUNICIPAL COURT

Article 12-1 **MUNICIPAL COURT ESTABLISHED; JURISDICTION**

Article 12-2 **OFFICERS, POWERS AND DUTIES** [510]

12-2-1 Presiding Judge [669]
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12-2-3 Judges Generally
12-2-4 General Responsibilities of the Presiding Judge
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Article 12-3 **PROCEEDINGS OF COURT** [574 613 674]

12-3-1 Proceedings
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Article 12-4 **ESTABLISHMENT OF COURT FEES** [674 687]

12-4-1 Reimbursement for Jail Costs
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12-4-3 Court Enhancement Fee
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CHAPTER 12 MUNICIPAL COURT

Article 12-1 MUNICIPAL COURT ESTABLISHED; JURISDICTION [674]

The Municipal Court of the Town of Paradise Valley is hereby established. The Municipal Court shall have the power and jurisdiction to hear and adjudicate all criminal misdemeanors, civil traffic offenses, and Town Code violations occurring within the Town limits, as well as jurisdiction over orders of protection, hearings to keep the peace, harassment injunctions, and the issuance of summons and arrest warrants within the Town limits. The Municipal Court is part of the judicial branch of government and is and shall remain independent from other branches as provided for in the Arizona Constitution, and shall have all authority granted to a municipal court under the Arizona Constitution, the Arizona Revised Statutes, and this Town Code.

Article 12-2 OFFICERS, POWERS AND DUTIES [105 119 555 402 441 510 674]

12-2-1 Presiding Judge
12-2-2 Associate Judges
12-2-3 Judges Generally
12-2-4 General Responsibilities of the Presiding Judge
12-2-5 Pro Tem Judges
12-2-6 Appointment of Hearing Officers
12-2-7 Court Administrator and Court Clerks

Section 12-2-1 Presiding Judge [105 119 402 510 669 674]

A. The chief officer of the Municipal Court shall be the Presiding Judge who shall be appointed by the Council for a term of two years, which term shall end October 31 of all odd numbered years. During such term of office, the Presiding Judge shall serve for such salary as the Council may determine.

B. There shall be an Associate Presiding Judge who shall be appointed by the Presiding Judge and confirmed by the Council, for a term of two years which term shall end September 30 of all odd numbered years. During such term of office the Associate Presiding Judge shall have and perform any duties as may be assigned by the Presiding Judge. During the term of office, the Associate Presiding Judge shall serve for such salary as the Council may determine.

Section 12-2-2 Associate Judges [105 119 510 669]

The office of Associate Judge is hereby created. The Associate Judges shall be appointed by the Council for a term of two years, which term shall end October 31 of all odd numbered years. During such term of office, the Associate Judges shall serve for such salary as the Council may determine.

Section 12-2-3 Judges Generally [510]

A. The Council shall appoint and may remove for cause, the Presiding Judge, the Associate Presiding Judge, and all such additional Associate Judges as the Town Council deems necessary.

B. In the event of the death, resignation, suspension, or removal of a Judge the Town Council may appoint a qualified person to fill the vacancy for the unexpired term of office. The manner of selection, and/or reappointment shall be as provided for in this Article, pursuant to Arizona Revised Statutes Section 22-403.

C. Each Judge of the Municipal Court shall exercise powers, duties and responsibilities as provided by the constitution and laws of this State, Town ordinances, and the orders, rules, and directives of the Supreme Court of Arizona.

D. All Judges of the Municipal Court shall meet the minimum following qualifications:

(1) Possess a law degree from an accredited law school and be a member of the State Bar of Arizona in good standing for a minimum period of two (2) years.

(2) Have sufficient experience and temperament to preside over the Municipal Court and continue to meet all qualifications as may be established by the Arizona Supreme Court or as required by law for such Judges.

Section 12-2- 4 General Responsibilities of the Presiding Judge [105] [510]

The Presiding Judge shall be responsible for duties including, but not limited to, the following:

A. The powers and duties set forth and conferred upon the Court under the provisions of the State Constitution, Statutes, rules and administrative orders of the Supreme Court, this Code, and the ordinances and resolutions of the Town.

B. The keeping of a docket in which shall be entered each action and the proceedings of the Court therein.

C. The responsibility for fixing and receiving all bonds and bails and receiving all fines, penalties, fees, and other monies as provided by law.

D. Payment of all fees, fines, penalties, and other monies collected by the Court to the Treasurer.

E. Submitting a monthly report to the Council summarizing Court activities for that month. Preparation of the Municipal Court's proposed annual budget and presentation of the budget to the Town Council in connection with the Town's annual budget development process.

F. Preparation of a schedule of traffic violations not involving the death of a person, listing specific bail for each violation.

G. Designation of a Deputy other than a law enforcement officer and a specific location at which the Deputy shall, during hours when the Court is not open, set the amount of bail in accordance with the foregoing schedule and collect such bail, or accept proper bail bonds in lieu thereof, for and on behalf of the Court.

H. Presiding over civil and criminal arraignments, hearings, and trials pursuant to Arizona Revised Statute Section 22-402.

I. Submitting to the Town Manager, names of members of the State Bar who are available as additional Judges, or Pro Tempore Judges serving terms of greater than six (6) months in any two year period, and assisting the Town Manager in submitting recommendations for appointment to the Town Council.

J. Managing the administration of the judicial and internal administrative functions of the Municipal Court as the department head, including the supervision of all judges and administrative staff involved in the operation of the court.

K. Comply with the rules, policies and procedures established by the Town in respect to employment practices, including, but not limited to, hiring, classification, salary administration, performance evaluation, termination, discipline, grievance procedures, overtime, leave time and work hours.

L. Adhering to State law and the policies and procedures of the Town in budgeting and expenditure procedures.

M. Comply with all Town rules, regulations, policies, and directives of the Town which are not inconsistent with the constitution, State law, Town ordinances, or administrative orders of the Supreme Court.

Section 12-2-5 Pro Tem Judges [441 510]

The Presiding Judge may appoint Judges to serve on a temporary or "pro tempore" basis. Such Pro Tem Judges shall not be eligible for compensation or benefits and shall be appointed for a limited term as follows:

A. Individuals meeting the minimum qualifications enumerated in Section 12-2-3(d) of this Article may be appointed for terms of up to six (6) months. Pro Tem Judges

serving a term greater than six (6) months in a two year period shall be subject to Town Council approval.

B. The Presiding Judge or Associate Presiding Judge may appoint a Supreme Court certified limited jurisdiction Judge for a term of 24 hours as necessary for Court business.

Section 12-2-6 Appointment of Hearing Officers [155 419 510]

A. The Presiding Judge may appoint Hearing Officers for a term of up to one year, which term shall end September 30 of each year. Hearing Officers shall only preside at hearings of civil violations.

B. Hearing Officers must meet qualifications as may be established by the State Supreme Court or as may be required by Statute.

Section 12-2-7 Court Administrator and Court Clerks [510]

A. The Presiding Judge shall designate a Court Administrator, in conformance with the Town's employment polices and practices, who shall be co-custodian of the Court records, including all books, papers, and records that are filed with or deposited in the Municipal Court.

B. The Court Administrator shall perform administrative functions as assigned by the Presiding Judge.

C. The Presiding Judge may designate such deputy clerks, and other Court staff, as may be reasonably necessary to assist in the performance of duties under this Section, in conformance with the Town's employment policies and practices.

Article 12-3 PROCEEDINGS OF COURT [674]

12-3-1 Proceedings [510]
12-3-2 Jury Trials [93 510]

Section 12-3-1 Proceedings

A. The proceedings shall be conducted in accordance with the State Constitution, the applicable State Statutes and rules of the State Supreme Court pertaining to Municipal Courts. The proceedings shall also be conducted in accordance with the rules of criminal procedure for the Superior Court, unless otherwise prescribed, and providing this Code and resolutions of the Town are not in conflict therewith.

B. The Municipal Court proceedings shall be commenced by complaint under oath and in the name of the State setting forth the offense charged with and such particulars of time, place, person, and property as to enable the defendant to understand distinctly the character of the offense complained of and to answer the complaint.

C. If the Judge is satisfied that the offense complained of has been committed, the Judge shall issue a summons or a warrant of arrest. Before issuing a summons or warrant of arrest on a complaint, the Judge may subpoena and examine witnesses as to the truth of the complaint.

Section 12-3-2 Jury Trials

A. The right of trial by jury shall be granted in all cases of such a nature as are triable by jury under the Constitution and laws of the State.

B. Each juror for every day's attendance in the Municipal Court shall be paid a sum fixed by Council.

C. The formation and summoning of juries in the Municipal Court shall be done in the same manner as provided for in courts of record. Each juror in the Municipal Court shall be paid by the Town as provided by law.

Article 12-4 ESTABLISHMENT OF COURT FEES [674 687]

The amount to be charged by the Municipal Court for all fees set forth in this Article shall be set by the Presiding Judge, who shall inform the Town Council of such fees, both as initially set or as such fees may be changed from time to time. The fee schedule set by the Presiding Judge shall remain in effect until a new fee schedule is established by the Presiding Judge.

Section 12-4-1 Reimbursement of Jail Costs

A. Any person who has been convicted of a misdemeanor offense in the Municipal Court and sentenced to a term of incarceration in the county jail, or any other detention facility authorized by law, must as a part of any fine imposed by the court in connection with the sentencing, be required to reimburse the Town for all or any part of the actual expenses the Town has or will incur to the county or other authorized detention facility because of the incarceration. The maximum amount ordered for reimbursement shall not exceed the number of days the misdemeanant is actually incarcerated in the county jail or detention facility, multiplied by the per diem rate charged to the Town at the time the misdemeanant is incarcerated.

B. A person who has been found by the Court to be indigent may not be ordered to pay reimbursement.

C. In addition to any other remedies which may be allowed by law, the Town Attorney is authorized to institute civil legal proceedings to recover any fee or expense owing under the terms of this section.

Section 12-4-2 Court Administration Fees

A. A Municipal Court Time Payment Fee shall be paid to the Municipal Court for the payment of every fine, sanction, fee, restitution or court cost (including sanctions paid by community service hours) that is not paid in full on the date of adjudication. This fee is in addition to the time payment fee required under A.R.S. Section 12-116(A). Exceptions may be made for bond forfeitures to fines when the bond has not been received by the court or when a Defendant is in custody and receives time served.

B. A Warrant Fee shall be assessed when it is necessary for the Court to issue a warrant for arrest in a criminal matter. All or any part of this fee may be waived by the Court if the arrestee is found to be indigent or waiver of the fee is in the best interest of justice.

C. A Default Fee shall be assessed when a defendant defaults in his or her obligation for the payment of monies owed or due to the Municipal Court including, but not limited to, restitution, fines, sanctions, surcharges, assessments, penalties, bonds, costs and fees, is liable for any fees and charges assessed by a collection agency that is licensed pursuant to Title 32, Chapter 9, Article 2, Arizona Revised Statutes and that is engaged by the Municipal Court to collect and enforce such payment. The collection fees and charges assessed by the collection agency shall be added to the sum or sums due from and chargeable against the defendant.

D. A Court Appointed Attorney Fee shall be assessed on a defendant who utilizes the services of a court appointed attorney, said fee to be a percentage of those costs based on the defendant's financial statement. A Judge may waive all or any part of the fee if the payment of the fee would cause a hardship to the defendant.

E. A Diversion, Probation or Deferred Prosecution fee shall be assessed to any defendant who is assigned to a diversion, probation, or deferred prosecution program that has a specific compliance date ordered by the court, and when it becomes necessary to re-schedule any diversion, probation, or deferred prosecution program. A Judge or hearing officer may waive all or any part of the fee if the payment of the fee would cause a hardship to the defendant.

Section 12-4-3 <u>Court Enhancement Fee</u>

A. There is created a Court Enhancement Fund, which shall be used exclusively to enhance the staffing, technology, security or facilities of the Municipal Court.

B. The Court Enhancement Fund shall be funded by a Court Enhancement Fee applied per charge, which shall be applied by the Municipal Court on all fines, sanctions, penalties and assessments imposed by the Municipal Court. The fee shall also apply to court administrative fees and process service fees.

C. The Court Enhancement Fund shall be established as a designated fund account with the Budget and Finance Director. The Municipal Court shall collect Court Enhancement Fees and deposit them in the Court Enhancement Fund account. The Director of Administration and Government Affairs shall invest the monies in the fund in the same manner as Town funds. Interest earned on fund monies shall be deposited in the fund.

D. The Municipal Court shall administer, through the annual budget process of the Town of Paradise Valley, and may make expenditures from the Court Enhancement Fund for the purposes provided in this section. Monies from the fund shall supplement monies already provided for the Municipal Court for the general purposes stated in this section.

E. The Municipal Court shall annually submit to the Town Manager a report detailing the amount of money collected and expended during the reporting period and the progress made in court enhancement.

Section 12-4-4 Public Safety Recovery Fee

A. A Public Safety Recovery Fee shall be assessed by the Municipal Court on all fines, sanctions, penalties and assessments imposed by the Municipal Court. This fee shall not be imposed on civil parking violations.

B. Upon a finding of indigency or in the interests of justice, the Judge may waive the Public Safety Recovery Fee if it also waives all other fees or surcharges that it has discretion to waive.

C. A public safety recovery fee account is hereby established for the purpose of enhancing public safety operations, said fees to be deposited into the Paradise Valley general fund.

Section 12-4-5 Prosecution Assessment

A. A prosecution assessment shall be imposed by the Judge on all offenses processed by the Municipal Court which result in an order or agreement to pay any fine, sanction, or penalty, or participate in any court authorized diversion or deferred prosecution programs. The Judge shall assess this for cases which are based upon a criminal or petty offense arising out of a violation of Arizona Revised Statutes or the Paradise Valley Town Code.

B. Upon a finding of indigency or in the interests of justice, the Judge may waive this assessment if it also waives all other fees or surcharges that it has discretion to waive.

C. The prosecution assessment shall be collected by the Town's municipal court for deposit into the Town's General Fund.

Section 12-4-6 Photo Enforcement Technology Recovery Fee

A. A Photo Enforcement Technology Recovery Fee shall be assessed by the Municipal Court on all fines, sanctions, penalties and assessments resulting from a charge involving the use of photo enforcement technology.

B. A Photo Enforcement Technology Recovery Fee account is hereby established for the purpose of offsetting the cost of the Town's photo enforcement program, said fees to be deposited into the Town of Paradise Valley general fund.

FOOTNOTES

93 Ordinance #197 - 5/27/82
105 Ordinance #210 - 11/10/83
119 Ordinance #229 - 4/25/85
155 Ordinance #274 - 9/24/87
397 Ordinance #397 - 2/23/95
402 Ordinance #402 - 3/23/95
419 Ordinance #419 - 6/13/96
441 Ordinance #441 - 3/27/97
484 Ordinance #484 - 7/8/99
510 Ordinance #510 - 3/8/2001
574 Ordinance #574 – 11/17/2005
613 Ordinance #613 – 06/11/2009
620 Ordinance #620 – 02/25/2010 (effective 07/01/2010)
623 Ordinance #623 – 05/27/2010 (effective 07/01/2010)
669 Ordinance #669 – 03/28/2013
674 Ordinance #674 – 03/27/2014 (effective 04/26/2014)
687 Ordinance #687 – 07/12/2015 (effective)

CHAPTER 13 FIRE PROTECTION

Article 13-1 FIRE PROTECTION [593]

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13-1-2 Entry upon Adjacent Property
13-1-3 Providing Fire Protection outside the Town
13-1-4 Acknowledgement of Right of Way
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13-2-3 Penalty
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CHAPTER 13 FIRE PROTECTION

Article 13-1 FIRE PROTECTION [593]

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Section 13-1-1 Created; Composition

There is hereby created a Fire Department for the Town, provided, however, that said Department shall not be activated until such time as the Council deems it advisable. In the event the Town enters into a contract for fire protection services, the Fire Department shall consist of said entity and its employees.

Section 13-1-2 Entry upon Adjacent Property

It shall be lawful for any firefighter to enter upon the premises adjacent to or in the vicinity of any building or other property that is on fire for the purpose of extinguishing such fire, and no person shall hinder, resist or obstruct any firefighter in the discharge of his or her duty as herein-before provided.

Section 13-1-3 Providing Fire Protection outside the Town

The Town may enter into agreements to furnish or secure fire protection outside the Town or enter into mutual aid or automatic agreements.

Section 13-1-4 Acknowledgement of Right of Way

All clearly marked fire apparatus operating with emergency lights shall have right of way over all other traffic. No unauthorized vehicle shall follow within six hundred feet of any fire apparatus, nor park any vehicle within three hundred feet of a fire. No person shall park any vehicle or otherwise cause any obstruction to be placed within seventy-five feet of the entrance to any fire station or other place where fire apparatus is stored, or within fifteen feet of any fire hydrant or standpipe. No person shall drive any vehicle over a fire hose except upon specific orders from the Chief or other officer in charge where the hose is used.

Section 13-1-5 Fire Alarms

It shall be unlawful for any person to intentionally turn in or cause to be turned in a false alarm.

Section 13-1-6 Fire Flows

A. The minimum fire flow from all hydrants in the Town will be 1,500 gallons per minute (5,678.1 liters per minute).

B. The Fire Marshal may increase or decrease minimum hydrant flows based on review of hazard and water distribution system.

Article 13-2 ADOPTION OF INTERNATIONAL FIRE CODE; PERMIT FEES; VIOLATION

13-2-1 Adoption of International Fire Code, 2012 Edition [648]
13-2-2 Fire Marshal Authority
13-2-3 Penalty
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13-2-5 Amendments to the 2012 International Fire Code [648]
13-2-6 Hydrant Spacing

Section 13-2-1 Adoption Of International Fire Code, 2012 [648] Edition

The International Fire Code, 2012 Edition, as published by the International Fire Code Council and all appendices are adopted by reference and shall be the Fire Code for the Town of Paradise Valley. Three (3) copies of same shall at all times remain in Town Offices available for public use and inspection.

Exceptions:
I.F.C. Appendices B, E, F, and G are adopted as Code.
I.F.C. Appendix A is deleted from adoption.

Section 13-2-2. Fire Marshal Authority

The Town assigns to the Fire Marshal responsibility and authority to enforce and interpret International Fire Code requirements.

Section 13-2-3 Penalty

Except when a different punishment is prescribed, an unlawful act or omission of this Article is punishable as provided for in Article 1-9 of the Town Code. Each day that a violation continues shall be a separate offense punishable as described.

CHAPTER 13 FIRE PROTECTION

Section 13-2-4 Definitions

Definitions: the following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this Section, except where the context clearly indicates a different meaning:

"Code" or "Fire Code" shall mean the International Fire Code, 2012 Edition as published by the International Fire Code Institute.

"Fire Marshal" shall be the person(s) designated by the Town, having authority to interpret, enforce, and implement the Fire Code and associated standards in the Town of Paradise Valley. The Fire Marshal shall also have all the duties and authorities designated for the Fire Chief and Fire Department throughout the Fire Code.

"NICET" means: the National Institute for the Certification of Engineering Technologies, 1420 King Street, Alexander, VA 22314-2915.

"NFPA" means the National Fire Protection Association.

"OSHA" means the Occupational Safety and Health Administration.

"Town" means: the Town of Paradise Valley, Arizona

"Town Code" means: the Town Code of the Town of Paradise Valley, Arizona

"International Building Code" shall mean: the International Building Code as adopted by the Town and as published by the International Code Council, located at 5360 Workman Mill Road, Whittier California 90601-2298

13-2-5 Amendments to the 2012 International Fire Code [509 563 589 648]

A. Section 102, *subsection 102.9.1* is amended to read:

Section 102.9.1 Conflicting Provisions. When a provision of the 2012 International Fire Code is in conflict with a provision of the National Fire Protection Association (NFPA) standards, and the conflict relates to life and building safety performance requirements, the Fire Marshal shall have the discretion to determine which provision shall apply.

B. Section 104, *subsections 104.8.1*, *104.12.1*, *104.12.2* are added to read:

Section 104.8.1 Indemnity. In the event that the Fire Marshal, Town Manager or Town Council has authorized alternate materials and methods, or approved significant departures from the standards of this code (hereinafter, collectively, "code deviations"), in recognition of practical difficulties or otherwise, the Town may require that the person or entity benefiting from the code deviations execute: 1) an indemnification agreement, in a form satisfactory to the Town, that releases the Town of Paradise Valley, its agents, employees and the default fire protection licensee, from liability related to the code deviations; and 2) a notice of indemnification obligation to be recorded with the Maricopa County Recorder against the property benefiting from the code deviations that obligates all successors in interest to the property to complete and fulfill the terms of the indemnification agreement.

Section 104.12.1 Fee Schedule. A fee schedule outlining charges for permits, plans review and other services, which may be amended from time to time, shall be those specified in the default provider license agreement, as provided for in Article 13-2 of the Town Code.

Section 104.12.2 Valuation. The building official shall make the determination of value or valuation under any of the provisions of this code. The value to be used in computing the building permit and building plan review fees shall be the total value of all construction work for which the permit is issued as well as all finish work, painting, roofing, electrical, plumbing, heating, air conditioning, elevators, fire-extinguishing systems and any other permanent equipment.

C. Section 108, *subsection 108.1* is amended to read:

Section 108.1 Boards Of Appeal. If a person or entity applying for a permit subject to compliance with this code does not incorporate design recommendations made by the Fire Marshal for fire protection purposes, or contests a decision made by the Fire Marshal on the suitability of alternative materials and types of construction, or on the interpretation of the Code, (hereinafter "decision") a formal written appeal may be made to the Town Manager. The Town Manager may change or alter the decision of the Fire Marshal regarding requirements for issuance of a permit. If said person is aggrieved by the finding of the Town Manager on appeal, said person may, within 30 days of the final decision by the Town Manager, file a written request for an appeal to the Town Council. The Town Manager shall then forthwith transmit to the Council all papers constituting the record, if any, upon which the decision appealed was taken. The Council shall hear and decide the appeal, and shall thereafter affirm, modify or reverse the decision of the Town Manager.

D. Section 202, *institutional Group I-1, residential Group R, R-3, R-4* are amended to read:

Group I-1. This occupancy shall include a building or part thereof housing more than 10 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment but which provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This Group shall include, but not be limited to, the following: residential board and care facilities, assisted living facilities, half-way houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug centers and convalescent facilities. A facility such as the above with five or less persons will be classified as Group R-3. A facility such as above, housing at least six and not more than 10 persons shall be classified as Group R-4.

Group R-3. Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, R-4 or I and where buildings do not contain more than two dwelling units or adult and child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours. Adult and childcare facilities that are within a single-family home are permitted to comply with the *International Residential Code*.

Group R-3 residential care/assisted living facilities occupancies in existing structures with one (1) to five (5) client shall meet the following requirements:

A. Interconnected smoke detectors shall be installed in all livable areas in accordance with Town of Paradise Valley Code.
B. Posted evacuation map and emergency procedures
C. Portable fire extinguishers

Group R-4. Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than 10 occupants, excluding staff.

Group R-4 residential care/assisted living facilities occupancies shall meet the requirements for construction as defined in Group R-3 except for the height and area limitations provided in Section 503 of the *International Building Code*.

Group R-4 residential care/assisted living facilities occupancies in existing structures with six (6) to ten (10) clients and all new structures shall meet the following requirements:

A. Interconnected smoke detectors shall be installed in all livable areas in accordance with Town of Paradise Valley Code.
B. Posted evacuation map and emergency procedures, per Fire Marshal.
C. Portable fire extinguishers in accordance with Town of Paradise Valley Code.
D. An automatic fire sprinkler system in accordance with the Town of Paradise Valley Code.

E. Section 303, *subsections Section 303.3, 303.10, and 307.3* are amended to read:

Section 303.3 Location of Fuel Sources. The fuel source shall be a minimum of twenty-five (25) feet (7620 mm) feet from the kettle and supported in an upright position during operation of the kettle.

Section 303.10 Permits Required. A permit shall be obtained from the Fire Marshal by all operators or owners of asphalt or tar kettles at least forty-eight (48) hours prior to starting work on any structure within the Town limits.

Section 307.3 Extinguishment Authority. The Fire Marshal, or any sworn police officer of the Town, is authorized to order the extinguishment by the person responsible or the fire department of open burning that creates or adds to a hazardous or objectionable situation.

F. Section 308, *subsections 308.3.1 and 308.3.1.1* are amended to read:

Section 308.3.1 Open-Flame Cooking Devices. Charcoal burners, portable barbecues and other open flame devices shall not be operated on combustible balconies or within ten (10) feet (3048 mm) of combustible construction.

Exception: one and two family dwellings.

Section 308.3.1.1 Liquefied- Petroleum- Gas- Fueled Cooking Devices. No person shall use individual fixed or portable LP-gas burners or barbecues on or under any attached covered patios, balconies, covered walkways, stair or roof overhangs and shall not be located within ten (10) feet (3048 mm) of combustible construction.

Exception: Single dwellings.

Section 308.3.1.2 Storage. Storage of barbecues on or under balconies will be allowed unless the Fire Marshal receives complaints or suspects the barbecue is being used, in which case the Fire Marshal will require the barbecue be removed from the premises.

G. Section 503, *subsection 503.2.7, 503.3* and 503.4.1 are amended and *subsections 503.1.4.1*, and *503.6.1* are added to read:

Section 503.1.4.1 Temporary Fire Department Access. Temporary Fire Department access roadway prior to and during construction of every facility, building or portion of a building shall install and maintain a roadway 16 feet (4,877 mm) wide, with a minimum four (4) inches (101.6 mm) thickness of aggregate base course or decomposed granite compacted to a 90% density where natural soil will not meet compaction requirements.

Section 503.2.7 Grade. The grade of the fire apparatus access road shall be within the limits established by the Fire Marshal or the Town based on the Fire Department's apparatus. Access roads shall comply with the following:

1. The grade of access for non-sprinklered properties shall not exceed 12%.
2. The grade of access for sprinklered properties shall not exceed 15%.
3. All grades of access in excess of 15% require approval by the Fire Marshal.

Section 503.3 Marking. The Fire Marshal may establish fire lanes on public and private property for access and setup of firefighting equipment apparatus and vehicles. All fire lanes shall be marked in the following manner:

1. The curb shall be painted red to indicate fire lane and labeled "Fire Lane No Parking" in white block letters three (3) inches (76.2 mm) in height, ¾ inch (19.5 mm) stroke, on the vertical face of the curb.
2. Lettering shall not be greater than fifty (50) feet (15.24 m) apart and shall be posted at the beginning and end of the fire lane.
3. Using different paving material than the driving surface to indicate a fire lane may mark the street or driveway. Appropriate signage must be posted to indicate the presence of the fire lane.

Section 503.4.1 Obstruction of Fire Lane, Penalty. It shall be unlawful for any vehicle, equipment or device to park in or block the fire lane. Any vehicle, equipment or device found parked in, or blocking a fire lane shall be cited by Police or Fire Marshal.

Section 503.6.1 Key Switch and Sensor Pre-Emption Location. A key switch or pre-emption sensor shall be required on all electric entry control gates. Key switch shall be installed in a location on the gate control panel that is readily visible and accessible. The pre-emption sensor shall be at or behind gate.

H. Section 506, *subsection 506.1.2* is added to read:

Section 506.1.2 Key Box Location. A key box shall be required on all commercial structures that contain off-site monitored fire systems or when required by the Fire Marshal. The key box shall be installed in a location adjacent

to the main entrance of the structure, four (4) feet (1.219 m) to six (6) feet (1.829 m) above finished grade.

I. Section 508, *subsections 508.5.1.1, 508.5.1.2, and 508.5.7*, are added and *subsection 508.5.4* is amended to read:

Section 508.5.1.1 Dead ends. On cul-de-sacs in residential and commercial developments, the maximum distance to a hydrant shall not exceed one half (1/2) of the maximum allowable distance between fire hydrants designated in 508.5.1 exceptions.

> **Exception**: hillside shall have a maximum of six hundred (600) feet (182,880 mm) from a hydrant to the dead end.

Section 508.5.1.2 Modifications. Subsections 508.5.1 and 508.5.1.1 of this Section may be modified by the Fire Marshal or designee when features of the area, building construction details or practical difficulties prohibit the enforcement of the Code, provided that the spirit of the Code shall be observed, public safety secured.

Section 508.5.4 Obstruction. Posts, fences, vehicles, growth, trash, storage and other materials or objects shall not be placed or kept near fire hydrants, Fire Department inlet connections or fire protection system control valves in a manner that would prevent such equipment or fire hydrants from being immediately discernible. The Fire Department shall not be deterred or hindered from gaining immediate access to fire protection equipment or fire hydrants. A thirty (30) foot wide no parking area directly in front of fire hydrants and fire protection equipment shall be maintained free from vehicle obstructions.

Section 508.5.7 Reflective Markers. All fire protection equipment, fire fighting connections and hydrants shall be clearly identified by installation of reflective blue markers.

J. Section 901, *subsections 901.2.2, 901.2.3, 901.2.4, 901.2.5* and *901.6.3* are added to read:

Section 901.2.2 Plan Certification for Fire Alarm Systems and Occupant Notification. All fire alarm and occupant notification system plans submitted to the Fire Marshal for review and approval shall bear a review certification of a minimum level III NICET for fire alarms.

Section 901.2.3 Plan Certification for Fire Sprinkler Systems. All fire sprinkler plans submitted to the Fire Marshal for review and approval shall bear a review certification of a minimum level III NICET for fire sprinklers.

Section 901.2.4 Plan Certification for all Other Fire Protection Systems. Plan certification for all other fire protection systems will be accompanied by a certification of competence when required.

Section 901.2.5 On-site Plans. Plans and specifications shall be submitted to the Fire Marshal for review and approval prior to construction. One set of Fire Marshal approved plans shall be on the job site for each inspection.

Section 901.6.3 Annual Inspection. Sprinkler systems in commercial and multi-family occupancies shall be inspected and tested in accordance with NFPA Standard 25 and the Fire Marshal sprinkler guidelines by a contractor with an Arizona State L-16 license.

K. Section 903, *subsections 903.2, 903.2.1, 903.2.2, 903.2.4, 903.2.5, 903.2.6, 903.2.7, 903.2.8, 903.2.8.1, 903.2.9, 903.2.9.1, 903.2.10, 903.3, 903.3.6, 903.3.7,* and *903.4.2* are amended and *subsections 903.2.14, 903.3.7.1, 903.3.7.2, 903.3.7.3* and *903.3.7.4* are added to read:

Section 903.2 Where Required. An automatic sprinkler system shall be installed throughout all levels of all new Group A, B, E, F, H, I, M, R, S and U occupancies of more than zero (0) square feet; in accordance with Section 903 as set in this Section.

1. In every story or basement of all buildings. Fire resistive substitutions in accordance with provisions in the *International Building Code*, Chapter 6, footnote "D" are allowed for this subsection for Group R occupancies and for other occupancies, provided that the automatic sprinkler is not otherwise required throughout the building by any other provision or Section of the unamended building code.
2. At the top of rubbish and linen chutes and in their terminal rooms. Chutes extending through three or more floors shall have additional sprinkler heads installed within such chutes at alternate floors. Sprinkler heads shall be accessible for servicing.
3. In rooms where nitrate film is stored or handled. See also Section 306.
4. In protected combustible fiber storage vaults.
5. In any building that has a change in occupancy as defined in the building code.
6. In the attic space of single family residences as deemed necessary by the Fire Marshal.

Exceptions: the following accessory structures shall be exempt from fire sprinkler requirements:

1. Gazebos and ramadas for residential and public use.

2. Independent rest room buildings that are associated with golf courses, parks and similar uses.
3. Guardhouses for residential and commercial developments.
4. Detached non-combustible carports for residential and commercial developments with covered parking less than 15,000 square feet (1,394 m).
5. Barns and agricultural buildings for private, residential, non-commercial use, not exceeding 1,500 square feet (139.35 m) with no habitable areas.
6. Detached storage sheds for private, residential, non-commercial use, not exceeding 1,500 square feet (139.35 m).
7. Open shade horse stalls of non-combustible construction for private, residential, non-commercial use, not exceeding 5,000 square feet (464.52 m) and no storage of combustible products, vehicles or agricultural equipment.
8. Detached one story accessory building used as tool and storage shed of non-hazardous materials, and not exceeding 200 square feet (11.15 m).
9. Special use non-combustible structures as approved by the Fire Marshal

Section 903.2.1 Group A. An automatic sprinkler system shall be installed throughout all Group A occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.2.2 Group E. An automatic sprinkler system shall be installed throughout all Group E occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.2.3 Group F. An automatic sprinkler system shall be installed throughout all Group F occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.2.4 Group H. An automatic sprinkler system shall be installed throughout all Group H occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.2.5 Group I. An automatic sprinkler system shall be installed throughout all Group I occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

> **Exception**: in jails, prisons and reformatories, the piping system may be dry, provided a manually operated valve is installed at a continuously monitored location. Opening of the valve will cause the piping system to be charged. Sprinkler heads in such systems shall be equipped with fusible elements or the system shall be designed as required for deluge systems in the building code.

Section 903.2.6 Group M. An automatic sprinkler system shall be installed throughout all Group M occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.2.7 Group R. An automatic sprinkler system shall be installed throughout all Group R occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.2.8 Group S. An automatic sprinkler system shall be installed throughout all Group S occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.2.8.1 Repair Garages. An automatic sprinkler system shall be installed throughout all repair garages in accordance with NFPA 13 installation of sprinkler systems and Fire Department interpretation and applications manual.

Section 903.2.9 Group S-2 Occupancies. An automatic sprinkler system shall be installed throughout all Group S-2 occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.2.9.1 Commercial Parking Garages. An automatic sprinkler system shall be installed throughout all commercial parking garages in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.2.10 all Group R-3 and U Occupancies. An automatic sprinkler system shall be installed throughout all new Group R-3 and U occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.2.14 Group B Occupancies. An automatic sprinkler system shall be installed throughout all Group B occupancies in accordance with NFPA 13 installation of sprinkler systems and Fire Marshal interpretations.

Section 903.3 Installation Requirements. Automatic sprinkler systems shall be designed and installed in accordance with NFPA 13, 13-R, 13-D 13 installation of sprinkler systems as modified by Fire Marshal interpretations.

Section 903.3.6 Hose Threads. Fire hose threads used in connection with automatic sprinkler system shall be national standard threads.

Section 903.3.7 Fire Department Connections. Fire Department connections shall be located within four (4) feet (1219.2 mm) to eight (8) feet (2438.4 mm) of the curb line of an access road or public street, or as otherwise specified, or as approved by the Fire Marshal. The Fire Department connection line shall be a wet line with a check valve at the hose connection above grade. The access to the Fire Department connection shall be at curb grade.

Section 903.3.7.1 Wall Mounted. Systems may have wall mounted Fire Department connection only on light and ordinary Hazard Group 1 Systems.

When there are no structural openings or combustible overhangs within 15 feet (4572 mm) horizontally or vertically from inlet connection.

Section 903.3.7.2 Additions, Alterations and Repairs. When permits are approved for structural additions, alterations or repairs which are covered by a single building permit or by multiple building permits issued within a twenty-four (24) month period, which permits will permit construction which affects or expands an existing structure by fifty percent (50%) of the square footage of an existing building or structure before the issuance of such permit or permits, such building or structure shall be altered to conform to the requirements for fire sprinklers for new buildings or structures. For purposes of this Section, the term "square footage" means livable space plus garages and mechanical rooms, but does not include enclosed patios.

Section 903.3.7.3 Partial Systems Prohibited. In all new additions to existing non-sprinklered buildings and structures, an automatic sprinkler system shall be installed in accordance with this Section. There shall be no partially sprinklered compartments. Sprinklered and unsprinklered areas of a structure shall be separated in accordance with all applicable codes and standards.

Section 903.3.7.4 Sprinklers. Systems supplied by domestic water shall use quick response residential sprinkler heads with small orifices for low water discharge throughout all occupied areas in accordance with UL listing and written Fire Marshal interpretations.

Section 903.4.2 Alarms. Approved audible devices shall be connected to every automatic sprinkler system. Such sprinkler water-flow alarm device shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. An interior alarm to alert the occupants shall be provided in the interior of the building in a normally occupied location. Where a fire alarm system is installed, activation of the automatic sprinkler system shall actuate the building fire alarm system.

L. Section 905, *subsections 905.2, 905.3.4, 905.3.4.2* are amended and *subsection 905.3.1.1* is added to read:

Section 905.2 Installation Standards. Standpipe systems shall be installed in accordance with this Section as modified by the Fire Marshal interpretations.

Section 905.3.1.1 Building Area. In commercial buildings exceeding 10,000 square feet (929 square meters) in area per story, Class I automatic wet standpipes shall be provided and where any portion of the building's interior area is more than 200 feet (60.96 m) of travel, vertically and horizontally, from the nearest point of Fire Department vehicle access.

Exceptions:

1. Single story structures are not required to have hose connections, except in those interior portions of the building that exceed 200 feet (60.96 m) of travel from an emergency access road.
2. Required wet standpipes may be an integral part of an approved sprinkler system and may be connected to the sprinkler systems horizontal cross-mains. Calculations for required hose demand shall be submitted with sprinkler plans.
3. Unless required by Fire Marshal interpretations**,** hose connections are not required in Group R-3 occupancies.

Section 905.3.4 Stages. Stages greater than 1,000 square feet (93 square meters) shall be equipped with a Class I wet standpipe system with 2.5 inch (64 mm) hose connections on each side of the stage supplied from the automatic fire sprinkler system and shall have a flow rate of not less than the required for Class I standpipes.

Section 905.3.4.1 Hose and Cabinets. The hose and hose cabinets are deleted in their entirety.

M. Section 907, *subsections 907.2, 907.7* are amended and *subsections 907.3.1.9, 907.3.1.9.1, 907.3.1.10* and *907.3.1.11* are added to read:

Section 907.2 Where Required, New Buildings and Structures. An approved manual, automatic, or manual and automatic fire alarm system shall be provided in new buildings and structures in accordance with sections 907.2.1 through 907.2.23 and Fire Marshal interpretations. Where automatic sprinkler protection is installed in accordance with Section 903.3.1.1 or 903.3.1.1 and Fire Marshal interpretations and connected to the building fire alarm system, automatic heat detection required by this Section shall not be required.

An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combination of devices, appliances and equipment shall comply with Section 907.1.2. The automatic fire detectors shall be smoke detectors, except that an approved alternative type of detector shall be installed in spaces such as boiler rooms where, during normal operation, products of combustion are present in sufficient quantity to actuate a smoke detector.

Section 907.3.1.9 Owner Landlord and Occupant Responsibilities. Devices provided and maintained. In a dwelling unit occupied under the terms of a rental agreement and under a month-to-month tenancy:

1. At the time of each occupancy, the landlord shall provide smoke detection devices in working condition and, after written notification by the tenant, shall be responsible for replacement; and
2. The tenant shall keep the devices in working condition by keeping charged batteries in battery-operated devices, by testing the devices periodically, and by refraining from permanently disabling the devices.

Section 907.3.1.9.1 Written Notification. If a landlord or owner did not know and had not been notified in writing of the need to repair or replace a smoke detection device, the landlord's or owners failure to repair or replace the device may not be considered as evidence of negligence in a subsequent civil action arising from death, property loss, or personal injury.

Section 907.3.1.10 Definitions. In this Section, 'dwelling unit', 'landlord', 'rental agreement' and 'tenant' have the meanings given in Arizona Revised Statutes.

Section 907.3.1.11 Records and Maintenance. The landlord or owner of any rental property shall inspect all smoke detection devices as required under NFPA 72 annually and a record of all inspections and maintenance activities shall be kept by the landlord or owner and available for inspection upon request by the Fire Marshal

Section 907.7 Activation. Where an alarm notification system is required by another Section of this Code, it shall be activated by:

1. Required automatic fire alarm system.
2. Sprinkler water-flow devices
   A. Multi-level structures. All multi-level structures are required to have a flow switch and tampered control valve per floor.
   Exception: Group R-1 and R-2, occupancies with a domestic water supply serving 6 units or less and Group R-3. See Fire Department interpretation and applications manual.
3. Required manual fire alarm boxes.

N. <u>Section 2201, *subsection 2201.4* is amended and *subsection 2201.7* is added to read:</u>

Section 2201.4 Indoor Service Stations. Motor vehicle fuel-dispensing stations located inside buildings is prohibited within the entire Town.

Section 2201.7 Fire Protection. Fire sprinkler protection shall be designed in accordance with the building code as required for ordinary hazard Group 2.

O. Section 2204, *subsection 2204.3.1* is amended to read:

Section 2204.3.1 General, Unattended Self-Serve Stations. Unattended self-serve stations are prohibited within the entire Town.
Exception: unattended dispensing of motor vehicle fuel may be allowed by special permit by the Fire Marshal for private commercial use only. Written request and documentation shall be submitted showing compliance with 2204.3 and all other applicable codes and ordinances.

P. Section 2206, *subsections 2206.2.2* and *2206.2.3* are amended to read:

Section 2206.2.2 Above ground Tanks Located Inside Buildings. Above ground tanks for the storage of Class I, II, or IIIA liquid fuels are prohibited within the entire Town.

Section 2206.2.3 Above Ground Tanks Located Outside Buildings. Above ground tanks for the storage of Class I, II, or IIIA liquid fuels outside of buildings is prohibited within the entire Town.
Exception: Installations of 2,000 gallons (7,570.8 l) or less aggregate quantity may be approved by special permit by the Fire Marshal.

Q. Section 2403, *subsection 2403.8.2 exceptions* is amended to read:

Exceptions:

2. Membrane structures, tents or canopies need not be separated from buildings provided throughout with an automatic sprinkler system when all of the following conditions are met:
   - 2.1 The aggregate floor area of the membrane structure, tent or canopy shall not exceed 10,000 square feet (929 square meters).
   - 2.2 The aggregate floor area of the building and membrane structure, tent or canopy shall not exceed the allowable floor area including increases as indicated in the *International Building Code*.
   - 2.3 Required means of egress provisions are provided for both the building and the membrane structure, tent or canopy, including travel distance.
   - 2.4 Fire apparatus roads are provided in accordance with Section 503.

R. Section 3301, *subsection 3301.2.3* is amended to read:

Section 3301.2.3 Permit Restrictions. The storage of explosives and blasting agents is prohibited within the entire town, except for temporary storage for use in connection with approved blasting operations. However, this prohibition shall not apply to wholesale and retail stocks for small arms ammunition, explosive bolts,

explosive rivets or cartridges for explosive-actuated power tools in quantities involving less than 500 pounds (226.8 kg) of explosive materials.

S. Section 3308, *subsections 3308.1.1* and *3308.6.1* is added to read:

Section 3308.1.1 Fireworks Display. Firework displays are allowed only on special use permit properties and only with approved Town Special Event Permits.

Section 3308.6.1 maximum size of mortars. The maximum diameter of the mortar for an approved firework display is six (6) inches.

T. Section 3404, *subsection 3404.2.9.5.1.1* and *3404.2.13.1.4* are amended to read:

Section 3404.2.9.5.1.1 Locations Where Above Ground Tanks are Prohibited. Storage of Class I and II liquids in above ground tanks outside of buildings is prohibited within the entire Town.
Exception: installations of 2,000 gallons (7,570.8 l) or less aggregate quantity may be approved by special permit by the Fire Marshal.

Section 3404.2.13.1.4 Tanks Abandoned in Place. The abandonment of tanks in place shall be prohibited within the entire Town.

U. Section 3406, *subsection 3406.2.5.2* is amended to read:

Section 3406.2.5.2 Tanks for Gravity Discharge. Tanks with a connection in the bottom of the end for gravity dispensing of flammable or combustible liquids shall not be permitted within the entire Town.

V. Section 3801, *subsection 3801.2 exception* is added to read:

Section 3801.2 Exceptions: A permit is not required to install or maintain portable containers of less than 10 gallons (37.9 l) aggregate water capacity. Distributors shall not fill any LP-gas containing for which a permit is required unless a permit for installation has been issued for that location by the Fire Marshal.

W. Section 3804, *table 3804.3, footnote e-5* is added to read:

Table 3804.3, footnote E-5.

E-5 a container less than 125 gallons (43.2 l) may be located next to a block fence when the tank is not within 5 feet (1524 mm) of a structure on an adjoining property.

X. *Appendix H control and suppression of hazardous fire areas* is added to read:
Y.

Control and suppression of hazardous fire areas

Section H101

General

H101.1 Scope. The unrestricted use of grass-, grain-, brush- or forest-covered land and drainage easements throughout the Town in hazardous fire areas is a potential menace to life and property from fire and resulting erosion. Safeguards to prevent the occurrence of fire and provide adequate fire-protection facilities to control the spread of fire which might be caused by recreational, residential, commercial, industrial or other activities conducted in hazardous fire areas shall be in accordance with Appendix H.

Section H102

Definitions

H102.1 Definitions. For the purpose of Appendix H, certain terms are defined as follows:

"Tracer" is any bullet or projectile incorporating a feature that marks or traces the flight of said bullet or projectile by flame, smoke or other means which resulting fire or heat.

"Tracer charge" is any bullet or projectile incorporating a feature designed to create a visible or audible effect by means which results in fire or heat and shall include any incendiary bullets or projectiles.

Section H103

Permits

H103.1 Permits. The Fire Marshal is authorized to stipulate conditions for permits. Permits shall not be issued when public safety would be at risk, as determined by the Fire Marshal.

Section H104

Restricted entry

H104.1 Restricted Entry. The Fire Marshal shall determine and publicly announce when hazardous fire areas shall be closed to entry and when such areas shall again be opened to entry. Entry on and occupation of hazardous fire areas, except public roadways, inhabited areas or established trails which have not been closed during such time when the hazardous fire is closed to entry, is prohibited.
Exception:

1. Residents and owners of private property within hazardous fire areas and their invitees and guests going to or being upon their land.
2. Entry, in the course of duty, by peace or police officers, and other duly authorized public officers and members of a Fire Department.

Section H105

Trespassing on posted property

H105.1 General. When the Fire Marshal determines that a specific area within a hazardous fire area presents an exceptional and continuing fire danger because of the density of natural growth, difficulty of terrain, proximity to structures or accessibility to public, such areas shall be closed until changed conditions warrant termination of closure. Such areas shall be posted as hereafter provided.

H105.2 Signs. Approved signs prohibiting entry by unauthorized persons and referring to Appendix H shall be placed on every closed road.

H105.3 Trespassing. Entering and remaining within areas closed and posted is prohibited.
Exception: Owners and occupiers of private or public property within closed and posted areas, their guests or invitees, local state and federal public officers and their authorized agents acting in the course of duty.

Section H106

Smoking

H106.1 General. Lighting, igniting or otherwise setting fire to or smoking tobacco, cigarettes, pipes or cigars in hazardous fire areas is prohibited.

Exception: Places of habitation or within the boundaries of established smoking areas as designated by the Fire Marshal.

Section H107

Spark arresters

H107.1 Spark Arresters. Chimneys used in conjunction with fireplaces, barbecues, incinerators or heating appliances in which solid or liquid fuel is used, upon buildings, structures or premises located within 200 feet (60,960 mm) of hazardous fire areas, shall be provided with a spark arrester constructed with heavy wire mesh or other noncombustible material with openings not to exceed ½ inch (12.7 mm).

Section H108

Tracer bullet, tracer charges, rockets and model aircraft

H108.1 General. Tracer bullets and tracer charges shall not be possessed, fired or caused to be fired into or across hazardous fire areas.

Rockets, model planes, gliders and balloons powered with an engine, propellant or other feature liable to start or cause fire shall not be fired or projected into or across hazardous fire areas.

Section H109

Explosives and blasting

H109.1 Explosives and Blasting. Explosives shall not be possessed, kept, stored, sold, offered for sale, given away, used, discharged, transported or disposed of within hazardous fire areas except by permit from the Chief.

Section H110

Fireworks

H110.1 Fireworks. Fireworks shall not be used or possessed in hazardous fire areas. The Fire Marshal and any Police Officer are authorized to seize, take, remove or cause to be removed fireworks in violation of Section H110.

Section H111

Apiaries

H111.1 Apiaries. Lighted and smoldering material shall not be used in connection with smoking bees in or upon hazardous fire areas except by permit from the Fire Marshal.

Section H112

Open-flame devices

H112.1 Open-flame Devices. Welding torches, tar pots, decorative torches and other devices, machines or processes liable to start or cause fire shall not be operated or used in or upon hazardous fire areas, except by permit from the Fire Marshal.
Exception: Use within habited premises or designated campsites that are a minimum of 30 feet (9144 mm) from grass-, grain-, brush-, or forest-covered areas.

Flame-employed devices, such as lanterns or kerosene road flares, shall not be operated or used as a signal or marker in or upon hazardous fire areas.
Exception: The proper use of fuses at the scene of emergencies or as required by standard operating guidelines.

Section H113

Outdoor fires

H113.1 Outdoors Fires. Outdoor fires shall not be built, ignited or maintained in or upon hazardous fire areas, except by permit from the Fire Marshal.

Exception: Outdoors fires within habited premises or designated campsites where such fires are built in a permanent barbecue, portable barbecue, outdoor fireplace, incinerator or grill and are a minimum of 30 feet (9144 mm) for grass-, grain-, brush-, or forest-covered areas.

Permits shall incorporate such terms and conditions that will reasonable safeguard public safety and property. Outdoor fires shall not be built, ignited or maintained in or upon hazardous fire areas under the following conditions:

1. When high winds are blowing
2. When a person age 17 or over is not present at all times to watch and tend fire, or
3. When public announcement is made that open burning is prohibited.

Permanent barbecue, portable barbecues, outdoor fireplaces or grills shall not be used for the disposal of rubbish, trash or combustible waste material.

Section 114

Incinerators and fireplaces

Section 114.1 Incinerators and Fireplaces. Incinerators, outdoor fireplaces, permanent barbecues and grills shall not be built, installed or maintained in hazardous fire areas without prior approval of the Fire Marshal.

Incinerators, outdoor fireplaces, permanent barbecues and grills shall be maintained in good repair and in safe condition at all times. Openings in such appliances shall be provided with an approved spark arrestor, screen or door.
Exception: When approved, unprotected openings in barbecues and grills necessary for proper functioning.

Section 115

Clearance of brush or vegetation growth from structures

Section 115.1 Clearance of Brush or Vegetation Growth From Structures. Persons owning, leasing, controlling, operating or maintaining buildings or structures in, upon or adjoining hazardous fire areas, and person owning, leasing or controlling land adjacent to buildings or structures, shall, at all times:

1. Maintaining and effective firebreak by removing and clearing away flammable vegetation and combustible growth from areas with 30 feet (9,144 mm) of such buildings or structures;
   Exception: Single specimens of trees, ornamental shrubbery or similar plants used as ground covers, provided that they do not form a means of rapidly transmitting fire from the native growth to any structure.
2. Drainage easements must be kept clear of any dead brush, and trees trimmed to a height of at least 5 feet.
3. Maintain addition fire protection or firebreak by removing brush, flammable vegetation and combustible growth located from 30 feet to 100 feet (9,144 mm to 30,480 mm) from such buildings or structures, when required by the Fire Marshal because of extra-hazardous conditions causing a firebreak of only 30 feet (9,144 mm) to be insufficient to provide reasonable fire safety;
   Exception: Grass and other vegetation located more than 30 feet (9,144 mm) from buildings or structures and less than 18 inches (457 mm) in height above the ground need not be removed where necessary to stabilized the soil and prevent erosion.
4. Remove portions of trees which extend within 10 feet (3,048 mm) for the outlet of a chimney;
5. Maintain trees adjacent to or overhanging a building free of deadwood; and
6. Maintain the roof of a structure free of leaves, needles or other dead vegetative growth.

Section 115.2 corrective actions. The Fire Marshal shall give notice to the owner of the property upon which conditions regulated by Section 115.1 to correct such conditions. If the owner fails to correct conditions, such condition shall be declared a public nuisance and action taken pursuant to Section 8-5.

Section H116

Clearance of brush or vegetation growth from roadways

Section H116.1 Clearance of Brush or Vegetation. The Fire Marshal is authorized to cause areas within 10 feet (3,0498 mm) on each side of portions of highways and private streets which are improved, designed or ordinarily used for vehicular traffic to be cleared of flammable vegetation and other combustible growth. The Fire Marshal is authorized to enter upon private property to do so.
Exception: Single specimens of trees, ornamental shrubbery or cultivated ground such as green grass, ivy, succulents or similar plants used as ground cover, provided that they do not form a means of readily transmitting fire.

Section H117

Unusual circumstances

Section H117.1 Unusual Circumstances. If the Fire Marshal determines that difficult terrain, danger of erosion or other unusual circumstances make strict compliance with the clearance of vegetation provisions of Sections 115, 116 or 117 of Appendix H undesirable or impractical, enforcement thereof may be suspended and reasonable alternative measures shall be provided.

Section H118

Dumping

Section H118.1 Dumping. Garbage, cans, bottles, papers, ashes, refuse, trash, or rubbish or combustible waste material shall not be placed, deposited or dumped in or upon hazardous fire areas or in, upon, along trails, roadways or highways in hazardous fire areas.
Exception: Approved public and private dumping areas.

Section H119

Disposal of ashes

Section H119.1 Disposal of Ashes. Ashes and coals shall not be placed, deposited or dumped in or upon hazardous fire areas.
Exceptions:

1. In the hearth of an established fire pit, camp stove or fireplace
2. In a noncombustible container with a tight fitting lid, which is kept or maintained in a safe location not less than 10 feet (3,048 mm) from combustible vegetation or structures.

3. Where such ashes or coals are buried and covered with 1 foot (304.8 mm) of mineral earth not less than 25 feet (7,620 mm) from combustible vegetation or structures."

Section H120

Use of fire roads and firebreaks

Section H120.1 Use of Fire Roads and Firebreaks. Motorcycles, motor scooters and motor vehicles shall not be driven or parked upon, and trespassing is prohibited upon, fire roads or firebreaks beyond the point where travel is resisted by a cable, gate or sign, without the permission of the property owners. Vehicles shall not be parked in a manner that obstructs the entrance to a fire road or firebreak.
Exception: Public officers acting within their scope of duty.

Radio and television aerials, guy wires thereto, and other obstructions shall not be installed or maintained on fire roads or firebreaks unless located 16 feet (5,877 mm) or more above such fire road or firebreak.

Section H121

Use of motorcycles, motor scooters and motor vehicles

Section H121.1 Use of Motorcycles, Motor Scooters and Motor Vehicles. Motorcycle, motor scooters and motor vehicles shall not be operated within hazardous fire areas, without a permit from the Fire Marshal, except upon clearly established public or private roads. Permission from the property owner shall be presented when requesting a permit.
Exception: Public officers acting within their scope of duty.

Section H122

Tampering with Fire Department locks, barricades and signs

Section H122.1 Tampering with Fire Marshal Locks, Barricades and Signs. Locks, barricades, seals, cables, signs and markers installed within hazardous fire areas, by or under the control of the Fire Marshal, shall not be tampered with, mutilated, destroyed or removed.

Gates, doors, barriers and locks installed by or under the control of the Fire Marshal shall not be unlocked.

Section H123

Liability for Damage

Section H123.1 Liability for Damage. The expenses of fighting fires, which result from a violation of Appendix H, shall be a charge against the person whose violation of Appendix H caused the fire. Damages caused by such fires shall constitute a debt of such person and are collectable by the Fire Marshal in the same manner as in the case of an obligation under a contract, expressed or implied.

Division 2: new construction design criteria in fully sprinklered developments

Section 13-2-6 Hydrant spacing

A. Commercial and Multifamily (R-1 and R-2) development hydrant spacing will be a maximum of 700 feet (213,360 mm) on center.

B. Non-Hillside. One and two family dwellings (R-3) development hydrant spacing will be a maximum of 1,200 feet (365,760 mm) on center.

Article 13-3 FIREWORKS [626 679]

13-3-8 Purpose
13-3-9 Definitions
13-3-10 Fireworks Prohibited; exceptions
13-3-11 Sale of Fireworks
13-3-12 Posting of signs by persons engaged in the sale of fireworks; civil penalty
13-3-13 Authority to enforce violations of this article; means of enforcement
13-3-14 Liability for emergency responses related to use of fireworks; definitions

Section 13-3-1 Purpose [679]

The Town Council hereby recognizes that the desert environment of Arizona has unique fire risks and adopts this article law to enhance the public safety and welfare of its citizens and the community by regulating the use and sale of fireworks within the Town.

Section 13-3-2 Definitions [679]

A. The following words, terms and phrases, when used in this article, have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

1. *Display fireworks* means those fireworks defined by Arizona Revised Statutes Section 36-1601.

2. *Fireworks* means display fireworks, consumer fireworks and permissible consumer fireworks as defined by Arizona Revised Statute Section 36-1601.

3. *Novelty items* means federally deregulated novelty items that are known as snappers, snap caps, party poppers, glow worms, snakes, toy smoke devices and sparklers as defined in Arizona Revised Statute 36-1601.

4. *Permissible consumer fireworks* has the same meaning as Arizona Revised Statutes Section 36-1601.

5. *Supervised show* means a monitored performance of display fireworks open to the public authorized by permit by the Town Fire Marshal or designee.

Sec 13-3-3 Fireworks prohibited; exceptions [679]

A. The use of fireworks including permissible consumer fireworks within the Town is prohibited except for the limited use of permissible consumer fireworks during the time frame of June 24th through July 6th and December 24th through January 3rd.

B. The use of permissible consumer fireworks within the Town is prohibited on all publicly owned property which includes, but is not limited to, Town buildings, Town parking lots, public schools and Town streets, unless there is a supervised show of fireworks authorized by permit issued by the Fire Marshal or designee.

C. The use of permissible consumer fireworks within the Town is prohibited within 500 yards of the Mummy Mountain Preserve.

Section 13-3-4 Sale of Fireworks [679]

A. No person shall sell or permit or authorize the sale of permissible consumer fireworks to a person who is under eighteen years of age.

B. No person shall sell or permit or authorize the sale of permissible consumer fireworks in conflict with state law.

C. No person shall sell, resell or manufacture consumer or display fireworks unless authorized by state law or town permit, or otherwise authorized by this article.

D. No person shall sell permissible consumer fireworks to the public except from May 20th through July 6th and December 10th through January 3rd.

E. Violations of this section shall be punishable as provided in Section 1-9-3 of the Town Code.

Section 13-3-5 Posting of signs by persons engaged in the sale of fireworks; civil penalty [679]

A. Prior to the sale of permissible consumer fireworks, every person engaged in such sales shall prominently display signs indicating the following:

   1. The use of all fireworks including permissible consumer fireworks (as defined under state law) within the Town of Paradise Valley is prohibited except on

private property with the consent of the owner from June 24th through July 6th and December 24th through January 3rd.

2. Consumer fireworks authorized for sale under state law may not be sold to or used by persons under the age of 18.

3. Persons using permissible consumer fireworks are liable for any emergency response costs related to the use of fireworks.

B. Signs required under this section shall be placed in each area where fireworks are displayed for sale.

C. The Fire Marshal or designee shall develop regulations concerning the size and color of the required signs and develop a model sign. The required sign regulations and model sign shall be posted on the Town's website and filed with the Town Clerk's office.

D. Failure to comply with subsections A or B above is a civil offense punishable by a minimum fine of two hundred fifty dollars ($250.00). A second or subsequent violation of subsections A or B is a civil offense punishable by a minimum fine or five hundred dollars ($500.00). A third or subsequent violation of subsections A or B within two years are class one misdemeanors.

Section 13-3-6 Authority to enforce violations of this article; means of enforcement

A. The Fire Marshal or designee, a Paradise Valley police officer or the Town Attorney may issue civil complaints to enforce violations of this article designated as civil offenses.

B. Any person authorized pursuant to this section to issue a civil complaint may also issue a notice of violation specifying actions to be taken and the time in which they are to be taken to avoid issuance of a civil or criminal complaint.

C. A Paradise Valley police officer or the Town Attorney may issue criminal complaints to enforce this article.

Section 13-3-7 Liability for emergency responses related to use of fireworks; definitions

A. A person who uses, discharges or ignites permissible consumer fireworks, prohibited novelty items, or anything that is designed or intended to rise into the air and explode or to detonate in the air or to fly above the ground, is liable for the

expenses of any emergency response that is required by such use, discharge or ignition. The fact that a person is convicted or found responsible for a violation(s) of this article is prima facie evidence of liability under this section.

B. The expenses of an emergency response are a charge against the person, parent or legal guardian if a minor, liable for those expenses pursuant to subpart a of this section. The charge constitutes a debt of that person and may be collected proportionately by the public agencies, for-profit entities or not-for-profit entities that incurred the expenses. The liability imposed under this section is in addition to and not in limitation of any other liability that may be imposed. The emergency response charges shall not include charges assessed by an ambulance service that is regulated pursuant to Title 36, Chapter 21.1, Article 2.

C. For the purposes of this section:

1. *Expenses of an emergency response* means reasonable costs directly incurred by public agencies, for-profit entities or not-for-profit entities that make an appropriate emergency response to an incident.

2. *Reasonable costs* includes the costs of providing police, fire fighting, rescue and emergency medical services at the scene of an incident and the salaries of the persons who respond to the incident.

Article 13-4 LICENSED FIRE SERVICE PROVIDER PREVENTION AND CONTROL [635]

13-4-1	Definitions
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13-4-29	Insurance and Liability
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13-4-31	Severability

Section 13-4-1. Definitions

In this Article the following words shall have the following meanings:

(1) "License" means a license issued under the terms of this Article to a provider of fire control and prevention services, including a license as a Default Provider.

(2) "Licensee" means a person or entity to whom a License is issued under this Article.

(3) "Applicant" means an applicant for a License under this Article.

(4) "Default Provider" and "Default Provider Licensee" means the Town of Paradise Valley Fire Services Department.

(5) "Town Contract Administrator" means the person designated by the Town to supervise the administration of the provisions of this Article and of Licenses granted under this Article.

(6) "Town" means the Town of Paradise Valley, acting through the Town Council or other authorized official.

Section 13-4-2. Alternatives [650 701]

(1) The Town Council has elected to require property owners within the Town to provide for fire prevention and control by contracting for such service with a private or public provider licensed by the Town pursuant to this Article.

(2) Pursuant to the foregoing subsection, on or before February 15, 2013, all owners of real property within the Town limits shall obtain fire prevention and control service in accordance with the requirements of this Article from a provider licensed by the Town pursuant to this Article, provided that the Town has licensed a Default Provider under this Article 13-4. Property owners who do not obtain such services from another licensed provider shall be liable to the Default Provider licensed by the Town according to the terms and conditions of this Article and the Default Provider's License and shall also be deemed to be in violation of the requirement to have obtained, through contract or other means, fire prevention and control services from a provider licensed by the Town.

Section 13-4-3. License Required

(1) Any provider of fire prevention and control services to property owners in satisfaction of the obligations of property owners under Section 13-4-2(2) must be licensed pursuant to this Article.

(2) A Licensee shall also provide first responder emergency medical service to its subscribers or other property owners to whom it is obligated to provide fire protection service. Such services shall include those medical services that can be provided by fire personnel first responding to the fire or emergency scene call.

Section 13-4-4. Obligations Of The Default Provider And Of Property Owners To The Default Provider

(1) A Licensee who applies for and is granted a License as the Default Provider shall have the additional rights and obligations as provided in this Section and in the License, and the property owners shall have the rights and obligations with respect to the Default Provider as provided in this Section.

(2) All Licensees other than the Default Provider shall notify the Default Provider of all property owners who have obtained fire protection and emergency medical services from the Licensee within 10 days of the date the Licensee agrees to provide such services. The Licensee shall be obligated to provide services to such property owners until 30 days after the Licensee has given notice to the Default Provider that the property owner will no longer be provided such service by the Licensee.

(3) All property owners who do not contract directly with another Licensee for fire protection and emergency medical service and maintain such service must subscribe for such service from the Default Provider under the terms in the Default Provider's License.

(4) All Property Owners who are not being provided such service by another Licensee and who are not currently identified by another Licensee pursuant to subsection (2) above, as having such service from another Licensee shall be provided such service by the Default Provider, whether or not the property owner has voluntarily subscribed for such services from the Default Provider or is in default for payment for service.

(5) Property owners who are required to subscribe but who have not subscribed or who have previously subscribed but are more than 30 days delinquent in paying for such service from the Default Provider shall be liable to the Default Provider for the following, for which an action may be brought in a court on competent jurisdiction:

(a) The fees, payable annually, or at such intervals as shall be proscribed by the Town, in advance, for fire protection service which the Default Provider is permitted to charge to property owners of the same class under the terms of the Default Provider's License for the times when the Default Provider is required to provide service to the property owner under subsection (3) above; and

(b) The amount of the actual cost (including a reasonable profit) to the Default Provider of providing any service actually furnished; and

(c) All costs and expenses of litigation, including attorneys' fees, incurred by the Default Provider in any action against the property owner to recover payment of the obligations stated in this Article;

Section 13-4-5. Police Powers

Nothing in this Article or in any agreement awarding a License shall be construed as an abrogation by the Town of any of its lawful police powers.

Section 13-4-6. The License Area

The area that shall be served under the License shall be the entire area within the corporate limits of the Town of Paradise Valley. The Town may grant a License for the entire Town only and not for a portion or portions of the Town.

Section 13-4-7. Grant of License

(1) Grant. If the Town grants or renews a License, the License shall create both a right and an obligation to provide the services of fire prevention and control and first responder emergency medical services to those property owners contracting with the Licensee or, in the case of the Default Provider, to all property owners in the Town who have not provided evidence according to Section 13-4-4(3) that they have obtained and are maintaining such service from another Licensee. Any License granted under the terms of this Article shall be consistent with federal and state law. If there is a conflict between the terms of the License or the terms of this Article and federal law or state statute, federal law and state statute shall control.

Any License granted is subject to the general provisions of this Article in effect at the time the License is granted. If there is a conflict between the terms of the License and other codes and ordinances of the Town, the License shall control, except that the License may not waive the requirements of the other codes and ordinances of the Town regarding permits, fees to be paid, or manner of operation.

(2) Establishment of License Requirements. The Town may establish appropriate requirements for New Licenses or Renewal Licenses and may modify such requirements from time to time to reflect changing conditions or technology.

(3) Duration. The term of any License and all rights, privileges, obligations, and restrictions pertaining thereto may be from one to five years and shall be as established in the License, unless terminated sooner according to the terms of this Article or of the License.

(4) License Non-Exclusive. Any License granted other than a license as a Default Provider shall be non-exclusive. The Town reserves the right to grant, at any time, such additional Licenses as it deems best, provided however, that such additional grants shall not operate to materially modify, revoke, or terminate any exclusive rights previously granted to a Default Licensee.

(5) License Applications. Applicants for a License shall submit to the Town written applications using the standardized format provided by the Town and including the application fees herein provided.

(6) Grant Procedure.

(a) All applications for a new or Renewal License when filed shall be available for public inspection. In not less than 30 days but not more than 90 days after the application is completed, a public hearing shall be held on the application. A decision shall be made by the Town not later than 45 days after public hearings based upon an evaluation of the application, the hearing, and other information that the Town may deem relevant. The Town may grant one or more Licenses, or may decline to grant any License;

(b) All applications for a renewal License, other than an application for renewal of a Default Provider License, submitted by a Licensee shall be available for public inspection. Applications shall be granted or denied based on:

(1) the Licensee is in substantial compliance with the material terms of the existing License and with applicable law; and

(2) the quality of the Licensee's service, response to subscriber complaints, and billing practices; and

(3) the Licensee's financial, legal, administrative and technical ability to provide the services, facilities, and equipment as set forth in the proposal; and

(4) the Licensee's prospect of reasonably meeting the future community needs and interests, taking into account the cost of meeting such needs and interests.

(c) Applications for renewal of a License as Default Provider shall be granted or denied in the sole discretion of the Town Council based upon which of the qualified competing applications is most advantageous to the Town and its residents. The Default Provider Licensee shall have no right to renewal of its License upon expiration or termination.

Section 13-4-8. Contents of Application for New License, Renewal License, or Default Provider License

Applications for a new License, a renewal License, or a Default Provider License shall include such information as may be requested by the Town Manager, including:

(1) The identity of the applicant. This must include the name and address of the applicant, the nature of the business entity or public body, and evidence that the applicant is in good legal standing, where relevant.

(2) Evidence that the applicant has the financial, legal, administrative and technical ability to provide the services, facilities, and equipment necessary to meet the requirements and to perform the services required under this Article and under the License. At a minimum, the applicant must meet the following criteria:

(a) The applicant must have at least two years' experience as a provider of fire department services. As used herein, fire department services shall include tactical fire suppression, prevention, and additional support to such services;

(b) The applicant must have currently, or have maintained for at least two years in the past, a secondary 9-1-1 system answering point including all hardware and computer software necessary for the reception of 9-1-1 calls;

(c) The applicant must maintain a computer aided dispatch system capable of establishing a geographic information system based files for the Town of Paradise Valley;

(d) The applicant must have practical experience in the suppression of wildland fires according to the United States Forest Service and must have currently and continue to maintain an in-house training program providing for the certification of assigned personnel to a minimum of specifications 130-190 of the United States Forest Service.

(3) A detailed License proposal stating how the applicant will comply with the requirements of this Article.

(4) A Licensee that elects to apply for a renewal process must do so at least six months before expiration of the existing License. Upon receipt of the renewal application, the Council shall publish notice of its receipt. The Council shall review and evaluate the future community needs and interests and Licensee's past performance. The review and evaluation process shall include opportunity for public comment. The process must be completed within 90 days of the receipt of Licensee's renewal application.

(5) After an opportunity for public comment, the Town Council shall act on the renewal application by Council Resolution.

Section 13-4-9. Transfers

(1) A License shall not be transferable or assignable except in connection with the transfer of substantially all the operating assets of the licensee used in providing services under the License. Such transfer shall not be made without the consent of the Town, which shall not be unreasonably withheld.

(2) The proposed assignee must show technical ability, financial capability, management experience, al qualifications, and general character qualifications as determined by the Town and must agree to comply with all provisions of the License. Town shall be deemed to have approved a proposed transfer or assignment if the Town does not notify Licensee within 120 days following receipt of written notice of the proposed transfer or assignment and all information requested by the Town that the transfer has been denied.

(3) The Licensee shall notify the Town before any change in, or transfer of, control of the Licensee. The word "control" means ownership of 50% or more of voting control of the licensee's governing body, if a private entity. Every change, transfer, or acquisition of control of the Licensee shall make the License subject to cancellation until the Town shall have consented thereto, which consent shall not be unreasonably withheld. To determine whether it shall consent to such change, transfer or acquisition of control, the Town may inquire into the qualifications of the prospective controlling party and the Licensee shall assist the Town in any such inquiry.

(4) The consent or approval of the Town Council to any transfer of a License shall not constitute a waiver or release of the rights of the Town in and to the streets, and any transfer shall by its terms, be expressly subordinate to the terms and conditions of a License.

(5) The Town may reserve the right of first refusal to purchase a Licensee's System so provided in the License.

(6) In no event shall a transfer of ownership or control be approved without the successor in interest becoming a signatory to the License agreement.

Section 13-4-10. Fees

(1) Application Fee

A non-refundable application fee of $3,500.00 from all applicants for a license, or $5,000.00 from an applicant for a Default Provider License.

(2) Transfer Fee

A non-refundable application fee of $1,500.00 shall be paid to cover the costs of transfer and/or re-issuance of Licenses issued pursuant to this Chapter.

(3) License Fee

For the purposes of providing revenue with which to defray the costs of administration and regulation arising out of the granting of licenses under this Article, each Licensee shall pay license fees in the amount of $5,000.00 per quarter, payable at the times set forth in Section 13-4-11.

Section 13-4-11. Schedule of Payments

Licensee shall pay the fees due to the Town for the preceding calendar quarter not later than August 1, November 1, February I, and May I. The Licensee must file with the Town not later than the date of each such payment a statement showing the Gross Revenue received by Licensee during the preceding quarter from services provided under the License.

Section 13-4-12. Auditing and Financial Records

(1) During the term of each License, the Town may, not more frequently than once each year, conduct an audit of the apparatus, equipment, books, records, and accounts of the Licensee. A principal responsibility of the auditors shall be to validate the financial viability of the Licensee. The audit may be conducted by an independent certified public accounting firm retained by the Town, and shall be conducted at the sole expense of the Town.

(2) Each Licensee must disclose to the auditor its books, accounts, and all other financial records reasonably necessary to conduct the audit. The Town acknowledges that the source data disclosed to the auditor are proprietary to the License.

Section 13-4-13. Rates

(1) All rates shall be approved by the Town and stated in the License.

(2) The Licensee shall not discriminate in the assessment, levy, charge, imposition or collection of rates on the basis of age, race, creed, color, religion, national origin, gender, marital status, or disability.

(3) The rates charged by the Licensee shall be directly related to the actual cost of providing fire protection services to owners of three categories of property:

(a) residential properties,

(b) vacant land, and

(c) all others (including but not limited to, commercial, country clubs, churches, schools, resorts and medical clinics).

No subscriber in any of the above-mentioned categories shall be charged rates which in the legislative judgment of the Town are not directly related to the actual cost of providing fire protection or which are different from the rates charged to other subscribers in the same category. The Town may from time to time with reasonable notice require the Licensee to explain or defend its rate structure, and may request changes in the rate structure.

Section 13-4-14. Local Business Office

A Licensee shall maintain and operate a business office for receiving inquiries regarding new service, paying bills and receiving complaints, within five miles of the Town's corporate limits.

Section 13-4-15. Response Time, Incident Response, and Manpower Response Requirements

All response times, incident responses and manpower responses shall be based on service levels similar to those provided by adjacent cities as set forth in their operational guidelines and procedures.

Section 13-4-16. Fire Apparatus Removal Criteria

(1) The primary service area shall be the geographical area within the corporate limits of the Town of Paradise Valley.

Section 13-4-17. Reports

(1) Each Licensee shall file the following yearly reports with the Town:

(a) Response Time Performance by Licensee for license area;

(b) Exception reports;

(c) Response out of primary service area. The report shall include the number of apparatus sent to each incident and the total time the apparatus is gone from

the primary service area. Responses into primary service area from Licensee's other response areas;

(d) Total number of incidents responded to in the Town by service type and dollar loss;

(e) Fire Cause Analysis report of structure fires;

(f) Report of Fire Prevention Activities;

(g) Report of estimated water usage for training, fire suppression activities and fire prevention;

(h) Average response time for each of the stations in the License area;

(i) If requested by the Town, a response time report that shows the time a call is received by Licensee, time apparatus goes enroute to the call, and time each emergency unit arrives on the scene.

Section 13-4-18. Subscriber Information

Licensee shall provide all prospective Subscribers and active Subscribers with complete, clear and concise written information, before, or at, the time of service, concerning all services and rates by Licensee.

Section 13-4-19. Billing Practices Information and Procedures [671]

(1) Licensee shall provide all Subscribers with complete information respecting billing and collection procedures, procedures for ordering changes in or termination of services, and refund policies, upon solicitation of service and before the consummation of any agreement for installation of service. Such information shall be provided to Subscribers in easy-to-understand language.

(2) Subscribers of any Licensee and Subscribers and property owners to whom the Default Provider must provide services shall be billed annually, or at such intervals specified in the Licensee’s License Agreement, or as otherwise proscribed by the Town, with payment required in advance. Fees not paid within 30 days of billing shall accrue interest at the rate of 10% per annum, compounded annually.

(3) All Licensed Providers shall charge rates that are based on livable square feet.

(4)) All Licensed Providers who utilize a monthly billing method may offer their customers a one month discount on the total amount that would otherwise be paid for the full years’ worth of payments provided the customer pays for the full year’s

amount (that is, payment for 11 months) in advance at the beginning of each annual billing year.

Section 13-4-20. Billing and Privacy Complaints

Licensee shall establish a procedure for resolution of Subscriber's billing disputes and complaints, including privacy complaints. Licensee shall provide a complete, written description of these procedures to all Subscribers, and the Town, within four months of the execution of the License pursuant to this section.

Section 13-4-21. Distribution of Subscriber Information

Licensee and its agents or employees shall not provide to any third party, other than the Town, data identifying or designating any Subscriber either by name or address.

Section 13-4-22. Subscriber's Rights to Inspect and Verify Information

(1) Licensee shall make available for inspection by a Subscriber at a reasonable time and place, all personal Subscriber information that Licensee maintains regarding said Subscriber.

(2) A Subscriber may obtain from Licensee a copy of any or all the personal Subscriber information regarding him or her maintained by Licensee. Licensee may require a reasonable fee for making a copy.

(3) A Subscriber or user may challenge the accuracy, completeness, retention, use or dissemination of any item of personal Subscriber information. Challenges and related inquiries about the handling of Subscriber information shall be directed to the Licensee.

Section 13-4-23. Performance Bond

(1) Each application for a new License or renewal License shall file with its application, and maintain in full effect at all times thereafter, a corporate surety bond issued by a surety licensed by the State of Arizona and approved by the Town Council, or such other assurance approved by the Town Council, in an amount equal to $1,000,000.00; which may be waived for municipal Licensees who have adequate reserves to offset any bonding requirements set forth herein.

(2) Such bond or other assurance shall be maintained always thereafter during the term of the License.

(3) Any bond required by this Section and replacements thereof, shall be effective for the entire term of the License and conditioned that in the event the Licensee shall fail to comply with any one or more of the provisions of the License, then there shall be

recoverable jointly and severally from the principal and surety of such bond, any damages, delinquent License fees, penalties, compensation and costs of repairing or completing the System and cost of removal or abandonment of property and repair of streets and other public improvements, up to the full amount of the bond; said condition to be a continuing obligation for the duration of the License and thereafter until Licensee has satisfied all of its obligations that may have arisen from the acceptance of the License, or from the exercise of any privileges thereunder. The surety bond shall provide that the obligations of the surety shall not cease for any reason until 30 days after receipt by the Town of written notice of cancellation, or intent not to renew.

(4) Neither the provisions of this Section, nor the terms of any bond accepted by the Town, nor the recovery of any damages under the bond, shall be construed to excuse faithful performance by the Licensee or to limit the liability of the Licensee for damages.

Section 13-4-24. Violation by Licensee

(1) If the Town gives the Licensee written notice that the Town believes Licensee violated any material provision of the License, the Licensee shall within 30 days of receipt of written notice from the Town:

(a) Advise the Town in writing if the Licensee contests the Town's assertion of violation and shall provide such information or documentation as may be necessary to support Licensee's position; or

(b) Cure any such violation and provide written evidence of the cure, or, if the Violation cannot be cured within such 30 day period, take all necessary steps to cure the violation and diligently continue such efforts until said violation is cured. Licensee shall report to the Town, in writing, at 30 day intervals as to Licensee's efforts, indicating the steps taken by Licensee to cure said violation and reporting Licensee's progress until such violation is cured.

(2) In the event that Licensee contests the Town's assertion of violation or fails to respond to the Town's notice of violation, within 15 days the Town shall convene hearings in accordance with the procedures set forth in Section 13-4-30.

Section 13-4-25. Administrative Hearing

(1) An administrative hearing must be conducted by the Town Manager, unless Licensee waives such administrative hearing in writing, whereupon a hearing before the Town Council as provided for in Section 13-4-31 shall be held. This shall be a public hearing, and Licensee shall be afforded an opportunity to be heard and to present evidence. Within 15 days after such hearing, the Town Manager shall issue a determination. In that determination the Town Manager may:

(a) find that Licensee is not in violation of the terms of the License;

(b) find that the Licensee is in violation, but that such violation was with just cause and waive any sanction that might otherwise be imposed;

(c) find that Licensee is in violation of the terms of the License, take corrective action and foreclose on all or any appropriate part of the surety provided pursuant to Section 13-4-28 to pay the cost thereof;

(d) find that Licensee is in violation of the terms of the License and impose a penalty of up to $100.00 per day for each day the violation continues;

(e) in the case of a material violation recommend that the Town Council declare the Licensee in violation and terminate the License, provided that the Town Council may take action on any such recommendation only after a public hearing as set forth in subsection 13-4-30.

(2) If the Town Manager determines that Licensee has committed a violation, the determination shall1 be accompanied by a statement of reasons for the determination, including findings of fact.

(3) The Town Manager's decision shall become final unless Licensee requests a public hearing before the Town Council within 15 days of its receipt of the Town Manager's statement of reasons and findings of fact.

Section 13-4-26. <u>By Town Council</u>

If a public hearing before the Town Council is requested by Licensee or if held pursuant to a request by the Town, it shall be de novo and it shall convene within 30 days of the request therefor. All witnesses shall be sworn and shall be subject to cross-examination; however, formal rules of evidence shall not apply. The Town Council's decision shall be made not later than 45 calendar days after the hearing. In that decision, the Town Council may:

(1) Find that Licensee is not in violation of the terms of the License;

(2) Find that Licensee is in violation but that such violation was with just cause and waive any penalty that may otherwise be imposed;

(3) Find that Licensee is in violation of the terms of the License, take corrective action and foreclose on all or any appropriate part of the surety provided pursuant to Section 13-3-27 to pay the cost thereof;

(4) Find that Licensee is in violation of the terms of the License and impose a penalty of up to $100.00 per day for each day the violation continues;

(5) In the case of a material violation of the License declare the Licensee in violation and terminate the License.

Section 13-4-27. Alternative Remedies

No provisions of this Article shall be deemed to bar the right of the Town or the Licensee to seek or obtain judicial relief otherwise available to it. Neither the existence of other remedies identified in this Article nor the exercise thereof shall be deemed to bar or otherwise limit the right of the Town or the Licensee to recover monetary damages or judicial enforcement of the Licensee's or the Town's obligations by means of specific performance, injunctive relief or mandate, or any other judicial remedy at law or in equity.

Section 13-4-28. Non-Enforcement

A Licensee shall not be relieved of any obligation to comply with any of the provisions of the License or any rule, regulation, requirement or directive promulgated thereunder by reason of any failure of the Town or its officers, agents or employees to enforce prompt compliance.

Section 13-4-29. Insurance and Liability

(1) Upon the execution of a License, a Licensee shall file with the Town, and maintain in effect throughout the term of the License, insurance policies issued by an insurer licensed to conduct business in the State of Arizona, insuring with respect to the operation and maintenance of the System, comprehensive general and automobile liability coverage, including but not limited to:

(a) blanket contractual liability;

(b) completed operations liability;

(c) broad form property damage endorsement, including but not limited to, coverage for explosion, collapse and underground incidents; and

(d) automobile non-ownership liability.

The Town expressly reserves the right to modify any insurance and liability requirements when it deems such action necessary to protect the public interest and welfare.

(2) This insurance shall include coverage which meets or exceeds the following minimum amounts, or exposure to loss:

(a) For bodily injury, including death, in the amount of $2,000,000 combined single limit;

b) For property damage in the minimum amount of $1,000,000;

(c) Comprehensive automobile liability for bodily injury of $2,000,000 combined single limit;

(d) Worker's compensation coverage as required by the laws, rules and regulations of the State of Arizona.

(3) Any insurance policy obtained by Licensee in compliance with this Section shall include the Town as an additional insured, shall be primary, and must be approved by the Town Risk Manager/Town Attorney. Such insurance policy shall be filed and maintained with the Town during the term of the License, and may be changed from time to time to reflect changing liability limits. Licensee shall immediately advise the Town of any litigation that would affect this insurance or reduce the amount of' coverage. Any insurance or self-insured coverage carried by the Town shall be excess coverage and not contributory insurance to that provided by a Licensee.

(4) Neither the provisions of this Section nor any damages recovered by the Town thereunder shall be construed to limit the liability of Licensee to the Town for damages.

(5) All insurance policies shall contain the following endorsement:

> "This insurance policy may not be canceled by the insurance carrier, nor may the insurance carrier fail to renew this policy until thirty (30) days after receipt by the Town of Paradise Valley of the insurance carrier's written notice of its intention."

(6) Licensee shall be solely responsible for all premiums due and payable with respect to the insurance coverage required.

(7) All deductible amounts applicable to liability insurance coverage must be approved by the Town.

(8) Licensee may self-insure the above-described policy coverage if Licensee or its parent is of sufficient financial standing to reasonably provide such insurance. A Licensee that elects to self-insure shall file with the Town a Certificate of Insurance as specified by the Town.

Section 13-4-30. Indemnification by Licensee

Each Licensee shall, at its sole expense, fully indemnify, defend, and hold harmless the Town, and in their respective capacities, the officers, agents, and employees of the Town, for, from, and against any and all claims, suits, actions, liability and judgments for damages for actual or alleged injury to persons or property, including loss of property due to an occurrence, whether or not such property is physically damaged or destroyed, wherein such injury or loss arises in whole or in part through the acts or omissions of the Licensee or of the Town, of their officers, agents, employees or contractors in connection with fire protection and emergency medical service. Such indemnification, however, shall not be construed to include liability or loss arising out of actions of Town police officers acting in the course and scope of their employment.

Nothing herein shall be deemed to prevent the Town from participating in the defense of any litigation by its own counsel at the Licensee's sole expense. Such participation shall not under any circumstances relieve the Licensee from its duty of defense against liability or of paying any judgment entered against the Town, or its officers, agents and employees.

Section 13-4-31. Severability

If any section, subsection, sentence, clause, phrase, or portion of this Article is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions hereof.

FOOTNOTES

95 Ordinance #199 - 01/27/83
356 Ordinance #356 - 06/24/93
407 Ordinance #407 - 09/07/95
466 Ordinance #466 - 08/27/98 Repealing Section 13-2-25
495 Ordinance # 495 - 02/10/00
509 Ordinance # 509 - 11/16/00
526 Ordinance # 526 – 3/26/03
556 Ordinance # 556 – 04/14/2005
563 Ordinance # 563 – 06/23/2005
589 Ordinance # 589 – 02/22/2007
593 Ordinance #593 – 05/10/2007
626 Ordinance #626 – 11/08/2010 (Section 13-3 added)
635 Ordinance #635 – 05/12/2011 (Added Section 13-4)
650 Ordinance #650 – 05/12/2012
648 Ordinance #648 – 11/15/2012
701 Ordinance #701 – 11/15/2012
671 Ordinance #671 – 12/19/2013
679 Ordinance #679 – 06/26/2014

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CHAPTER 14 CABLE TELEVISION SYSTEM

Article 14-1 GENERAL

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Section 14-1-1 Intent

The Town of Paradise Valley finds that the development of cable television and communications systems has great benefit and impact upon the residents of Paradise Valley. Because of the complex and rapidly changing technology associated with cable television, the Town further finds that the public convenience, safety and general welfare can best be served by establishing regulatory powers which should be vested in the Town or such persons as the Town shall designate. It is the intent of this Chapter and subsequent amendments to provide for and specify the means to attain the best possible public interest and public purpose in these matters and any License issued pursuant to this Chapter shall be deemed to include this finding as an integral part.

Section 14-1-2 Short Title

This Chapter shall be known and may be cited as the "Paradise Valley Cable Code".

Section 14-1-3 Definitions

For the purposes of this Chapter the following terms, phrases, words and their derivations shall have the meaning given in this Section. When not inconsistent with the context, words used in the present tense include the future, words in the plural number include the singular number, words in the singular number include the plural number, and the use of any gender shall be applicable to all genders whenever the sense requires. The word "shall" is mandatory and the word "may" is permissive. Words not defined shall be given their common and ordinary meaning.

1. "Cable Communications System" means a facility consisting of a set of closed transmission paths and associated signal generation, reception, and control equipment that is designed to provide cable service which includes video programming and any part of which is located within a public right-of-way or public utility easement.

2. "Gross Revenues" shall mean all cash, credits, property of any kind or nature or other consideration less related bad debts of Licensee, derived directly or indirectly by the Licensee, its affiliates, subsidiaries, parents, and any other person or entity in which the Licensee has a financial interest, or which has a financial interest in Licensee, arising from or attributable to operation of the Licensee's Cable Communications System in the Town, including but not limited to:

   a. revenue from all charges for services provided to Subscribers of entertainment and non-entertainment services (including Leased Access fees);

   b. revenue from all charges for the insertion of commercial advertisements upon the Cable Communications System;

   c. revenue from all charges for the leased use of studios;

   d. revenue from all charges for the installation, removal, connection and reinstatement of equipment necessary for the utilization of the Cable Communications System and the provision of Subscriber and other services; or

   e. revenue from the sale, exchange or use or cablecast of any programming developed for community use or institutional users.

   Any goods, services, or other remuneration in non-monetary form shall be valued at their retail price. Unless it results from an effort by Licensee or others described above to circumvent the purposes of a. - e. above, "gross revenues" shall not include any increase in the value of any stock, security or asset; the value of complimentary services provided to Licensee's employees and as required by this Chapter; any dividends or other distributions made in respect of any stock or security; and value received by Licensee (or any of its affiliates, subsidiaries, or parents) to reduce expenses of Licensee; or any revenues received by Licensee or any of its affiliates, subsidiaries or parents as a result of payments by Licensee of program rights fees.

3. "Leased Access" shall mean the use on a fee-for-service basis of the Cable Communications System by business enterprises (whether profit, nonprofit or governmental) to render services to the citizens of the Town and shall include without limitation all use pursuant to Section 612 of the Cable Communications Policy Act of 1984 (47 USC 521 et seq.)

4. "License" shall mean the nonexclusive right granted by the Town which authorizes a person to erect, construct, reconstruct, operate, dismantle, test, use and maintain a Cable Communications System in the Town.

5. "License Fee" shall mean a fee or assessment of any kind imposed on a Licensee or Subscriber solely because of their status as such. The term "License Fee" does not include:

a. any tax, fee, or assessment of general applicability (including any such tax, fee, or assessment imposed on both utilities and cable operators or their services but not including a tax, fee or assessment which is unduly discriminatory against a Licensee or a Subscriber);

b. capital costs which are required by the License to be incurred by the Licensee for public, educational or governmental access facilities;

c. requirements or charges incidental to the awarding or enforcing of the License, including payments for bonds, security funds, letters of credit, insurance, indemnification, penalties, or liquidated damages; or

d. any fee imposed under Title 17, United States Code.

6. "New License" shall mean a License sought by, or granted to, a person who does not hold a License.

7. "Outage" means three or more "no picture" reports occurring concurrently in the { section.

8. "Person" means any individual, corporation, partnership, association, joint venture or organization of any kind and the lawful trustee, successor, assignee, transferee or personal representative thereof.

9. "Renewal License" shall mean a License sought by, or granted to, an existing Licensee.

10. "Response" or "Respond" means having a service technician fix the problem on the premises of the customer, or having the problem electronically fixed from the office, or having the problem otherwise corrected.

11. "Street" shall mean the surface of and the space above and below any public street, road, highway, freeway, easement, lane, path, alley, court, sidewalk, parkway, or driveway now or hereafter existing as such within the Town.

12. "Subscriber" means any person who legally receives any one or more of the services provided by the Cable Communications System.

13. "Town" shall mean the Town of Paradise Valley, a municipal corporation of the State of Arizona and all the territory within its present and future boundaries and including any area over which the Town exercises jurisdiction. The Town Council is the governing authority of the Town.

14. "Violation" means a singular failure to comply with any term of this Chapter.

Section 14-1-4 Police Powers

Nothing in this Chapter or in any agreement awarding a License in accordance herewith shall be construed as an abrogation by the Town of any of its lawful police powers.

Section 14-1-5 The License Area

The License area shall be the entire Town.

Article 14-2 APPLICATION, GRANT, TRANSFERS

Section 14-2-1 Contents of Application for New License
Section 14-2-2 Contents of Application for License Renewal
Section 14-2-3 Procedure for License Renewal Application
Section 14-2-4 Grant of License [600]
Section 14-2-5 Transfers

Section 14-2-1 Contents of Application for New License

Applications for a new License shall include at a minimum:

1. A clear description of the identity of the applicant, including but not limited to the name of the applicant, the address of the applicant, the nature of the business entity, and evidence of the compliance of the business entity with all applicable law;

2. Evidence that the applicant has the financial, legal, administrative and technical ability to provide the services, facilities, and equipment set forth in its proposal;

3. A detailed License proposal;

4. A non-refundable application fee equal to one quarter of one percent (.0025) of the principal penal amount of the initial performance bond established pursuant to Section 14-7-1.1 of this Chapter, or such lesser sum as may be established by the Town Council, to cover the costs of review, issuance and enforcement of Licenses issued pursuant to this Chapter;

Certification that all aspects of the applicant's proposed Cable Communications System will comply with applicable zoning laws of the Town;

5. Detailed plans including a map or maps by { section of a scale of not less than one inch equaling 100' and specifications for the Cable Communications System which is proposed by the applicant; and the map shall show 100% coverage of lots existing on the date of granting the License upon completion of construction; and

6. A schedule of construction, as established by the applicant and reflected upon the map or maps provided pursuant to subsection (6) of this Section, showing by a logical geographic progression which locations within the Town shall be constructed by the applicant within each calendar quarter during the period of construction.

Section 14-2-2 Contents of Application for License Renewal

Applications for a Renewal License shall include at a minimum:

1. A clear description of the identity of the applicant, including but not limited to the name of the applicant, the address of the applicant, the nature of the business entity, and evidence of the compliance of the business entity with all applicable law;

2. Evidence that the renewal applicant has the financial, legal, administrative and technical ability to provide the services, facilities, and equipment set forth in its renewal proposal;

3. A detailed Renewal License proposal;

4. A non-refundable application fee of $1,500.00 to cover the costs of review, issuance and enforcement of Licenses issued pursuant to this Chapter;

5. Certification that all aspects of the applicant's existing Cable Communications System or proposed additions thereto comply with applicable zoning laws of the Town;

6. Detailed maps or diagrams showing plant specifications by { section for the Cable Communications System which is owned by the applicant;

7. A schedule of rebuild construction, if applicable, as established by the applicant and reflected upon the map or maps provided pursuant to subsection (6) of this Section, showing by a logical geographic progression which locations within the Town shall be rebuilt by the applicant within each calendar quarter during the period of rebuild construction; and

8. Evidence that the cable operator's renewal proposal is reasonable to meet the future cable-related community needs and interests, taking into account the cost of meeting such needs and interests.

Section 14-2-3 Procedure for License Renewal Application

1. Unless otherwise preempted by federal law, the license renewal procedure set forth in this Section 14-2-3 shall be followed.

2. If a Licensee decides to initiate a formal license renewal process, it must notify the Town within 30-36 months of the expiration date of the existing License. Upon such notification, the Town shall commence the process set forth in this Section 14-2-3 unless Licensee and the Town agree otherwise in writing.

    a. The Council shall review and evaluate the future cable-related community needs and interests and Licensee's past performance. The review and evaluation process must include opportunity for public comment and shall be completed within 90 days of the receipt of Licensee's notice to the Town.

    b. Immediately upon completion of the review and evaluation process, the Town must notify Licensee that it may file a renewal application. The notice must specify the information to be included in the renewal application and the deadline for filing the application, which must be no earlier than 30 calendar days following the date of the notice.

    c. Upon receipt of the renewal application, the Council shall publish notice of its receipt.

3. In considering a renewal application, the Town shall consider those factors set forth in subsection 14-2-4(8)(b).

4. After an opportunity for public comment, the Town Council may either:

    a. pass a resolution agreeing to renew the License, or

    b. pass a resolution that makes a preliminary assessment that the License should not be renewed.

5. The Council's action under subsection 14-2-3(4) must be taken within four months of the date of the renewal application notice to Licensee required by subsection 14-2-3(2)(b).

6. If a preliminary assessment is made that the License should not be renewed, the Town shall conduct an administrative proceeding before the Town Council at which Licensee shall be afforded full procedural due process and at which the factors set

forth in subsection 14-2-4(8)(b) shall be considered. A transcript shall be made of any such proceeding. At the completion of the hearing, the Town shall issue a written decision granting or denying the renewal proposal. The decision shall state the reasons therefor. A Licensee aggrieved by the Town's decision may commence an action within 120 days in any court with jurisdiction.

7. The provisions of subsections 14-2-3(1) through (6) notwithstanding, a Licensee may submit a renewal proposal at any time, and the Town may, after affording the public adequate notice and opportunity for comment, grant or deny such proposal at any time. The denial of a renewal pursuant to this subsection shall not affect action on a renewal proposal that is submitted in accordance with subsections 14-2-3(1) through (6).

Section 14-2-4 Grant Of License [600]

1. Authority to Grant License. The Town may grant a License for the entire Town only, and not for a portion or portions of the Town.

2. Grant. In the event that the Town grants a revocable License to construct, operate, maintain and reconstruct a Cable Communications System or a renewal of an existing License, the License shall constitute both a right and an obligation to provide the services of a Cable Communications System as required by the provisions of this Chapter and the License. The License shall include those provisions of the applicant's "Application for License" that are finally negotiated and accepted by the Town and Licensee.

   Any License granted under the terms and conditions of this Chapter shall be consistent with federal laws and regulations and state laws and regulations. In the event of conflict between the terms and conditions of the License and the terms and conditions on which the Town can grant a License, the federal and state general law or statutory requirements or both shall, without exception, control.

   Unless otherwise set forth in the License, any License granted is subject to the provisions of this Chapter and other provisions of the Paradise Valley Town Code.

3. License Required. No Cable Communications System shall be allowed to occupy or use the streets in the Town or be allowed to operate without a License issued in accordance with the provisions of this Chapter.

4. Establishment of License Requirements. The Town may establish appropriate requirements for New Licenses or Renewal Licenses, and may modify these requirements from time to time to reflect changing conditions and state of art in the cable industry, consistent with federal law. Such requirements shall not be retroactive to Licenses then in effect, except as set forth in Section 14-1-4.

5. Duration. The term of any License and all rights, privileges, obligations, and restrictions pertaining thereto shall be as established in the License, unless terminated sooner as hereinafter provided in the Chapter.

6. License Nonexclusive. Any License granted shall be nonexclusive. The Town specifically reserves the right to grant, at any time, such additional Licenses as it deems appropriate, provided however, that such additional grants shall not operate to materially modify, revoke or terminate any rights previously granted to any Licensee.

7. License Applications. Applicants for a License shall submit to the Town written applications utilizing the standardized format provided by the Town, at the time and place designated by the Town for accepting applications, and including the application fees designated by the Town.

8. Grant Procedure.

    a. All applications for a New License when filed shall be available for public inspection at places designated by the Town. No later than 90 days after the final date for filing applications, one or more public hearings shall be held on the applications. A decision shall be made by the Town not later than 90 days after the conclusion of all such public hearings based upon an evaluation of the application or applications, the hearings, and other information that the Town may deem relevant. The Town may grant one or more Licenses, or may decline to grant any License.

    b. All applications for a Renewal License submitted by a Licensee shall be available for public inspection at places designated by the Town. Upon submittal of a renewal proposal, the Town shall determine in a manner consistent with applicable federal law whether such proposal should be accepted. Such determination shall be based solely on whether (A) Licensee has substantially complied with the material terms of the existing License and with applicable law; (B) the quality of Licensee's service, including signal quality, response to consumer complaints, and billing practices, but without regard to the mix, quality, or level of cable services or other services provided over the system, has been reasonable in light of community needs; (C) Licensee has the financial, legal, administrative and technical ability to provide the services, facilities, and equipment as set forth in the proposal; and (D) Licensee's proposal is reasonable to meet the future cable-related community needs and interests, taking into account the cost of meeting such needs and interests.

Section 14-2-5 Transfers

1. A License shall not be sold, assigned or transferred, either in whole or in part, or leased, sublet, nor shall title thereto, either legal or equitable, or any right, interest or property therein, pass to or vest in any person without the prior written consent of the Town. Such consent shall not be withheld unreasonably.

2. No such consent shall be required for a transfer in trust, mortgage, or other hypothecation as a whole or in part to secure an indebtedness, except when such hypothecation shall exceed 50% of the market value of the property used by the Licensee in conducting the business of the Licensee.

3. A transferee must comply with any amendments to this Chapter enacted at least one year prior to the Licensee's notification to the Town of the proposed transfer. Transferee shall not be bound by any amendment to this Chapter enacted within one year immediately prior to the notice of proposed transfer.

4. The proposed assignee must show technical ability, financial capability, management experience ,legal qualifications and general character qualifications as determined by the Town and must agree to comply with all provisions of the License. Town shall be deemed to have approved a proposed transfer or assignment in the event that the Town does not communicate in writing to Licensee within 120 days following receipt of written notice of the proposed transfer or assignment that the transfer has been denied.

5. The Licensee shall promptly notify the Town of any actual or proposed change in, or transfer of, or acquisition by any other party of, control of the Licensee. The word "control" as used herein is not limited to major stockholders but includes actual working control in whatever manner exercised. Every change, transfer, or acquisition of control of the Licensee shall make the License subject to cancellation unless and until the Town shall have consented thereto, which consent will not be unreasonably withheld. For the purpose of determining whether it shall consent to such change, transfer or acquisition of control, the Town may inquire into the qualifications of the prospective controlling party and the Licensee shall assist the Town in any such inquiry.

6. The consent or approval of the Town Council to any transfer of a License shall not constitute a waiver or release of the rights of the Town in and to the streets, and any transfer shall by its terms, be expressly subordinate to the terms and conditions of a License.

7. In any absence of extraordinary circumstances, the Town will not approve any transfer or assignment of a License prior to substantial completion of construction of the proposed system.

8. The Town may reserve the right of first refusal to purchase a Licensee's Cable Communications System as provided in the License.

9. In no event shall a transfer of ownership or control be approved without the successor in interest becoming a signatory to the License agreement.

10. A non-refundable application fee of $1,500.00 to cover the costs of transfer, re-issuance and enforcement of Licenses issued pursuant to this Chapter.

Article 14-3 STREETS AND CONSTRUCTION

Section 14-3-1 Authority for Use of Streets
Section 14-3-2 Conditions on Street Occupancy
Section 14-3-3 Approval of Construction by Town; Inspection
Section 14-3-4 Construction Standards
Section 14-3-5 Undergrounding
Section 14-3-6 Relocation
Section 14-3-7 Completion
Section 14-3-8 Removal

Section 14-3-1 Authority for Use Of Streets

1. For the purposes of operating and maintaining a Cable Communications System in the Town, Licensee may erect, install, construct, repair, replace, reconstruct and retain in, on, under, upon, across and along the streets within Town such lines, cables, conductors, ducts, conduits, vaults, manholes, amplifiers, appliances, pedestals, attachments and other property and equipment as are necessary and appurtenant to the operation of the Cable Communications System, provided that all applicable permits are applied for and granted, all fees paid and all other Town codes and ordinances are otherwise complied with.

2. Licensee shall construct and maintain a Cable Communications System so as not to unreasonably interfere with other uses of streets. Licensee shall make use of existing facilities available to Licensee. Licensee shall use reasonable efforts to individually notify all property owners affected by proposed construction prior to the commencement of that work.

3. Notwithstanding the above grant to use streets, no street shall be used by Licensee if the Town, in its absolute discretion, determines that such use is inconsistent with the

terms, conditions or provisions by which such street was created or dedicated, or presently used.

Section 14-3-2 Conditions on Street Occupancy

(1) All transmission and distribution structures, lines, and equipment erected by the Licensee within the Town shall be so located as to cause minimum interference with the proper use of streets, landscaping, alleys, and other public ways and places, and to cause minimum interference with the rights and reasonable convenience of property owners who abut any of the said streets, alleys or other public ways and places.

(2) In case of disturbance of any street, sidewalk, alley, public way, paved area, or landscaped area,the Licensee shall, at its own cost and expense and in a manner approved by the Town Engineer, replace and restore such street, sidewalk, alley, public way, paved area or landscaped area in compliance with Town standards.

(3) Damaged equipment must be replaced within ten business days of written notification to Licensee. If Licensee is not able to replace in ten days, then Licensee must notify the Town Manager and receive written acceptance of the delay.

Section 14-3-3 Approval of Construction by Town; Inspection

Except for individual service drops, a Licensee shall not, within the Town's rights-of-way and public utility easements, run any kind of line, make any attachment, nor shall any construction of any kind within the Town's rights-of-way and public utility easements be commenced without the prior approval of the plans by the Town. Such approval shall not be unreasonably withheld and action shall be taken on any request for approval within three business days of the receipt of the request or it shall be deemed granted. Licensee shall be able to make emergency repairs pursuant to Article 5-5 of the Town Code. The Town has the right to inspect the construction, operation and maintenance of the system by the Licensee to insure compliance with this Chapter.

Section 14-3-4 Construction Standards

(1) Licensee shall at all times comply with the National Electrical Safety Code (National Bureau of Standards); National Electrical Code (National Bureau of Fire Underwriters); federal, state and local regulations; and codes and ordinances of the Town.

(2) The Cable Communications System shall not endanger or interfere with the safety of persons or property within the Town or other areas where the Licensee may have equipment located.

(3) During construction of the Cable Communications System all working facilities, conditions, and procedures used shall comply with the standards of the Occupational Safety and Health Administration.

(4) Construction, installation and maintenance of the Cable Communications System shall be performed in close coordination with public and private utilities serving the Town in an orderly and workmanlike manner, following generally accepted construction procedures and practices and working through existing committees and organizations.

(5) All cable and wires shall be installed, where possible, parallel with electric and telephone lines, and multiple cable configurations shall be arranged in parallel and bundled with due respect for engineering consideration.

Section 14-3-5 Undergrounding

Except as otherwise authorized, a Licensee shall construct and install its cables, wires and other facilities underground. Amplifier boxes and pedestal mounted terminal boxes may be placed above ground if existing technology reasonably requires.

With respect to any cables, wires and other like facilities constructed and installed by a Licensee above ground, the Licensee shall, at its sole expense, reconstruct and reinstall such cables, wires or other facilities underground pursuant to any project under which the cables, wires or other like facilities are placed underground within an area. The duty of a Licensee to place its cables, wires and other facilities underground shall arise only if all like facilities of utilities which are existing above ground are placed underground.

Section 14-3-6 Relocation

If during the term of a License the Town, a public utility district, a public water district, a public sanitation district, a public drainage district or any other similar special public district elects to alter, repair, realign, abandon, improve, vacate, reroute or change the grade of any street or to replace, repair, install, maintain, or otherwise alter any above ground or underground cable, wire conduit, pipe, line, pole, wire-holding structure, structure, or other facility utilized for the provision of utility or other services or transportation of drainage, sewage or other liquids, the Licensee, shall, except as otherwise provided, at its sole expense remove or relocate as necessary its wires, cable, underground conduits, manholes and any other facilities which it has installed. A Licensee shall take action to remove or relocate such facilities at such time or times as directed by the agency or company undertaking the work. Reasonable advance written notice shall be mailed to the Licensee advising the Licensee of the date or dates removal or relocation is to be undertaken.

Section 14-3-7 Completion

(1) A Final Order of Completion shall be issued by the Town Council when:

(a) the construction of the Cable Communications System has been completed in compliance with the construction standards and the design and other requirements of this Chapter;

(b) cable communication services have been made available to 100% of the dwelling units within the Town;

(c) any and all studio facilities, equipment, channels and other services, resources or benefits required for public, educational, and governmental access purposes pursuant to the provisions of this Chapter have been completed and made available;

(d) complete and accurate "as built" plans have been filed by the Licensee with the Town; and

(e) a Notice of Completion has been filed by the Licensee.

(2) For purposes of this Chapter, cable communication service shall be deemed to be made available when cable communication services are offered on a non-discriminatory basis for immediate provision to the owner or legal representative of the owner.

(3) For the purpose of determining compliance with the provisions of this Chapter and of determining completion under this Section, the total number of dwelling units shall be deemed to be the actual number of dwelling units available for occupancy in the Town as of a date 45 calendar days in advance of the date of filing by the Licensee of the Notice of Completion, provided that the Licensee files the Notice of Completion with a good faith belief that it has in fact achieved completion as of the date of filing.

(4) A Licensee who asserts completion shall file a written Notice of Completion with the Town Clerk. The Notice of Completion shall state the total number of dwelling units available for occupancy 45 calendar days in advance of the filing of the Notice, the total number of dwelling units to which cable communication service has been made available as of the date of filing, and shall otherwise certify completion as defined by the first paragraph in this Section. Neither the Notice of Completion nor the statements, assertions or certifications contained therein shall be deemed to be binding upon the Town.

(5) During the period of construction of the Cable Communications System and during the 60 day period following filing of the Notice of Completion, all elements and components thereof, and all equipment and studio facilities required by the License documents shall be subject to inspection by Town employees or authorized agents for the purpose of determining whether the System and related facilities comply with the License

and the provisions of this Chapter. The Licensee shall authorize such inspection and provide such information and cooperation as is required in order to permit an adequate investigation to determine the extent of such compliance.

(6) The Licensee must be able to offer to install operable cable communication services to all dwelling units in the Town no later than 24 months after the Council grants a New License.

(7) The provisions of this section shall apply only to construction of a new Cable Communications System pursuant to a New License or to system wide reconstruction of an existing Cable Communications System. In no other circumstances shall a Final Order of Completion be required by the Town.

Section 14-3-8 Removal

(1) Upon expiration or termination of a License, if the License is not renewed, and if neither the Town nor an assignee purchases the Cable Communications System, the Licensee may remove any underground cable if cable may be removed without trenching.

(2) A Licensee shall file written notice with the Town Clerk not later than 30 calendar days following the date of expiration or termination. The notice shall inform the Town of Licensee's intention to remove its cable and shall provide a schedule for the removal.

(3) The schedule filed pursuant to paragraph (2) shall be subject to the approval of the Town Engineer.

(4) Removal of cable by the Licensee shall be completed not later than 12 months following the date of expiration or termination.

(5) If notice is not filed pursuant to paragraph (2), the underground cable shall be deemed abandoned.

(6) If the Licensee does remove cable, all underground cable which is not removed pursuant to paragraph (4) shall be deemed abandoned.

(7) Upon expiration or termination of License, if the License is not renewed and if neither the Town nor an assignee purchases the System, the Licensee, at its sole expense, shall, unless relieved of the obligation by the Town, remove from the streets all above ground elements of the Cable Communications System.

(8) The Licensee shall remove, at its sole cost and expense, any underground cable or conduit by trenching or opening of the streets along the extension thereof which is ordered to be removed by the Town Council based upon a determination, in the sole

discretion of the Council, that removal is required in order to eliminate or prevent a hazardous condition.

(9) The Licensee shall apply for and obtain such encroachment permits, Licenses, authorization or other approvals and pay such fees and deposit such security as required by applicable ordinances of the Town, shall conduct and complete the work of removal in compliance with all such applicable ordinances, and shall restore the streets to substantially the same condition they were in before the work of removal commenced.

ARTICLE 14-4 SYSTEM

Section 14-4-1 General Capability

Each Cable Communications System shall, at a minimum:

(1) relay to Subscriber terminals those broadcast signals required by the Federal Communication Commission;

(2) distribute in color all television signals which it receives in color;

(3) make available upon request by any Subscribers receiving channels showing premium services and pay per view events, a lockout device which prevents the unauthorized viewing of such channels;

(4) make available to Subscribers, upon request, an RF switch (an A-B switch) permitting conversion from cable to antenna reception; and

(5) have a present, activated capacity of 330 megahertz, or the capacity provided in the License.

Section 14-4-2 System Reliability

(1) Standby Power - Each Cable Communications System shall include equipment capable of providing standby powering for headend, microwave hubs and key trunk amplifiers for approximately two hours. The equipment shall be so constructed as to automatically revert to the standby mode when the utility power returns. The system shall incorporate safeguards necessary to prevent injury to linemen resulting from a standby generator powering a "dead" utility line.

(2) System Reliability - A desirable objective of the cable system shall be the achievement of an "uptime" (operation without system malfunction, and meeting all performance requirements) of at least 99% of the total scheduled operating time. The

Licensee shall specify methods for achieving this objective. A repeated or lengthy failure by Licensee to achieve this objective shall be a Violation of this Chapter.

Section 14-4-3 Override Capability

Each Cable Communications System shall include an "Emergency Alert Capability" which will permit the Town in times of emergency to override by remote control the audio and video of all channels simultaneously.

Section 14-4-4 Interconnection

The Cable Communications System shall be interconnected with the Licensee's other systems as provided in the License.

Section 14-4-5 Upgrade Requirements

Licensee shall establish a policy intended to improve the Cable Communications System. The policy shall include such programs as drop replacement, hub repowering, trunk and feeder replacement and preventive maintenance, but not limited solely to the examples stated.

Section 14-4-6 Public, Educational and Governmental Access

The following topics shall be discussed during the application process for a New Licensee or a Renewal License:

(1) Town Hall Programming - Whether the system shall include the capability to televise and distribute to Subscribers events occurring live at the Town Hall with a signal quality similar to that of other major channels distributed by the Licensee.

(2) Community Service Channels - Whether the system shall include the provision of community service or access channels including one channel for government usage, one channel for educational usage (public and non-profit schools, colleges and universities), and one channel for public access/local origination.

(3) Facilities and Management - Whether Licensee shall provide studio facilities, production equipment, technical assistance and other facilities and equipment to enable the Town and its residents to fully utilize the system as not only an entertainment medium, but as an intracommunity communications and education medium. In the event that Licensee provides such services and facilities on a shared basis with other cities, towns or users, the Town and its residents shall be assured of no less than eight hours of production time per week in no segments less than one hour.

(4) If use of facilities for public, educational and governmental access is made available, whether a Licensee shall:

(a) allow all persons and entities desiring to cablecast public, educational or governmental access programming to produce programming upon, and electronically interface directly with, the Cable Communications System of Licensee so as to effectively cablecast the public, educational or governmental access programming, or, in the alternative,

(b) establish such reasonable rules and procedures, designed to promote the utilization of such public, educational and/or governmental access programming and capacity wherein the Licensee shall accept and cablecast such public, educational and/or governmental access programming upon the Cable Communications System as shall be provided to the Licensee by such persons and entities.

(5) Two-Way Communication - whether Licensee shall provide two-way communication for fire, police and safety activities.

Section 14-4-7 Support for Use of Access

Nothing contained in this Chapter shall be construed to limit the authority of the Licensee to make voluntary payments in support of the use of public, educational and governmental access, or any combination of one or more of these uses. However, such payments are expressly not considered in the calculation of License Fees pursuant to this chapter.

SECTION 14-4-8 Availability of Access Facilities

Licensee shall provide free Basic Subscriber services and one Standard Drop without cost to each of the following facilities:

(1) Public schools licensed by the State, community colleges, and universities or subparts thereof, located in the Town; and

(2) Municipal fire and police stations and other buildings owned or leased by the Town and used for public purposes.

Section 14-4-9 Theft of Service

It is unlawful for any person of entity to make any unauthorized connection, whether physically, electrically, acoustically, inductively or otherwise, to any part of a

Licensed cable television system within the Town for the purpose of enabling receipt of video, audio, digital or other signals or information, without payment to Licensee.

Section 14-4-10 Tampering With System

It shall be unlawful for any person or entity, without the consent of Licensee, to willfully tamper with, remove, damage or destroy any cable or equipment used in connection with a Cable Communications System within the Town.

ARTICLE 14-5 FINANCIAL

Section 14-5-1 License Fee [492]

For the purposes of providing revenue with which to defray the costs of regulation arising out of the granting of licenses under this Chapter and promoting, assisting and financing public, educational, and governmental access programming, each Licensee shall pay license fees in the amount of 5% (five percent) of licensee's gross revenues as defined in Paradise Valley Town Code Section 14-1-3(2).

Licensee shall pay the fees due to the Town for the preceding calendar quarter not later-than August 1, November 1, February 1, and May 1. Licensee must file with the Town not later than the date the license fee is due a certified statement by an officer of Licensee showing the Gross Revenue received by Licensee during the preceding quarter.

Section 14-5-2 Rental Payments

As compensation to the Town for the use made of its roads, streets and public thoroughfares, Licensee shall pay to the Town a rental fee equal to five percent of Licensee's Gross Revenue minus the License Fee payments made pursuant to Section 14-5-1. Notwithstanding anything in this Chapter to the contrary, the sum of the License Fee paid pursuant to Section 14-5-1 and the rental fee paid pursuant to this Section shall not exceed five percent of Licensee's Gross Revenues.

Licensee shall pay the fees due to the Town for the preceding calendar quarter not later than August 1, November 1, February 1, and May 1. Licensee must file with the Town not later than the date of each license and rental fee payment a certified statement by an officer of Licensee showing the Gross Revenue received by Licensee during the preceding quarter.

Section 14-5-3 Interest on Delinquent License Fees [492]

Any license fee payments which remain unpaid after the dates specified in Section 14-5-2 above shall be delinquent and shall thereafter accrue interest at the rate of ten percent per annum from the due date until paid in full.

Section 14-5-4 Auditing and Financial Records

During the term of each License, the Town may, not more frequently than once each year, conduct an audit of the books, records and accounts of the Licensee for the purpose of determining whether the Licensee has paid rental fees in the amounts prescribed by Section 14-5-2 above. The audit may be conducted by the auditor of the Town or by an independent certified public accounting firm retained by the Town, and shall be conducted at the sole expense of the Town. The party conducting the audit shall prepare a written report containing its findings, and the report shall be filed with the Town, and mailed to the Licensee.

Each Licensee shall make available for inspection by authorized representatives of the Town, its books, accounts, and all other financial records relating to Gross Revenue at reasonable times and upon reasonable advance notice for the purpose of permitting exercise of the authority conferred by this Section.

If the audit uncovers an error which has resulted in any underpayment of ten percent or greater of the rental fee, then Licensee shall reimburse the Town for the costs of the audit.

Section 14-5-5 Rates

The Licensee shall file with the Town on December 31 of each year a full schedule of all Subscriber and user rates and all other charges including, but not limited to, pay television, lease channel and discrete services, made in connection with the Cable Communications System.

(1) All rates shall be public and on file with the Town.

(2) The Licensee shall not discriminate in the assessment, levy, charge, imposition or collection of rates on the basis of age, race, creed, color, religion, national origin, sex or marital status.

Nothing in this Chapter shall be construed to prohibit the reduction or waiving of charges in conjunction with promotional campaigns for the purpose of attracting Subscribers or users.

ARTICLE 14-6 SERVICE

Section 14-6-1 Extension of Service

Section 14-6-1.1 Line Extension

Licensee shall make equal and uniform service available to all dwelling units within the Town and shall extend its Cable Communications System beyond that which is contemplated under Section 14-2-1 and 14-2-2, as follows:

(1) When requested by a resident of the Town, Licensee shall, at Licensee's sole expense, extend cable service to any residence within the Town, provided that such extension will require no more than 250 linear feet of trench. Such extension shall include cutting in one or more taps and extending feeder cable and, when necessary, trunk cable.

(2) When a resident of the Town requests an extension of service that would require more than 250 linear feet of trench, Licensee shall be required to comply with such request only if the resident agrees to pay to Licensee an amount equal to all incremental costs incurred beyond those for an extension otherwise limited to 250 feet.

(3) Regardless of whether Licensee is requested to extend service, Licensee shall install conduit in open trenches used by electric power and telephone companies in new subdivisions, (please refer to Article 6-4.H of the Town Code) provided that the density of development in any such subdivision is at least 25 homes per mile. Cable and electronic facilities shall be activated as soon as the residences on ten percent of the lots in any such subdivision receive certificates of occupancy.

(4) Absent a showing by Licensee to the Town Manager of circumstances beyond Licensee's reasonable control, any extension of service pursuant to subsections (1) or (2) of this section shall be accomplished within 90 days of the resident's request. Bids from third party contractors or from Licensee's own staff which project above average costs for Licensee's share of the extension shall not, taken alone, be considered a showing of circumstances beyond Licensee's reasonable control.

Section 14-6-1.2 Service Drop

(1) When a serviceable tap is available, Licensee shall make service available to any residence within the Town upon request and at the standard connection charge if the connection requires no more than a 175 foot drop from the new Subscriber's property line at the nearest point to the tap to the Subscriber's residence, one outlet and standard materials and does not involve a wall fish installation (a "Standard Drop").

(2) If making service available requires more than an Standard Drop, Licensee may charge the Subscriber (i) the standard connection charge and (ii) an amount equal to the reasonable actual labor and material costs incurred by Licensee for the additional facilities and work.

(3) Absent a showing by Licensee to the Town Manager of unusual circumstances (such as but not limited to street crossings), any Standard Drop shall be accomplished within ten calendar days of Subscriber's request: a non standard drop shall be accomplished within 15 calendar days of Subscriber's request.

Section 14-6-1.3 Annexed Territory

Except as otherwise provided in the License, newly annexed territory shall be subject to the terms of Section 14-6-1.1 and Section 14-6-1.2.

Section 14-6-2 Subscriber Rights and Consumer Protection

Section 14-6-2.1 Local Business Office

Licensee shall maintain and operate within four miles of the Town, a business office for the purpose of receiving inquiries regarding new service, trading converters, paying bills and receiving complaints.

Section 14-6-2.2 Installation Visits

In arranging appointment for installation visits, Licensee shall specify to the Subscriber in advance, if requested, whether said installation visit will occur in the morning or afternoon. Failure to install cable as scheduled shall require Licensee to automatically offer a priority cable installation visit to the affected Subscriber at a time mutually agreeable to Licensee and said Subscriber, no later than seven days following the initial installation.

Section 14-6-2.3 Telephone Access

(1) Licensee shall have a publicly listed toll-free local telephone number.

(2) Licensee shall add additional telephone lines and customer service representatives when existing telephone lines are "substantially utilized" or when a pattern of Subscriber complaints reflects a need for additional telephone lines and customer service representatives. For purposes of this Section "substantially utilized" shall occur when Licensee demonstrates an inability to answer, with a customer service

representative, and not electronically, 85% of its quarterly incoming service calls including, but not limited to, those dealing with repairs, sales, installation, billing and inquiries, within two minutes of the time that a Subscriber's call to Licensee is placed.

(3) Licensee shall establish a telephone answering capability during non-business hours to answer questions about service calls, service Outages, and provide proper referral regarding billing and other Subscriber information.

Section 14-6-2.4 Subscriber Solicitation Procedures

Licensee shall provide all prospective Subscribers with complete, clear and concise written information, prior to, or at, the time of installation of cable service, concerning all services and rates by Licensee. Such sales materials shall clearly and conspicuously disclose the price and other information concerning Licensee's lowest cost service tier. Such information shall include but not be limited to the following:

(1) all services and rates, deposits if applicable, installation costs, additional television set charges, service upgrade or downgrade charges, relocation of cable outlet charges and any other charges for ancillary cable services;

(2) complete written information concerning billing and collection procedures, procedures for ordering changes in or termination of services, and all refund policies;

(3) complete written information concerning the utilization of video cassette recorders (hereinafter "VCR's") with cable service(s), if requested, including the cost for hooking up such VCR's so that they function as manufactured and any other associated VCR costs or charges;

(4) complete information concerning at-cost parental lockout devices, if requested; and

(5) complete written information concerning Licensee's privacy policies, pursuant to Federal law.

Said information shall be updated annually, if necessary, and provided to all affected Subscribers at least once annually.

Section 14-6-2.5 Billing Practices Information and Procedures

(1) Licensee shall inform all prospective Subscribers of complete information respecting billing and collection procedures, procedures for ordering changes in or termination of services, and refund policies, upon solicitation of service and prior to

the consummation of any agreement for installation of service. Such information shall be provided to Subscribers in easy-to-understand language.

(2) Billing procedures shall be as follows:

(a) Licensee shall bill all Subscribers to its Cable Communications System in a uniform, non-discriminatory manner, regardless of a Subscriber's level of service. In no case shall any Subscriber be required to pay for services in excess of 30 days prior to receipt of such services. Payment shall be due no sooner than the 15th day of each billing period, and the due date shall be listed on each bill. Bills shall be mailed no later than the tenth day of the billing period.

(b) Licensee shall provide all Subscribers with an itemized monthly bill that contains, at a minimum, the following information:

(i) a list of each service or package received for that billing period;
(ii) the rate or charge for each service or package received;
(iii) the period of time over which said services are billed;
(iv) the total charges due for the monthly period, separate from any previous balance due; and
(v) a specific date by which payment is required.

(c) Late charges, if applied, shall in no case exceed amounts allowed by applicable law, and shall in no case be imposed until the 30 day billing period has elapsed.

Section 14-6-2.6 Disconnection And Termination Of Cable Services

Licensee shall only disconnect or terminate a Subscriber's cable for good and just cause. In no event shall Licensee disconnect said cable service for nonpayment without the prior written notification to the affected Subscriber at least seven days prior to such disconnection or termination. In no event shall such disconnection or termination for nonpayment occur in less than 30 days after a Subscriber's failure to pay a bill due.

Section 14-6-2.7 Response To Subscriber Complaints About Service

(1) Calls for repair service received Saturdays, Sundays and holidays shall be scheduled by service technicians according to normal repair service policies, on a first-come, first-served basis.

(2) Licensee shall ensure that there are stand-by technicians on call at all times after normal business hours.

(3) Whenever it is reported that there are three complaints of "no picture" within the same { section, or originating from a single amplifier as addressed in the License, Licensee shall respond immediately. It shall be deemed a Violation if Licensee exceeds a four hour average response time during any consecutive three month period.

(4) Whenever there are fewer than three "no picture" complaints within the same { section, or originating from a single amplifier as addressed in the License, or whenever there are complaints of loss of viewable signal on one or more channels, Licensee shall respond within a reasonable time. It shall be deemed a Violation if Licensee exceeds a 48 hour average response time during any consecutive three month period.

(5) Absent a showing by Licensee to the Town Manager of unusual circumstances, it shall be deemed a violation if Licensee fails to respond within 12 hours to a report of three complaints of "no picture" within the same { section.

(6) Absent a showing by Licensee to the Town Manager of unusual circumstances, it shall be deemed a violation if Licensee fails to respond within four days to an individual complaint of "no picture" or loss of a viewable signal on one or more channels, provided that the affected Subscriber provides Licensee reasonable access to the Subscriber's premises within such four day period.

Section 14-6-2.8 Subscriber's Rights Upon Failure Of Service

(1) In the event that service to any Subscriber is interrupted for 24 or more consecutive hours, Licensee, upon request by the affected Subscriber, shall provide a pro-rata rebate, on a daily basis, of that portion of the service during the next consecutive billing period.

(2) For purposes of computing the time of such interrupted service, said time shall begin when a complaint for interrupted service is received and logged by Licensee. Licensee must log all complaints.

Section 14-6-2.9 Billing and Privacy Complaints

Licensee shall establish a procedure for resolution of Subscriber's billing disputes and complaints, including privacy complaints. Licensee shall provide a complete, written description of said procedures to all Subscribers, and the Town, within four months of the execution of the License pursuant to this section.

Section 14-6-2.10 Damage, Theft, Or Loss Of Equipment

(1) In cases of damaged or stolen (as verified by a police report) equipment in the control of the Subscriber, Licensee may charge Subscribers no more than the actual replacement costs of the equipment and labor.

(2) In all other cases, Licensee may impose a charge for lost or stolen equipment, but in no case greater than three times the reasonable actual cost of the equipment and labor.

Section 14-6-2.11 Change of Service

(1) Upon notification by a Subscriber to disconnect or downgrade a basic or premium service, Licensee shall respond promptly. Licensee shall adjust said Subscriber's monthly service charge, or cease charging said Subscriber on the specified disconnect date, but in no event later than seven days after receipt of the Subscriber's notification, unless Licensee is denied access to Subscriber's premises.

(2) Licensee may charge a fee to a Subscriber downgrading or disconnecting except as set forth in paragraph 3 of this Section.

(3) Licensee shall not charge a fee for disconnection or downgrading if the Subscriber notifies Licensee of such change within 14 days of Subscriber's receipt of a rate increase, unless a service call is required.

Section 14-6-2.12 Signal Quality

Licensee shall comply with all applicable Federal Communications Commission technical standards set forth in 47 CFR < 76.605.

Section 14-6-2.13 Employee Identification Cards

All of Licensee's employees and subcontractor's employees entering upon private property, including construction, repair and sales personnel, shall be required to wear an identification card issued by Licensee or subcontractor and bearing a picture of such person. All of Licensee's vehicles shall be clearly identified as the Licensee's vehicle.

Section 14-6-2.14 Protection Of Subscriber Privacy

(1) Licensee shall respect the rights of privacy of every Subscriber and user of the Cable Communications System and shall not violate such rights through the use of any device or signal associated with the Cable Communications System, and as hereafter provided.

(2) Licensee shall comply with all privacy provisions in this Section and all other applicable Federal, State and local laws including, but not limited to, the provision of Section 631 of the Cable Communications Policy Act of 1984 and Title 18 United States Code Section 2520.

(3) Licensee shall be responsible for carrying out and enforcing the Cable Communications System's privacy policy, and shall at all times maintain adequate physical, technical and administrative security safeguards to ensure that personal Subscriber's information is handled and protected strictly in accordance with this policy.

(4) Licensee shall notify all third parties who offer access cable services in conjunction with Licensee, or independently over the Cable Communications System, of the Subscriber privacy requirements contained in this Section.

Section 14-6-2.15 Privacy Written Notice

Prior to the commencement of cable service to a new Subscriber, and annually thereafter to all Cable Communications System Subscribers, Licensee shall provide a comprehensive and easily understandable written document explaining Licensee's practices regarding the collection, retention, uses, and dissemination of personal Subscriber information, and describing Licensee's policy for the protection of Subscriber privacy.

Section 14-6-2.16 Monitoring

Neither Licensee or its agents nor the Town or its agents shall tap, monitor, arrange for the tapping or monitoring, or permit any other person to tap or monitor, any cable, line, signal, input device or Subscriber outlet or receiver for any purpose, without the prior written authorization of the affected Subscriber or user; provided, however, that Licensee may conduct system-wide or individually addressed "sweeps" solely for the purpose of verifying system integrity, checking for illegal taps, controlling return-path transmission, or billing for pay services. Unless otherwise prohibited by law, Licensee shall report to the affected parties and the Town any instances of monitoring or tapping of the Cable Communications System, or any part thereof, of which it has knowledge, whether or not such activity has been authorized by Licensee. Licensee shall not record or retain any information transmitted between a Subscriber or user and any third party, except as required for lawful business purposes. Licensee shall destroy all Subscribers information of a personal nature after a reasonable period of time except as authorized not to do so by the affected Subscriber.

Section 14-6-2.17 Distribution Of Subscriber Information

Licensee and its agents or employees shall not, except as provided for in Section 631 of the 1984 Cable Communications Policy Act, provide to any third party, including the Town, data identifying or designating any Subscriber either by name or address.

Section 14-6-2.18 Polling By Cable

No poll or other upstream response of a Subscriber or user shall be conducted or obtained unless the program, of which the upstream response is a part, shall contain an explicit disclosure of the nature, purpose and prospective use of the results of the poll or upstream response, unless the program has an entertainment or educational function which is self-evident. Licensee or its agents shall release the results of upstream responses only in the aggregate and without individual references.

Section 14-6-2.19 Information With Respect To Viewing Habits And Subscription Decisions

Licensee or its agents or its employees shall not make available to any third party, including the Town, information concerning the viewing habits or subscription package decisions of any individual Subscriber without obtaining the prior written consent of said Subscriber. If a court authorizes or orders such disclosure, Licensee shall make reasonable efforts to notify the Subscriber not less than 14 calendar days prior to disclosure, unless such notification is otherwise prohibited by applicable law.

Section 14-6-2.20 Subscriber's Rights To Inspect And Verify Information

(1) Licensee shall make available for inspection by a Subscriber at a reasonable time and place all personal Subscriber information that Licensee maintains regarding said Subscriber.

(2) A Subscriber may obtain from Licensee a copy of any or all of the personal Subscriber information regarding him or her maintained by Licensee. Licensee may require a reasonable fee for making said copy.

(3) A Subscriber or user may challenge the accuracy, completeness, retention, use or dissemination of any item of personal Subscriber information. Such challenges and related inquiries about the handling of Subscriber information, shall be directed to the Licensee.

Article 14-7 REMEDIES

Section 14-7-1 Remedies for Violation

Section 14-7-1.1 Performance Deposit[492]

(1) Each applicant for a New License shall file with its application, and maintain in full effect at all times thereafter until the filing of a Final Order of Completion pursuant to Section 14-3-7 of this Chapter, a Letter of Credit acceptable to the Town Manager, cash, or other form of assurance acceptable to the Town Manager placed on deposit with the Town in the amount of at least:
(A) $250,000 OR

(B) 10% of the total estimated cost of construction, whichever is greater.

(2) Upon the issuance of a Final Order of Completion pursuant to Section 14-3-7 of this Chapter, the amount of the Letter of Credit, cash, or other assurance shall be reduced to $25,000.00 and maintained at such an amount at all times thereafter during the term of the License.

(3) Within 30 days of the approval of a Renewal License, Licensee shall file a corporate surety bond issued by a surety licensed by the State of Arizona and approved by the Town Council, or such other assurance approved by the Town Council, in the amount of $25,000.00. Such bond or other assurance shall be maintained at all times thereafter during the term of the License.

Any other outstanding surety bonds or security funds of any kind previously filed by such applicant shall be cancelled.

(4) If Licensee rebuilds or upgrades its facilities in a manner requiring trenching or excavation in the Town's right-of-way, then Licensee shall file and maintain in full effect during the period of construction, a corporate surety bond issued by a surety licensed by the State of Arizona, or such other assurance approved by the Town, in an amount equal to the Licensee's estimate of the total cost of trenching and excavation in excess of $25,000.00.

(5) Any bond required by this Section 14-7-1.1. (2) and (3) and replacements thereof, shall be effective for the entire term of the License and conditioned that in the event the Licensee shall fail to comply with any one or more of the provisions of the License, then there shall be recoverable jointly and severally from the principal and surety of such bond, any damages, delinquent License fees, penalties, compensation and costs of repairing or completing the Cable Communications System and cost of removal or abandonment of property and repair of streets and other public improvements, up to the full amount of the bond; said condition to be a continuing obligation for the duration of the License and thereafter until Licensee has satisfied all of its obligations which may have arisen from the acceptance of the License, or from the exercise of any privileges thereunder. The surety bond shall provide that the obligations of the surety shall not cease for any reason until 30 days after receipt by the Town of written notice of cancellation, or intent not to renew.

(6) Neither the provisions of this Section, nor the terms of any bond accepted by the Town, nor the recovery of any damages under the bond, shall be construed to excuse faithful performance by the Licensee or to limit the liability of the Licensee for damages.

Section 14-7-1.2 Violation by Licensee

(1) Except as provided in Section 14-7-1.5 in the event Licensee should violate any provision of the License, the Town shall promptly give the Licensee written notice of the Violation. The Licensee shall within 30 days of receipt of written notice from the Town:

(a) respond to the Town in writing, contesting the Town's assertion of Violation and providing such information or documentation as may be necessary to support Licensee's position; or

(b) cure any such Violation (and provide written evidence of the same), or, in the event that, by the nature of the Violation, such Violation cannot be cured within

such 30 day period, to take reasonable steps to cure said Violation and diligently continue such efforts until said Violation is cured. Licensee shall report to the Town, in writing, at 30 day intervals as to Licensee's efforts, indicating the steps taken by Licensee' to cure said Violation and reporting Licensee's progress until such Violation is cured.

(2) In the event that Licensee contests the Town's assertion of Violation or fails to respond to the Town's notice of Violation, within 15 days the Town shall convene hearings in strict accordance with the procedures set forth in Section 14-7-1.3.

Section 14-7-1.3 Administrative Hearing

(1) Within 15 days of:

(a) receipt of notice of contest pursuant to Section 14-7-1.2(1)(a), or

(b) expiration of the response time referred to in Section 14-7-1.2(2), or

(c) receipt of notice of contest pursuant to Section 14-7-1.5(4),

an administrative hearing must be conducted by the Town Manager, unless Licensee, in its sole discretion, waives such administrative hearing in writing whereupon a hearing before the Town Council as provided for in Section 14-7-1.4 shall be held. This shall be a public hearing, and Licensee shall be afforded full procedural due process, including, without limitation, an opportunity to be heard and to present evidence. Within 15 days after the conclusion of such hearing, the Town Manager shall issue a determination. In that determination the Town Manager may:

(a) find that Licensee is not in Violation, of the terms of the License;

(b) find that the Licensee is in Violation, but that such Violation was with just cause and waive any penalty that might otherwise be imposed;

(c) find that Licensee is in Violation of the terms of the License, take corrective action and foreclose on all or any appropriate part of the surety provided pursuant to Section 14-7-1.1 to pay the cost thereof;

(d) except as provided in (e) below, find that Licensee is in Violation of the terms of the License and impose a penalty of up to $100.00 per day for each day the Violationcontinues following the cure date as set forth in Section 14-7-1.2;

(e) for those instances specified in subsection 14-7-1.5, find the Licensee is in Violation and impose penalties in such amounts and from the applicable dates as set forth in subsection 14-7-1.5(2) or (3); or

(f) in the case of a material Violation recommend that the Town Council declare the Licensee in Violation and terminate the License, provided that the Town Council may take action on any such recommendation only after a public hearing as set forth in subsection 14-7-1.4.

(2) If the Town Manager determines that Licensee has committed a Violation, the determination shall be accompanied by a detailed statement of reasons for the determination, including findings of fact.

(3) The Town Manager's decision shall become final unless Licensee requests a public hearing before the Town Council within 15 days of its receipt of the Town Manager's statement of reasons and findings of fact.

Section 14-7-1.4 Hearing by Town Council

If a public hearing before the Town Council is requested by Licensee or it held pursuant to Section 14-7-1.3(1)(f) it shall be de novo and it shall convene within 30 days of the request therefore. All witnesses shall be sworn and shall be subject to cross-examination; however, formal rules of evidence shall not apply. The Town Council's decision, which shall include findings of fact and conclusions shall be made not later than 45 calendar days after the conclusion of the hearing. In that decision, the Town Council may:

(1) find that Licensee is not in Violation of the terms of the License;

(2) find that Licensee is in Violation but that such Violation was with just cause and waive any penalty that may otherwise be imposed;

(3) find that Licensee is in Violation of the terms of the License, take corrective action and foreclose on all or any appropriate part of the surety provided pursuant to Section 14-7-1.1 to pay the cost thereof;

(4) except as provided in (5) below find that Licensee is in Violation of the terms of the License and impose a penalty of up to $100.00 per day for each day the Violation continues following the cure date as set forth in Section 14-7-1.2;

(5) for those instances specified in subsection 14-7-1.5, find that the Licensee is in Violation and impose penalties in such amounts and from the applicable dates as set forth in 14-7-1.5(2) or (3); or

(6) in the case of a material Violation of the License declare the Licensee in Violation and terminate the License.

Section 14-7-1.5 Remedies for Customer Service Violations

(1) The provisions of this subsection 14-7-1.5 shall apply only to Violations of subsections 14-6-1.1(4), 14-6-1.2(3) and 14-6-2.7(3),(4),(5) and (6).

(2) Failure to comply with the time limitations set forth in subsection 14-6-1.1(4), 14-6-1.2(3), 14-6-2.7(5) or 14-6-2.7(6) may subject Licensee to penalties for each day of Violation as provided in this subsection. Penalties may accrue at the rate of up to $50.00 per day from the first day of Violation until the earlier of the date the Violation is cured or the date that the Licensee receives the Town Manager's written notice of the Violation; provided that, notwithstanding the foregoing, no more than 14 days of penalties shall accrue prior to the receipt of the Town Manager's written notice of Violation by Licensee. From and after the date that Licensee receives the Town Manager's written notice of Violation, penalties may accrue at the rate of up to $100.00 per day from the date that Licensee received written notice of the Violation until the Violation is cured. Penalties may be imposed only by affirmative action of the Town Manager and shall not automatically accrue in the absence of such affirmative action by the Town Manager. Notwithstanding anything in this section to the contrary, no penalties shall accrue or be payable by Licensee if the Violaton is cured prior to the receipt by Licensee of the Town Manager's written notice of Violation.

(3) Failure to comply with the average response times as set forth in Sections 14-6-2.7(3) and (4) may subject the Licensee to penalties for each month of Violation as provided in this subsection. If the Town Manager determines that Licensee has not complied with the average response time, the Town Manager shall notify Licensee of the Violation, whereupon Licensee shall have until the end of the following calendar month to cure such Violation. If the Violation is not so cured, penalties may be imposed. The penalty shall be $500.00 for the first month after the three month period of Section 14-6-2.7(3) and (4) if the Violation is not cured. The penalty shall be $1,000.00 for the next month and escalate $1,000.00 each month thereafter until the Violation is cured. The penalty is payable on the fifth day of each following month as the penalty accrues. Penalties may be imposed only by affirmative action of the Town Manager and shall not automatically accrue in the absence of such affirmative action by the Town Manager. Notwithstanding anything in this section to the contrary, no penalties shall accrue or be payable by Licensee for any period in excess of 60 days prior to the date of the Town Manager's notice of noncompliance.

(4) In the event that Licensee contests the Town Manager's assertion of Violation, the Town shall convene hearings in strict accordance with the procedures set forth in Section 14-7-1.3.

(5) The penalties in subsections (2) and (3) of this Section shall be adjusted annually at the commencement of each calendar year on the basis of the cumulative increase in the index number (the "CPI") set forth for the Metropolitan Phoenix Consumer Price Index (All Items, 1982-84=100) as published by the Center for Business, College of Business, Arizona State University. Upon adjustment at the beginning of each calendar year, the new penalty amounts shall be set by multiplying the amount of the

most recent penalty amounts by a fraction, the numerator of which is the CPI for the quarter ended just previous to the new calendar year and the denominator of which is the CPI for the quarter ended exactly one year earlier.

Section 14-7-1.6 Alternative Remedies

No provisions of this Chapter shall be deemed to bar the right of the Town or the Licensee to seek or obtain judicial relief otherwise available to it. Neither the existence of other remedies identified in this Chapter nor the exercise thereof shall be deemed to bar or otherwise limit the right of the Town or the Licensee to recover monetary damages or judicial enforcement of the Licensee's or the Town's obligations by means of specific performance, injunctive relief or mandate, or any other judicial remedy at law or in equity.

Section 14-7-1.7 Non-Enforcement

A Licensee shall not be relieved of any obligation to comply with any of the provisions of the License or any rule, regulation, requirement or directive promulgated thereunder by reason of any failure of the Town or its officers, agents or employees to enforce prompt compliance.

Section 14-7-2 Insurance and Liability

(1) Upon the execution of a License, a Licensee shall file with the Town, and maintain in full force and effect throughout the term of the License, insurance policies issued by an insurer duly authorized and licensed to conduct business in the State of Arizona, insuring with respect to the installation, construction, operation and maintenance of the Cable Communications System, comprehensive general and automobile liability coverage, including but not limited to: (1) blanket contractual liability, (2) completed operations liability, (3) broad form property damage endorsement, including but not limited to, coverage for explosion, collapse and underground incidents, and (4) automobile non-ownership liability. The Town expressly reserves the right to modify any insurance and liability requirements when it deems such action necessary to protect the public interest and welfare.

(2) This insurance shall include coverage which meets or exceeds the following minimum amounts; which minimums may be increased by the Town from time to time to compensate for inflation or exposure to loss:

(a) for bodily injury, including death, in the amount of $1,000,000 combined single limit;

(b) for property damage in the minimum amount of $500,000;

(c) comprehensive automobile liability for bodily injury of $1,000,000 combined single limit;

(d) excess umbrella liability in the amount of $4,000,000 in excess of underlying coverage; and

(e) worker's compensation coverage as required by the laws, rules and regulations of the State of Arizona.

(3) Any insurance policy obtained by Licensee in compliance with this Section shall include the Town as an additional insured, shall be primary, and must be approved by the Town Risk Manager and Town Attorney. Such insurance policy shall be filed and maintained with the Town during the term of the License, and may be changed from time to time to reflect changing liability limits. Licensee shall immediately advise the Town of any litigation that may develop that would affect this insurance or reduce the amount of coverage. Any insurance or self-insured coverage carried by the Town shall be excess coverage and not contributory insurance to that provided by a Licensee.

(4) Neither the provisions of this Section nor any damages recovered by the Town thereunder shall be construed to limit the liability of Licensee to the Town for damages.

(5) All insurance policies shall contain the following endorsement:

> "This insurance policy may not be cancelled by the insurance carrier, nor may the insurance carrier fail to renew this policy until thirty (30) days after receipt by the Town of the insurance carrier's written notice of its intention."

(6) Licensee shall be solely responsible for all premiums due and payable with respect to the insurance coverage required.

(7) All deductible amounts applicable to liability insurance coverage must be approved by the Town.

(8) Licensee may self-insure the above-described policy coverages if Licensee or its parent are of sufficient financial standing to reasonably provide such insurance. A Licensee that elects to self-insure shall file with the Town a Certificate of Insurance as specified by the Town.

Section 14-7-3 Indemnification by Licensee

(1) Each Licensee shall, at its sole expense, fully indemnify, defend and hold harmless the Town, and in their capacity as such,the officers, agents and employees thereof, for, from and against any and all claims, suits, actions, liability and judgments for damages or otherwise:

(a) for actual or alleged injury to persons or property, including loss of use of property due to an occurrence, whether or not such property is physically damaged or destroyed, in any way arising out of or through or alleged to arise out of or through the acts or omissions of the Licensee or its officers, agents, employees, or contractors;

(b) arising out of or alleged to arise out of any claim for damages for invasion of the right of privacy, defamation of any person, firm or corporation, or the violation or infringement of any copyright, trade mark, trade name, service make or patent attributable to the acts or omissions of Licensee or its officers, agents, employees or contractors; and

(c) arising out of or alleged to arise out of Licensee's failure to comply with the provisions of any statute, regulation or chapter of the United States, State of Arizona or any local agency applicable to the Licensee in its business.

Nothing herein shall be deemed to prevent the Town from participating in the defense of any litigation by its own counsel at the Licensee's sole expense. Such participation shall not under any circumstances relieve the Licensee from its duty of defense against liability or of paying any judgment entered against such party.

ARTICLE 14-8 MISCELLANEOUS

Section 14-8-1 Communications With Regulatory Agencies

(1) Upon request, there shall be provided to the Town copies of any communications and reports submitted by a Licensee to the Federal Communications Commission or any other Federal or State regulatory commission or agency having jurisdiction in respect to any matters affecting construction or operation of a Cable Communications System or services provided through such a System.

(2) Licensee shall provide the Town with regular reports, as needed, to establish Licensee's compliance with the various standards and other provisions of this Chapter.

Section 14-8-2 Separability

If any section, subsection, sentence, clause, phrase, or portion of this Chapter is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions hereof.

Section 14-8-3 Ordinances Repealed

All ordinances or parts of ordinances in conflict with the provisions of this Chapter are hereby repealed.

FOOTNOTES

50 Ordinance #95 - 2/13/75 (Repealed 3/22/90 By Ordinance #309)
184 Ordinance #309 - 3/22/90
492 Ordinance #492 – 1/13/00
600 Ordinance #600 – 12/20/2007

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In this chapter, unless the context otherwise requires, the following definitions shall apply:

Section 15-1-1 Approved Laboratory Procedures

The measurements, tests and analysis of the characteristics of water and wastes in accordance with analytical procedures determined acceptable by Federal Guidelines as established in Title 40, Code of Federal Regulations, Part 136, or as approved by the Regional Administrator, U.S. Environmental Protection Agency.

Section 15-1-2 Average Daily Flow Average Quality

The arithmetic average (weighed by flow value) of all the "daily determinations of concentration", as that term is defined herein, made during a calendar month.

Section 15-1-3 B.O.D. (Biochemical Oxygen Demand)

The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory conditions for five (5) days at a temperature of twenty degrees (20°) centigrade, reported in milligrams per litre.

Section 15-1-4 Branch Sewer

An arbitrary term for a sewer which receives sewage from lateral sewers from a relatively small area.

Section 15-1-5 Building Connection or Sewer Tap

The connection to the public sewer and the extension therefrom of the sewer to the property line in an alley or street, or to the easement line in an easement, whichever is applicable, depending on the location of the public sewer.

Section 15-1-6 Building Official

The Director of Building Inspection, or his authorized representative.

Section 15-1-7 Building Sewer

The extension from the building drain to the building connection or other place of disposal.

Section 15-1-8 C.O.D. (Chemical Oxygen Demand)

The quantity of oxygen consumed from a chemical oxidation of inorganic (and organic matter present in the wastewater, expressed in milligrams
per litre.

Section 15-1-9 Combined Sewer

A sewer receiving both surface runoff and sewage.

Section 15-1-10 Cooling Water

The clean wastewater discharged from any heat transfer system such as condensation, air conditioning, cooling or refrigeration.

Section 15-1-10(1) Cost [141]

Shall include the actual expenses incurred for:

1. Construction of the facilities as determined by the construction contract price.

2. Five percent administrative charge paid to the Town by the developer/owner.

3. Inspection and permit fees paid to the Town.

4. Engineering fees required for the preparation of plans and specifications.

Section 15-1-11 Daily Composite Sample

A sample of effluent continuously collected over a normal operating day.

Section 15-1-12 Daily Composite Sample Quality

The concentration of some parameter tested in a "daily composite sample", as that term is defined herein, and reported proportional to flow.

Section 15-1-13 Daily Determination of Concentration

For composite samples, "daily determination of concentration" shall be the same as "daily composite sample quality", as that term is defined herein. For grab samples, the "daily determination of concentration" shall be the arithmetic average (weighted by flow value) of all "grab sample qualities", as that term is defined herein, determined for any calendar day.

Section 15-1-14 Developer

Any person engaged in the organizing and financing of a sewage collecting system contributing to a branch, main, or trunk sewer of the Town sewer system. Such may be any entity which is responsible for creating a demand on the Town's sewer system.

Section 15-1-15 Discharge

The disposal of sewage, water, or any liquid from any sewer user into the sewerage system.

Section 15-1-16 Establishment, Plant

Any establishment or plant producing liquid waste, with or without suspended solids, required to be discharged into the Town sewer system.

Section 15-1-17 Garbage

Solid wastes from the preparation, cooking, and dispensing of food and from the handling, storage, and sale of produce.

Section 15-1-18 Grab Sample

An individual sample of effluent collected in less than fifteen (15) minutes.

Section 15-1-19 Grab Sample Quality

The concentration of some parameter tested in a grab sample, as that term is defined herein.

Section 15-1-20 Inflow

Water other than wastewater that enters a sewerage system (including sewer service connections) from sources such as roof leaders, cellar drains, foundation drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters or drainage.

Section 15-1-21 Interference

Any inhibition or disruption of the sewage works, treatment processes or operations which contributes to a violation of any requirement of a National Pollutant Discharge Elimination System permit pursuant to Section 307(b) and (c) of the Federal Water Pollution Control Act as amended by the Clean Water Act of 1977.

Section 15-1-22 Lateral Sewer

A sewer which discharges into a branch or other sewer and has no other common sewer tributary to it.

Section 15-1-22(1) Line Payback Charge [141]

The amount of money a developer or owner must pay to the Town for his share of previously installed sewer mains benefiting his parcel.

Section 15-1-23 Main Sewer

A sewer which receives sewage from one or more branch sewers as tributaries.

Section 15-1-24 Maintenance

Keeping the treatment works in a state of repair, including expenditures necessary to maintain the capacity (capability) for which said works were designed and constructed.

Section 15-1-25 Natural Outlet

Any outlet into a watercourse, ditch, or any body of surface or groundwater.

Section 15-1-26 Normal Sewage

Sewage or wastewater that (a) has a five (5) day biochemical oxygen demand less than 300 milligrams per litre by weight; (b) contains less than 350 milligrams per litre by weight of suspended solids, and (c) does not contain a nonpermissible quantity of the type waters and wastes described in Section 15-2-11.

Section 15-1-27 pH

The logarithm of the reciprocal of the weight of hydrogen ions in grams per litre of solution.

Section 15-1-28 Producer

Any person, firm association, corporation, or trust which owns, operates possesses, or controls an establishment or plant, whether or not an industrial wastewater discharge permitee.

Section 15-1-29 Properly Shredded Garbage

Garbage that has been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-fourth (¼") inch in any dimension.

Section 15-1-30 Public Sewer

A lateral, branch, main, or trunk sewer controlled and maintained by the Town of Paradise Valley.

Section 15-1-31 Replacement

Those expenditures made for obtaining and installing equipment, accessories, and/or appurtenances during the useful life of the treatment works, which are necessary to maintain the capacity and performance of the treatment works for which they were designed and constructed.

Section 15-1-32 Sanitary Sewer

A sewer which carries sewage and to which storm, surface and groundwaters are not intentionally admitted.

Section 15-1-33 Sewage

A combination of water-carried wastes from residences, business buildings, institutions, and industrial establishments, together with such ground, surface, and storm waters as may be present.

Section 15-1-34 Sewage Treatment Plant

Any arrangement of devices and structures used for treating sewage.

Section 15-1-35 Sewage Works

All facilities for collecting, pumping, treating and disposing of sewage.

Section 15-1-36 Sewer

A pipe or conduit for carrying sewage.

Section 15-1-37 Sewer Tap

See "Building Connection."

Section 15-1-38 Significant User

An industrial user who contributes greater than ten (10%) percent of the design flows or designs pollutant loading of the treatment works.

Section 15-1-39 Standard Methods

The procedure as described in the most current edition of Standard Methods for the Examination of Water and Wastewater published by the American Health Association, or the most current edition of Manual of Methods for Chemical Analysis of Water and Wastes published by the U.S. Environmental Protection Agency.

Section 15-1-40 Storm Sewer or Storm Drain

A sewer which carries storm and surface waters and drainage, but excludes sewage and polluted industrial wastes.

Section 15-1-41 Suspended Solids (SS)

Solids measured in milligrams per litre that either float on the surface of or are in suspension in water, wastewater, or other liquids and which are largely removable by a laboratory filtration device, as defined in the "Standard Methods" as defined herein.

Section 15-1-42 System Design Capacity

The design capacity for normal domestic wastewater as established by accepted engineering standards.

Section 15-1-43 Total Organic Carbon (TOC)

The total of all organic compounds expressed in milligrams per litre as determined by the combustion infrared method prescribed by approved laboratory procedures.

Section 15-1-44 Town

Town of Paradise Valley.

Section 15-1-45 Treatment Parameter

A fundamental characteristic of sewage around which treatment is designed, such as, but not limited to, flow, B.O.D. suspended solids, and phosphorus.

Section 15-1-46 Trunk Sewer

A sewer which receives sewage from many tributary main sewers and serves as an outlet for a large territory.

Section 15-1-47 User

Any person, lot, parcel of land, building, premises, municipal corporation, or other political subdivision that discharges, causes, or permits the discharge of wastewater into the Town sewerage system.

Section 15-1-48 Watercourse

A channel in which a flow of water occurs, either continuously or intermittently.

Article 15-2 SANITARY SEWERS; DESIGN, CONSTRUCTION, INSPECTION AND USAGE

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Section 15-2-1 Design, Construction and Inspection

A. The Town shall approve the design, issue permits, and conduct inspections of sewer facilities that are to be connected to the existing sanitary sewer system.

B. The design and construction of all sanitary sewers under the jurisdiction of the Town must conform to the standard sewer design and construction specifications as identified in the Maricopa Association of Governments Specifications, Standard Details, and the Arizona State Health Services Bulletin No. 11.

C. All sewers to be attached directly or indirectly to a Town Sewer shall be inspected by personnel of the Town during construction. At least forty-eight (48) hours prior to cutting into the Town sewer, the Town shall be notified. In making a connection to a Town sewer, no physical alteration of the Town's facilities shall commence until an inspector is present. No wastewater shall be discharged into any sewage facility tributary to a Town facility prior to obtaining inspections and approval of sewage construction by the Town.

D. Following satisfactory completion of construction, the Town will issue a construction inspection certificate upon request.

Section 15-2-2 Connection to Public Sewer [478]

When a public sanitary sewer with existing capacity is available, the building sewer may be connected to a public sanitary sewer subject to compliance with all requirements of the Town of Paradise Valley.

Section 15-2-3 Connection to Private Sewage System

Where a public sanitary sewer is not available within the Town, or in any area under the jurisdiction of the Town, the building sewer shall be connected to a private sewage disposal system complying with all laws and regulations of the State of Arizona, the County of Maricopa and the Town. Such private sewage disposal system shall be constructed, maintained, and operated at all times in a sanitary manner. Construction, alterations and maintenance shall be performed in conformance with the County Health Code and other applicable regulations and only after obtaining a permit.

Section 15-2-4 Ownership of Public Sewer Lines and Related Equipment

The ownership of all public sewer lines, pumping stations, treatment facilities, and equipment and other appurtenances to the sewer system maintained, or accepted for maintenance, by the Town shall be vested in the Town and in no case shall the owner of any premises have the right to claim any part except where otherwise provided in this Chapter.

Section 15-2-5 Permits Required

A. No person, corporation or firm shall dig up or cause to be dug up, any street or alley or right-of-way under the jurisdiction of the Town for the purpose of connecting with the sewer system of the Town without first obtaining a permit from the Town Engineer, nor shall any such person having a permit dig up any portion of a street, alley or right-of-way under the jurisdiction of the Town for the purpose of connecting with the sewer system of the Town, and fail or neglect to restore the street or alley or right-of-way to its original condition.

B. No person, corporation or firm shall uncover, make any connections with or opening into, use, alter, or disturb any public sewer or appurtenances thereof without first obtaining a permit from the Town Engineer.

Section 15-2-6 Public Sewer Extensions in New Subdivisions

In new subdivisions where public sewer extensions are authorized by the Town Engineer and constructed at the subdivider's expense, the Town Engineer may authorize the subdivider or his agent, to install building connections with wyes and connect the building sewers to the building connection under the following provisions:

1. The construction of the public sewer, building connections, and connections of the building sewers to the building connection shall be under the supervision of a registered civil engineer holding registration in the State, who shall submit "as built plans" bearing the registered civil engineer's registration number and seal, to the Town Engineer. The registered civil engineer employed by the subdivider shall require that all building connections, serving lots in the subdivision upon which no buildings are constructed, be effectively sealed until such time as buildings are to be constructed on the lots left vacant. Such sealed connections shall be inspected and approved by the Town Engineer before being backfilled and shall be designated as the "as built plans". The effective seal shall consist of a vitrified clay stopper, inserted in the bell of the sewer extending to the property line in the alley or to the curb line in the street from the public sewer. The stopper shall be permanently flagged by attaching one end of a length of copper wire to the stopper and the other to a broken piece of clay pipe, which shall be placed under the soil surface directly over the end of sewer pipe.

2. Before any sewer construction is commenced, permits shall be obtained by the subdivider or his agent, from the Town Engineer.

3. When the "as built plans" are submitted to the Town, the Town Engineer shall make a record of the building construction.

Section 15-2-7 Approval of Public Sewer Extension

No public sewer extensions shall be made until the plans and specifications are approved by the Town Engineer.

Section 15-2-8 Record of Building Connections

The Town shall keep or cause to be kept, a record of all building connections which are made, the purpose for which they are to be used, together with the name of the owner or occupier or user or their agents or representatives.

Section 15-2-9 Property Owner Responsible for Cleaning, Repair and Replacement of Building Sewers and Connections [690]

A. The property owner shall be responsible for the cleaning, unstopping, maintenance and repair of the building, house sewer, sewer tap, lateral line, conveyance lines, lift pumps, septic tanks, alternate wastewater treatment system, or connection piping serving his property from his home or building to the public sewer main. Whenever the damage requires off-property excavation, the property owner shall obtain a right-of-way or encroachment permit to work in the public right-of-way

B. When the repairs to a sewer connection are required under a sidewalk, curb or gutter, the sidewalk, curb or gutter shall be square cut to avoid unnecessary damage. After completion, the excavation shall be backfilled and compacted to grade and repaired to the most current standards set by the Town of Paradise Valley Public Works Department.

C. If the location of the sewer problem is determined to be in the Town's main line, the Town will initiate the appropriate repair action.

Section 15-2-10 Application for Building Connection

Each person making application for a building connection shall present a valid plumbing permit issued by the Town Building Official, or his authorized representative, to the Town Engineer as a prerequisite for the approval of the required building connection. All applications for building connections to be constructed by the Public Works Department shall be accompanied by the current fee for such work.

Section 15-2-11 Authority of Town Engineer: Establish Permissible Limits, Approve Waste Discharges, Impose Charges

A. The Town Engineer shall have the authority to regulate the volume and flow rate of discharge to the sewage works, and to establish permissible limits of concentration for various specific substances, materials, waters, or wastes that can be accepted into the sewage works, and to specify those substances, materials, waters, or wastes that are prohibited from entering the sewage works.

B. The Town Engineer shall review and approve the admission into the public sewers of any water or wastes having:

1. A five (5) day biochemical oxygen demand greater than 300 milligrams per liter by weight; or

2. Containing more than 350 milligrams per litre by weight suspended solids; or

3. Containing any quantity of substance having the characteristics described in Section 15-2-11; or

4. Having an average daily flow of greater than 2% of the average daily flow in the Town.

C. The Town Engineer shall impose charges on any user of the Town's sewage works who discharges wastes having a strength greater than normal sewage or containing nonpermissible quantities or prohibited substances into the public sewer system. The charges so imposed shall be based on the extra costs incurred by the Town in surveillance, sampling, and testing of the discharges, for additional operating and maintenance expenses, or for any other action required to identify, handle, process, or supplement normal activities due to the unauthorized discharge of excessive strength or unusual character wastes, plus overhead charges. Failure by a user so charged to pay the charges and to provide such corrective measures as may be required to prevent further unauthorized discharges, after due notice by the Town and being given a reasonable time to comply, shall be sufficient cause to discontinue sewer service to the premises.

Section 15-2-12 Prohibited Substances

A. No person shall discharge or cause to be discharged, any new sources of inflow, including, but not limited to, storm water, surface water, ground water, roof runoff, subsurface drainage, cooling water, pool water, or unpolluted industrial process waters into any sanitary sewer.

B. Except as provided in this Chapter, no person shall discharge or cause to be discharged, any of the following described waters into any public sewer:

1. Any liquid or vapor having a temperature higher than one hundred fifty degrees (150°) Fahrenheit.

2. Any water or waste which may contain more than one hundred (100) parts per million by weight of fat, oil or grease.

3. Any gasoline, benzene, naphtha, fuel, or other flammable or explosive liquid, solid or gas.

4. Any garbage that has not been properly shredded.

5. Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure, grits such as brick, cement, onyx, carbide, or any other solid or viscous substance capable of causing obstruction to the flow in sewers or other interference with the proper operation of sewage works.

6. Any waters or wastes having a pH lower than five (5) or higher than nine and one-half (9½) or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the sewage works.

7. Any waters or wastes containing a toxic, radioactive, or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process, constitute a hazard to humans or create any hazard in the receiving waters of the sewage treatment plant.

8. Any water or wastes containing dissolved or suspended solids of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant.

9. Any noxious or malodorous gas or substance capable of creating a public nuisance.

10. Any pollutant releases, (including demanding pollutants i.e. B.O.D., etc.) in a discharge of such volume or strength as to cause interference in the sewage works.

Section 15-2-13 Preliminary Treatment; Required Approval

Whenever objectionable and prohibited substances exist in the characteristics of a user's wastewater, the owner shall provide at his expense, such preliminary treatment as may be necessary to,

1. Reduce the B.O.D. to 300 mg/1 and the suspended solids to 350 mg/1 by weight; or

2. Reduce objectionable characteristics or constituents to within the maximum limits provided for in Sections 15-2-11 and 15-2-12; or

3. Control the quantities and rates of discharge of such waters or wastes. Plans, specifications, and any other pertinent information shall be submitted for the approval of the Town Engineer. No construction of such facilities shall be commenced until the Engineer's approval is obtained in writing. The completed facilities shall not be placed in service until they have been inspected for conformance to the approved plans and the final construction approved by the Town Engineer. The Town will enforce Federal pretreatment requirements as set forth in Title 40, Code of Federal Regulations, Part 403.

Section 15-2-14 Preliminary Treatment; Maintenance of Facilities

Where preliminary treatment facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense.

Section 15-2-15 Interceptors; Required

Grease, oil and sand interceptors shall be provided when, in the opinion of the Town Engineer, they are necessary for the proper handling of liquid wastes containing grease or oil in excessive amounts or any flammable wastes, sand, and other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units.

Section 15-2-16 Interceptors; Type; Capacity; Location

All interceptors shall be of a type and capacity approved by the Town Engineer and shall be located as to be readily and easily accessible for cleaning and inspection.

Section 15-2-17 Interceptors; Construction of Grease and Oil Interceptors

Grease and oil interceptors shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction, water-tight, and equipped with easily removable covers. When bolted covers are required they shall be gas-tight and water-tight.

Section 15-2-18 Interceptors; Maintenance

Where installed, all grease, oil and sand interceptors shall be maintained by the owner, at his expense, in continuously efficient operation at all times.

Section 15-2-19 Discharges To Be Reported

Every user of the Town sewage works shall report to the Town Engineer immediately any accident, negligent act, or other occurrence that occasions a discharge to the public sewer of any wastes or process waters that exceed the permissible limits for such wastes established by the Town Engineer.

Section 15-2-20 Sanitary Sewer; Outside of Town

Any user located outside of the Town limits of the Town of Paradise Valley who discharges wastewater into a sanitary sewer owned or operated by the Town of Paradise Valley, shall be bound by the requirements of this Ordinance. Users found in noncompliance shall be subject to the provisions stated in Section 15-2-11 of this Chapter.

Section 15-2-21 Appeals [187]

Any person who is aggrieved by the terms of Chapter 15 and who has been directly affected by the application of any term of Chapter 15 may appeal to the Town Manager for relief. The appellant must demonstrate by clear and convincing evidence that the application of any term or terms of Chapter 15 imposes an unfair burden on the appellant. It may be considered an unfair burden if the term or terms of Chapter 15 as applied to the appellant cost the appellant a significantly greater fee or expense compared to other users similarly situated. The Town Manager shall hold an appeal hearing within 30 days after the appellant files a written request and shall announce his decision no later than 30 days after the hearing. The hearing shall be informal.

Section 15-2-22 Use of Effluent [195]

All effluent generated in the Town of Paradise Valley or which is derived from wastewater originating in the Town of Paradise Valley shall be used or disposed of in such manner as the Town Council shall determine by individual measure.

Article 15-3 WASTEWATER DEVELOPMENT FEES[675]

15-3-1. - Title.

This Article shall be known as the "Wastewater Development Fees Ordinance of the Town of Paradise Valley," and may be cited as such.

15-3-2. - Legislative intent and purpose.

This Article is adopted for the purpose of promoting the health, safety and general welfare of the residents of the Town by:

A. Requiring new development to pay its proportionate share of the costs incurred by the Town that are associated with providing Necessary Public Services to new development.

B. Setting forth standards and procedures for creating and assessing Development Fees consistent with the requirements of Arizona Revised Statutes ("A.R.S.") § 9-463.05, including requirements pursuant to A.R.S. § 9-463.05, Subsection K that, on or before August 1, 2014, the Town must replace its Development Fees that were adopted prior to January 1, 2012 with Development Fees adopted pursuant to the requirements of A.R.S. § 9-463.05 as amended by the state legislature in SB 1525, Fiftieth Legislature, First Regular Session.

C. Providing for the temporary continuation of certain Development Fees adopted prior to January 1, 2012 until otherwise replaced pursuant to this Article, or longer where such Development Fees were pledged to support Financing or Debt for a Grandfathered Facility as permitted by A.R.S. § 9-463.05, Subsections K, R, and S.

D. Setting forth procedures for administering the Development Fee program, including mandatory offsets, Credits, and refunds of Development Fees. All Development Fee assessments, offsets, Credits, or refunds must be administered in accordance with the provisions of this Article.

This Article shall not affect the Town's zoning authority or its authority to adopt or amend its General Plan, provided that planning and zoning activities by the Town may require amendments to Development Fees as provided in Section 15-3-10 of this Article.

15-3-3. - Definitions.

When used in this Article, the terms listed below shall have the following meanings unless the context requires otherwise. Singular terms shall include their plural.

Applicant: A person who applies to the Town for a Building Permit or submits a site plan or subdivision plat.

Appurtenance: Any fixed machinery or equipment, structure or other fixture, including integrated hardware, software or other components, associated with a Capital Facility that are necessary or convenient to the operation, use, or maintenance of a Capital Facility, excluding replacement of the same after initial development of the Capital Facility, but only as to those appurtenances, or portions of those appurtenances, which provide service to existing EDUs.

Building Permit: Any permit issued by the Town that authorizes vertical construction, increases square footage, authorizes changes to land use, or provides for the addition of a residential or non-residential point of demand to the water, water supply, or wastewater system.

Capital Facility: An asset having a Useful Life of three (3) or more years that is a component of Wastewater Service provided by the Town. A Capital Facility may include any associated purchase of real property, architectural and engineering services leading to the design and construction of buildings and facilities, improvements to existing facilities, improvements to or expansions of existing facilities, and associated financing and professional services. Wherever used herein, "infrastructure" shall have the same meaning as "Capital Facilities."

Category of Development: A specific category of development within a Residential, Special Use, or Supplemental land use district against which a Development Fee is calculated and assessed based on a recommended water meter type where a Detached Single-Family Dwelling Unit is one (1) EDU, while the EDU factor for a unit of development within another Category of Development is represented by the ratio of the demand for Wastewater Services typically generated by that unit as compared to the demand for such services typically generated by a Detached Single-Family Dwelling Unit. The Town assesses Development Fees against the various recommended types of water meters for various Categories of Development within the Residential, Special Use, or Supplemental land use districts as defined in this Section.

Credit: A reduction in an assessed Development Fee resulting from developer contributions to, payments for, construction of, or dedications for capital facilities included in an Infrastructure Improvements Plan pursuant to Section 15-3-13 of this Article (or as otherwise permitted by this Article).

Credit Agreement: A written agreement between the Town and the developer(s) of a Subject Development that allocates Credits to the Subject Development pursuant to Section 15-3-13 of this Article. A Credit Agreement may be included as part of a Development Agreement pursuant to Section 15-3-14 of this Article.

Credit Allocation: A term used to describe when Credits are distributed to a particular development or parcel of land after execution of a Credit Agreement, but are not yet issued.

Credit Issuance: A term used to describe when the amount of an assessed Development Fee attributable to a particular development or parcel of land is reduced by applying a Credit allocation.

Development: Any property which is proposed to be improved that creates a demand for Town wastewater service.

Developer: An individual, group of individuals, partnership, corporation, limited liability company, association, municipal corporation, state agency, or other person or entity undertaking land development activity, and their respective successors and assigns.

Development Agreement: An agreement prepared in accordance with the requirements of A.R.S. § 9-500.05.

Direct Benefit: A benefit to an EDU resulting from a Capital Facility that: (a) addresses the need for wastewater services created in whole or in part by the EDU; and that (b) meets either of the following criteria: (i) the Capital Facility is located in the service area of the EDU and is needed in the service area of the EDU to maintain the Level of Service; or (ii) the Capital Facility substitutes for, or eliminates the need for a Capital Facility that otherwise would have been needed in the service area of the EDU to maintain the Town's Level of Service.

Dwelling Unit: A house, group of rooms, or single room occupied as separate living quarters or, if vacant, intended for occupancy as separate living quarters.

Equipment: Machinery, tools, materials, and other supplies, not including vehicles, that are needed by a Capital Facility to provide the Level of Service specified by the Infrastructure Improvements Plan, excluding replacement of the same after initial development of the Capital Facility, but only as to that equipment, or portion of that equipment, which provides service to existing EDUs.

Equivalent Demand Unit (EDU): A unit of development within a particular Category of Development, defined in terms of a standardized measure of the demand that a unit of development in that Category of Development generates for Wastewater Services. The EDU, or number of EDUs, in the Town for Wastewater Services is based on the type of applicable water meter required for a particular category of development in relation to the demand generated by a Detached Single-Family Dwelling Unit. For all Wastewater Services, the EDU factor for a Detached Single-Family Dwelling Unit is one (1), while the EDU factor for a unit of development within another Category of Development is represented as a ratio of the demand for Wastewater Services typically generated by that unit as compared to the demand for such services typically generated by a Detached Single-Family Dwelling Unit. An EDU shall be a "service unit" for purposes of A.R.S. § 9-463.05(T) (10). The 1" meter is the minimum type of meter for a Single-Family Dwelling Unit with a base flow of ten (10) gpm.

Existing Capacity: Recognizing that portions of the existing capacity of the Wastewater systems have capacity available to provide service to new development, the

Development Fees shall recover the cost per EDU for that existing capacity. Service provided to new development shall be at the same level of service provided to existing development. The cost of existing capacity providing service to new development may include any of the costs defined herein for a Capital Facility or for Facility Expansion, as the circumstances may dictate.

Facility Expansion: The expansion of the capacity of an existing facility that serves the same function as an otherwise new Wastewater Service facility in order that the existing facility may serve new development. Facility expansion does not include the repair, maintenance, modernization, or expansion of an existing facility to better serve existing development.

Fee Report: A written report developed pursuant to Section 15-3-5 of this Article that identifies the methodology for calculating the amount of each Development Fee, explains the relationship between the Development Fee to be assessed and the System Average Cost per EDU calculated in the Infrastructure Improvements Plan, and which meets other requirements set forth in A.R.S. § 9-463.05.

Financing or Debt: Any debt, bond, note, loan, interfund loan, fund transfer or other debt service obligation used to finance the development or expansion of a Capital Facility.

Final Approval: Means (a) for a Special Use or nonresidential development, the approval of a site plan or, if no site plan is submitted for the development, the approval of a final subdivision plat, or if neither of these are applicable, the approval of a special use permit or final plans; or (b) for a single-family residential development, the approval of a final subdivision plat.

Grandfathered Facilities: Capital Facilities provided through Financing or Debt incurred before June 1, 2011 for which a Development Fee has been Pledged towards repayment as described in Section 15-3-5 of this Article.

General Plan: Refers to the comprehensive plan, or part thereof, and all amendments, providing for the future growth and development of the Town, the overall land-use plan for the Town establishing areas of the Town for different purposes, zones and activities adopted by the Town Council and any subsequent amendments to the General Plan, including but not limited to the updated Land Use Map.

Gpm: Means gallons per minute.

Gross Development Fee: The total Development Fee to be assessed against a Subject Development on a per EDU basis, before subtraction of any Credits.

Infrastructure Improvements Plan: A written plan that identifies each Wastewater service or facility expansion that is proposed to be the subject of a Development Fee and otherwise complies with the requirements of Section 15-3-9, and may be the Town's capital improvement plan.

Interim Fee Schedule: Any Development Fee schedule established before January 1, 2012 in accordance with then-applicable law, and which shall expire not later than August 1, 2014 pursuant to Section 15-3-12 of this Article.

Land Use Assumptions: Projections of changes in land uses, densities, intensities and population for a Service Area over a period of at least ten (10) years and pursuant to the Town's general plan as specified in Section 15-3-8 of this Article.

Level of Service: A quantitative and/or qualitative measure of Wastewater Services that is to be provided by the Town to development in the Service Area, defined in terms of the relationship between service capacity and service demand and accessibility, comfort and convenience, or other similar measures or combinations of measures. Level of Service may be measured differently for different Categories of Wastewater Services, as identified in the Infrastructure Improvements Plan.

Local Collection System: Wastewater collection facilities which are not included in the Wastewater Infrastructure Improvement Plan as may be amended from time to time and are strictly internal to the development itself.

Local Distribution System: Wastewater distribution facilities which are not included in the Wastewater Infrastructure Improvement Plan as may be amended from time to time and are strictly internal to the development itself.

Necessary Public Services: "Necessary Public Services" shall have the meaning prescribed in A.R.S. § 9-463.05(T)(5), but includes within the Town of Paradise Valley only Wastewater Service.

Offset: An amount which is subtracted from the overall capital costs of providing Wastewater Services to account for those capital components of infrastructure or associated debt that have been or will be paid for by a development through taxes, fees (except for Development Fees), and other revenue sources, as determined by the Town pursuant to Section 15-3-9(A)(13) of this Article.

Pledged: Where used with reference to a Development Fee, a Development Fee shall be considered "pledged" where it was identified by the Town as a source of payment or repayment for Financing or Debt that was identified as the source of financing for Wastewater Services for which a Development Fee was assessed pursuant to the then-applicable provisions of A.R.S. § 9-463.05.

Qualified Professional: Any one of the following: (a) a professional engineer, surveyor, financial analyst or planner, or other licensed professional providing services within the scope of that person's education or experience related to Town planning, zoning, or Development Fees and holding a license issued by an agency or political subdivision of the State of Arizona; (b) a financial analyst, planner, or other non-licensed professional that is providing services within the scope of the person's education or experience related to Town planning, zoning, or Development Fees; or (c) any other person operating under the supervision of one (1) or more of the above.

Residential Land Use: Those residential land uses identified in the Zoning Ordinance of the Town of Paradise Valley as Single-family residential and classified as R-175 Single-Family Residential District, R-43 Single-Family Residential District, R-43 CP Single-Family Residential District, R-35 Single-Family Residential District, R-35 CP Single-Family Residential District, R-35A Single-Family Residential District, R-18 Single-Family Residential District, R-18A Single-Family Residential District, R-10 Single-Family Residential District, and SUP District R-18 CP.

Right-of-Way: Land which by deed, conveyance, agreement, easement, dedication, usage, or process of law is reserved for or dedicated to the general public for street, highway, alley, public utility, or pedestrian walkway purposes.

Service Area: The area within the boundaries of the Town within which the Town provides a Category of Wastewater Services to development at a planned Level of Service; and within which a Substantial Nexus exists between the Capital Facilities to be provided and the development to be served. Some or all of the Capital Facilities providing service to a Service Area may be physically located outside of the Service Area provided that the required Substantial Nexus or Direct Benefit is demonstrated to exist.

Service Unit: A standardized measure of consumption, use, generation, or discharge attributable to an individual unit of development calculated pursuant to generally accepted engineering or planning standards for Wastewater Services or facility expansion. As used herein, a service unit is the same as an Equivalent Demand Unit (EDU).

Single Family Residential means one (1) dwelling unit is serviced by a single water meter in which only a single family typically resides and is connected to a sewer or septic system.

Special Use: Those land uses identified in the Zoning Ordinance for the Town of Paradise Valley as SUP District (Religious Facility, Private School, Non-Profit Organization, Public/Quasi Public), SUP District (Resort, Country Club, Golf Course), SUP District (Medical Office, Kennel, Veterinary Clinic).

Special Use and Supplemental means all customer classifications serviced by a water meter, except Single Family Residential, and are connected to a sewer or septic system.

Subject Development: A land area linked by a unified plan of development, which must be contiguous unless the land area is part of a development agreement executed in accordance with A.R.S. § 9-500.05.

Substantial Nexus: A substantial nexus exists where the demand for Wastewater Services that will be generated by an EDU can be reasonably quantified in terms of the burden it will impose on the available capacity of existing Capital Facilities, the need it will create for new or expanded Capital Facilities, and/or the benefit to the development from those Capital Facilities.

Supplemental: The OSP Open Space Preserve District identified in the Zoning Ordinance for the Town of Paradise Valley.

System Average Cost Per EDU: The total current value of existing facilities plus the future capital costs listed in the Infrastructure Improvements Plan for Wastewater Services divided by the total service capacity projected in the Service Area for Wastewater Services over the same time period.

Town: The Town of Paradise Valley, Arizona.

Useful Life: The period of time in which an asset can reasonably be expected to be used under normal conditions, whether or not the asset will continue to be owned and operated by the Town over the entirety of such period.

Wastewater Service: Includes, but is not limited to sewers, lift stations, reclamation plants, wastewater treatment plants, and all other facilities for the collection, interception, transportation, treatment and disposal of wastewater, and any appurtenances for those facilities; and the rights to use such pursuant to an intergovernmental agreement with another municipality.

15-3-4. – Applicability; Repeal of Previous Ordinances

A. Except as otherwise provided herein, from and after 12:00 a.m. on August 1, 2014, this Article shall apply to all new development within the Town's Wastewater Service Areas.

B. The provisions of this Article shall apply to all of the territory within the corporate limits of the Town which define the Town's Wastewater service areas.

C. The Town Manager or Authorized Designee is authorized to make determinations regarding the application, administration and enforcement of the provisions of this Article.

15-3-5. – Authority for Development Fees

A. *Fee Report and Implementation.* The Town may assess and collect a Development Fee for costs of Wastewater Services, including all professional services required for the preparation or revision of an Infrastructure Improvements Plan, Fee Report, Development Fee, and required reports or audits conducted pursuant to this Article. Development Fees shall be subject to the following requirements:

1. The Town shall develop and adopt a Fee Report that analyzes and defines the Development Fees to be charged in the Service Area for each Wastewater Capital Facility, based on the Infrastructure Improvements Plan and the System Average Cost per EDU calculated pursuant to Section 15-3-9 of this Article.

2. Development Fees shall be assessed against the recommended types of water meters for all new Special Use, Residential, and Supplemental land use developments, provided that the Town may assess different amounts of Development Fees against the recommended types of water meters for specific Categories of Development within each Land Use based on the number of EDUs that are associated with providing Wastewater Services for the recommended water meter types within that Category of Development. No Development Fee shall exceed the System Average Cost per EDU for any water meter type. In the event of a disagreement between the Developer and the Town as to the appropriate type of meter, the Town's decision shall be final. The Development Fees will provide funds for costs of new or expanded facilities for Wastewater services as required by new development within the Town's Service Area.

3. No Development Fees shall be charged or Credits issued for any Capital Facility that is not a Wastewater Service.

4. Costs for Wastewater Services made necessary by new development shall be based on the same Level of Service provided to existing development in the Service Area. Development Fees may not be used to provide a higher Level of Service to existing development to update, improve, expand, connect, or replace existing Wastewater services to meet stricter safety, efficiency, environmental, or other regulatory standards to the extent that these are applied to existing Wastewater Capital Facilities that are serving existing development.

5. Development Fees may not be used to pay the Town's administrative, maintenance, or other operating costs.

6. Projected interest charges and financing costs can only be included in Development Fees to the extent they represent principal and/or interest on the portion of any Financing or Debt used to finance the construction or expansion of a Capital Facility identified in the Infrastructure Improvements Plan.

7. Except for any fees included on Interim Fee Schedules, all Development Fees charged by the Town must be included in a "Fee Schedule" prepared pursuant to this Article and included in the Fee Report.

8. All Development Fees shall meet the requirements of A.R.S. § 9-463.05.

B. *Costs per EDU.* The Fee Report shall summarize the costs of Capital Facilities necessary to serve new development on a per EDU basis as defined and calculated in the Infrastructure Improvements Plan, including all required Offsets, and shall recommend a Development Fee structure for Wastewater Services for adoption by the Town.

C. *Carry-over of Previously-Established Development Fees and Grandfathered Facilities.* Notwithstanding the requirements of this Article, certain Development Fees adopted by the Town before the effective date of this Article shall continue in effect as follows:

1. Until August 1, 2014, Wastewater Development Fees established before January 1, 2012 shall continue in full force and effect. Wastewater Development Fees collected before January 1, 2012, shall only be expended on Capital Facilities within Wastewater Services.

2. The Town may continue to collect and use any Development Fee established before January 1, 2012, even if the Development Fee would not otherwise be permitted to be collected and spent pursuant to A.R.S. § 9-463.05, as amended by the state legislature in SB 1525, Fiftieth Legislature, First Regular Session, if either of the following apply:

a. Both of the following conditions are met:

i. Before June 1, 2011, the Development Fee was pledged towards the repayment of Financing or Debt incurred by the Town to provide a Capital Facility; and

ii. The applicable Capital Facility was included in the Town's Infrastructure Improvements Plan, or other Town planning document prepared pursuant to applicable law, before June 1, 2011.

b. Before August 1, 2014, the Town uses the Development Fee to finance a Capital Facility in accordance with A.R.S. § 9-463.05(S).

3. Defined terms in any previously established fee schedule shall be interpreted according to the ordinance in effect at the time of their adoption.

15-3-6. - Installation of Local Improvements by Developers.

The developer shall install, at his expense, all local Wastewater distribution improvements necessary for a development. The developer shall pay all Development Fees required by this Article to provide service to his local distribution improvements. The developer shall install or pay for system improvements which shall be included and identified in a development master plan which has been approved by the Town. The Town may elect to participate in the cost of oversizing of any pipeline or other facilities. Any water meter installed for irrigation or fire protection purposes only shall not be included in the calculation of Wastewater Development Fees.

15-3-7. – Administration of Development Fees

A. *Separate Accounts.* Development Fees collected pursuant to this Article shall be placed in separate, interest-bearing accounts for Wastewater Services.

B. *Limitations on Use of Fees.* Development Fees and any interest thereon collected pursuant to this Article shall be spent to provide Capital Facilities associated with Wastewater Services in the Service Area, including costs of Financing or Debt used by the Town to finance such Capital Facilities and other costs authorized by this Article that are included in the Infrastructure Improvements Plan.

C. *Time Limit.* Development Fees collected on or after August 1, 2014 for Wastewater Facilities shall be spent within fifteen (15) years after the date upon which they were collected.

15-3-8. – Land Use Assumptions

The Infrastructure Improvements Plan shall be consistent with the Town's current Land Use Assumptions for the Service Area and Wastewater Services adopted by the Town pursuant to A.R.S. § 9-463.05.

A. *Reviewing the Land Use Assumptions.* Before the adoption or amendment of an Infrastructure Improvements Plan, the Town shall review and evaluate the Land Use Assumptions on which the Infrastructure Improvements Plan is to be based to ensure that the Land Use Assumptions within the Service Area conform to the General Plan.

B. *Evaluating Necessary Changes.* If the Land Use Assumptions upon which an Infrastructure Improvements Plan is based have not been updated within the last five (5) years, the Town shall evaluate the Land Use Assumptions to determine whether changes are necessary. If, after an evaluation, the Town determines that the Land Use Assumptions are still valid, the Town shall issue the report required in Section 15-3-11 of this Article.

C. *Required Modifications to Land Use Assumptions.* If the Town determines that changes to the Land Use Assumptions are necessary in order to adopt or amend an Infrastructure Improvements Plan, it shall make such changes as necessary to the Land Use Assumptions before or in conjunction with the review and approval of the Infrastructure Improvements Plan pursuant to Section 15-3-11 of this Article.

15-3-9. – Infrastructure Improvements Plan

A. *Infrastructure Improvements Plan Contents*. The Infrastructure Improvements Plan shall be developed by Qualified Professionals and may be based upon or incorporated within the Town's Capital Improvements Plan. The Infrastructure Improvements Plan shall:

1. Specify that the Town will impose a Development Fee for Wastewater Services.

2. Define and provide a map of the Service Area within which the Town Wastewater Development Fees will be charged. The Service Area must be defined in a manner that demonstrates a Substantial Nexus between the Capital Facilities to be provided in the Service Area and the EDUs to be served by those Capital Facilities.

3. Identify and describe the Land Use Assumptions upon which the Infrastructure Improvements Plan is based in the Service Area.

4. Identify and analyze the existing Level of Service provided by the Town to existing EDUs for Wastewater Services in the Service Area.

5. Identify the Level of Service to be provided by the Town for Wastewater Services within the Service Area based on the relevant Land Use Assumptions and any established Town standards or policies related to required Levels of Service.

6. Identify and analyze the capacity of the existing Capital Facilities in the Service Area, the utilization of those Capital Facilities by existing EDUs, and the available excess capacity of those Capital Facilities to serve new EDUs, including any existing or planned commitments or agreements for the usage of such capacity. The Infrastructure Improvements Plan shall additionally identify any changes to existing Capital Facilities that will be needed to achieve or maintain the planned Level of Service to existing EDUs, and the cost of those changes to upgrade, update, expand, correct or replace existing Capital Facilities to meet stricter safety,

efficiency, environmental, or other regulatory standards to provide Wastewater services to existing EDUs.

7. Identify any Grandfathered Facilities and the impact thereof on the need for Wastewater Services in the Service Area.

8. Estimate the total number of existing and future EDUs within the Service Area based on the Town's Land Use Assumptions.

9. Based on the analysis in paragraphs (3)-(6) above, provide a summary table or tables describing the Level of Service for Wastewater Services by relating the required Capital Facilities to EDUs in the Service Area, and identifying the applicable EDU factor.

10. Identify and analyze the projected utilization of any available excess capacity in existing Capital Facilities, and all new or expanded Capital Facilities that will be required to provide and maintain the planned Level of Service in the Service Area as a result of the new projected EDUs in the Service Area, for a period not to exceed ten (10) years. Nothing in this Subsection shall prohibit the Town from additionally including in its Infrastructure Improvements Plan projected utilization of, or needs for, Capital Facilities for a period longer than ten (10) years, provided that the costs of such Capital Facilities are excluded from the calculation of the System Average Cost per EDU.

11. Estimate the total cost of any available excess capacity in existing Capital Facilities, and/or new or expanded Capital Facilities that will be required to serve new EDUs, including costs of land acquisition, improvements, engineering and architectural services, studies leading to design, construction, financing, and administrative costs, as well as projected costs of inflation. Such total costs shall not include costs for ongoing operation, repair, and maintenance of Capital Facilities. If the Infrastructure Improvement Plan includes changes to existing Capital Facilities to provide services to existing EDUs in order to upgrade, update, expand, correct, or replace existing Capital Facilities to meet stricter safety, efficiency, environmental, or regulatory standards, the costs of such changes shall be identified and distinguished in the Infrastructure Improvement Plan from necessary costs for such changes required to provide services to new EDUs, provided, however, that any such changes for new EDUs shall be based on the same Level of Service provided to existing EDUs.

12. Forecast the revenues from taxes, fees, assessments or other sources, if any, that will be available to fund the new or expanded

Capital Facilities identified in the Infrastructure Improvements Plan, which shall include estimated state-shared revenue, highway users revenue, federal revenue, ad valorem property taxes, construction contracting or similar excise taxes and the capital recovery portion of utility fees attributable to development based on the approved land use assumptions. The Infrastructure Improvements Plan shall additionally estimate the time required to finance, construct and implement the new or expanded Capital Facilities.

13. Calculate required Offsets as follows:

    a. From the forecasted revenues in Subsection (12) of this Section, identify those sources of revenue that: (i) are attributable to new development, and (ii) will contribute to paying for the capital costs of Wastewater Services.

    b. For each source and amount of revenue identified pursuant to paragraph (a) of this Subsection, calculate the relative contribution of each Category of Development and water meter type(s) to paying for the capital costs of Wastewater Services in the Service Area.

    c. Based on the relative contributions identified pursuant to paragraph (b) of this subsection, calculate the total Offset to be provided to each Category of Development and water meter type(s) in the Service Area.

    d. Convert the total Offset to be provided to each Category of Development and water meter type(s) in the Service Area into an offset amount per EDU by dividing the total Offset for each Category of Development and water meter type(s) by the number of EDUs associated with that Category of Development.

    e. Beginning August 1, 2014, for purposes of calculating the required Offset, if the Town imposes a construction, contracting, or similar excise tax rate in excess of the percentage amount of the transaction privilege tax rate that is imposed on the majority of other transaction privilege tax classifications in the Town, the entire excess portion of the construction, contracting, or similar excise tax shall be treated as a contribution to the capital costs of Wastewater services provided to new development unless the excess portion is already utilized for such purpose pursuant to this Section.

14. Calculate the System Average Cost per EDU by:

    a. Dividing the total projected costs to provide Capital Facilities to new EDUs for each Wastewater Service in the Service Area as determined pursuant to Subsection (9) of this Section into the total service capacity projected for Wastewater Services for the Service Area over a period not to exceed ten (10) years, considering the specific EDU factor(s) associated with such EDUs for both Wastewater Services.

    b. Subtracting the required Offset per EDU calculated pursuant to Subsection (13) of this Section.

B. *Reserved Capacity*. The Town may reserve capacity in an Infrastructure Improvements Plan to serve one (1) or more planned future developments, including capacity reserved through a Development Agreement pursuant to Section 15-3-13 of this Article. All reservations of existing capacity must be disclosed in the Infrastructure Improvements Plan at the time it is adopted.

15-3-10. – Adoption and Modification Procedures

A. *Adopting or Amending the Land Use Assumptions and Infrastructure Improvements Plan.* The Infrastructure Improvements Plan shall be adopted or amended subject to the following procedures:

1. *Major Amendments to the Infrastructure Improvements Plan.* Except as provided in paragraph 2 of this Subsection (A), the adoption or amendment of an Infrastructure Improvements Plan shall occur at one or more public hearings according to the following schedule, and may occur concurrently with the adoption of an update of the Town's Land Use Assumptions as provided in Section 15-3-8 of this Article:

    a. At least sixty (60) days before the first public hearing regarding a new or updated Infrastructure Improvements Plan, the Town shall provide public notice of the hearing and post the Infrastructure Improvements Plan and the underlying Land Use Assumptions on its website. The Town shall additionally make available to the public the documents used to prepare the Infrastructure Improvements Plan and underlying Land Use Assumptions and the amount of any proposed changes to the System Average Cost per EDU.

b. The Town shall conduct a public hearing on the Infrastructure Improvements Plan and underlying Land Use Assumptions at least thirty (30) days, but no more than sixty (60) days, before approving or disapproving the Infrastructure Improvements Plan.

2. *Minor Amendments to the Land Use Assumptions and Infrastructure Improvements Plan.* Notwithstanding the other requirements of this Section, the Town may update the Infrastructure Improvements Plan and/or its underlying Land Use Assumptions without a public hearing if all of the following apply:

a. The changes in the Infrastructure Improvements Plan and/or the underlying Land Use Assumptions will not add any new Wastewater Service facilities to the Service Area.

b. The changes in the Infrastructure Improvements Plan and/or the underlying Land Use Assumptions will not increase the Level of Service to be provided in any Service Area.

c. Based on an analysis of the Fee Report and the Town's adopted Development Fee schedules, the changes in the Infrastructure Improvements Plan and/or the underlying Land Use Assumptions would not, individually or cumulatively with other amendments undertaken pursuant to this Subsection, have caused a Development Fee in the Service Area to have been increased by more than five percent (5%) above the Development Fee that is provided in the current Development Fee schedule.

d. At least thirty (30) days before the date that any amendment pursuant to this Section is adopted, the Town shall post the proposed amendments on the Town's Website.

B. *Amendments to the Fee Report.* Any adoption or amendment of a Fee Report and fee schedule shall occur at one (1) or more public hearings according to the following schedule:

1. The first public hearing on the Fee Report must be held at least thirty (30) days after the adoption or approval of any Land Use Assumptions and Infrastructure Improvements Plan as provided in Subsection A of this Section. The Town must give at least thirty (30) days notice before the hearing, provided that this notice may be given on the same day as the approval or disapproval of the Infrastructure Improvements Plan.

2. The Town shall make the Infrastructure Improvements Plan and underlying Land Use Assumptions available to the public on the Town's website thirty (30) days before the public hearing described in Paragraph (B)(1) of this Subsection.

3. The Fee Report may be adopted by the Town no sooner than thirty (30) days, and no later than sixty (60) days, after the hearing described in Paragraph (B)(1) of this Subsection.

4. The Development Fee schedules in the Fee Report adopted pursuant to this Subsection shall become effective not less than seventy-five (75) days after adoption of the Fee Report by the Town.

15-3-11. – Five-Year Validity of the Infrastructure Improvements Plan and the Land Use Assumptions

A. *Renewing the Land Use Assumptions and Infrastructure Improvements Plan.* Except as provided in Subsection (B) of this Section, not later than every five (5) years, the Town shall update the applicable Infrastructure Improvements Plan and Land Use Assumptions related to Wastewater Services pursuant to Sections 15-3-8 and 15-3-9 of this Article. Such 5-year period shall be calculated from the date of the adoption of the Infrastructure Improvements Plan.

B. *Determination of No Changes.* Notwithstanding Subsection (A) of this Section, if the Town determines that no changes to an Infrastructure Improvements Plan, underlying Land Use Assumptions, or Fee Report are needed, the Town may elect to continue the existing Land Use Assumptions, Infrastructure Improvements Plan, and Fee Report without amendment by providing notice as follows:

1. Notice of the determination shall be published in a newspaper of general circulation at least one hundred eighty (180) days before the end of the 5-year period described in Subsection A of this Section.

2. The notice shall identify the Land Use Assumptions, Infrastructure Improvements Plan, and Fee Report that shall continue in force without amendment.

3. The notice shall provide a map and description of the Service Area(s) covered by such Infrastructure Improvements Plan and Fee Report.

4. The notice shall identify an address to which any resident of the Town may submit, within sixty (60) days, a written request that the

Town update the Infrastructure Improvements Plan, underlying Land Use Assumptions, and/or Fee Report and the reasons and basis for the request.

C. *Response to Comments.* The Town shall consider and respond within thirty (30) days to any timely requests submitted pursuant to Paragraph 4 of Subsection (B) of this Section.

15-3-12. - Collection of Development Fees

A. *Collection*. Development Fees for Wastewater Services shall be charged in the amounts stated in the Town's Master Fee Schedule, as may be amended from time to time, together with administrative charges assessed pursuant to Subsection (A)(5) and (D) of this Section, shall be calculated and collected before issuance of permission to begin development; specifically:

1. Unless otherwise specified pursuant to a Development Agreement adopted pursuant to Section 15-3-14 of this Article, Development Fees shall be paid before issuance of the first building permit for residential development, or for a Special Use or Supplemental land use development, the date of the site plan or the subdivision plat, or if neither of these are applicable the approval of Final Plans, according to the current Development Fee schedule for the Service Area.

2. If a building permit is not required for the development, but wastewater connections are required, any and all Development Fees due shall be paid before approval of a connection to the sewer system. Wastewater Development Fees shall be assessed if a development connects to the public sewer, or as determined by the Town Manager or Authorized Designee, and is capable of discharging sewage to a Town public sewer.

3. No building permit, sewer connection, or certificate of occupancy shall be issued if a Development Fee is not paid as directed in paragraphs (A)1 and (A)2.

4. If the building permit is for a change in the type of building use, an increase in square footage, a change of land use, or an addition to a residential or non-residential point of demand to the Wastewater system requiring a change in the water meter type or a change in the number of water meters, the Development Fee shall be assessed on the additional EDUs, changes in water meter type(s) or number of meters resulting from the expansion or change, and following the Development Fee schedule applicable to any new meter types or number of meters. The development will receive a credit for any Development Fees previously paid for that

development against any additional Development Fees required to be paid as a result of any such changes. Credits are based on the then current effective fee schedule.

5. For issued building permits that expire or are voided, Development Fees and administrative charges shall be as follows:

   a. If the original permittee is seeking to renew an expired or voided building permit, and the Development Fees paid for such development have not been refunded, then the permittee shall pay the difference between any Development Fees paid at the time the permit was issued and those in the fee schedule at the time the permit is reissued or renewed.

   b. If a new or renewed permit for the same development is being sought by someone other than the original permittee, the new permit Applicant shall pay the full Development Fees specified in the fee schedule in effect at the time that the permits are reissued or renewed. If the original permittee has assigned its rights under the permits to the new permit Applicant, the new permit Applicant shall pay Development Fees as if it were the original permittee as provided in Subsection (5)(a).

   c. The Town Manager or Authorized Designee may require the Applicant to pay an administrative fee to cover the actual costs of reviewing the new or renewed permitting for the development.

B. *Exceptions*. Development Fees shall not be owed under either of the following conditions:

1. Development Fees have been paid for the development and the events which triggered the collection of the Development Fees have not expired or been voided.

2. The approval(s) that triggers the collection of Development Fees involve modifications to existing residential or non-residential development that do not: (a) add new EDUs, (b) increase the impact of existing EDUs on existing or future Capital Facilities, or (c) change the land-use type of the existing EDUs to a different category of development requiring a different type water meter(s) for which a higher Development Fee would have been due. To the extent that any modification does not meet the requirements of this paragraph, the Development Fee due shall be the difference between the Development Fee that was or would have been due on

the existing EDUs and the Development Fee that is due on the EDUs as modified.

C. *Temporary Freeze of Development Fee Schedules.* The Development Fee Schedule applicable to new developments in the Town shall be temporarily frozen from increases in Development Fees that result from the adoption of new or modified Development Fee schedules as follows:

1. Residential Land Uses. On or after the day that the first building permit is issued for a Single-Family Residential Development the applicable Development Fee schedule shall be frozen for a period of twenty-four (24) months beginning on the day that the first building permit is issued, and which shall expire at the end of the first business day of the 25th month thereafter. During the effective period of the applicable Development Fee schedule, any building permit issued for the same Single-Family Residential Development shall not be subject to any new or modified Development Fee schedule. The Town shall issue, on request, a written statement of the Development Fee Schedule applicable to the development.

2. Special Use Land Uses. On or after the day that the final development approval is given for a site plan or subdivision plat, or if neither of these is applicable, approval of the final plans for a Special Use development, the applicable Development Fee schedule shall be frozen for a period of twenty-four (24) months beginning on the day that final development approval is given for a site plan or a subdivision plat or if neither of these is applicable, approval of the final plans, and which shall expire at the end of the first business day of the twenty fifth (25th) month thereafter. During the effective period of the applicable Development Fee schedule, any building permit issued for the same development shall not be subject to any new or modified Development Fee schedule. The Town shall issue, on request, a written statement of the Development Fee Schedule applicable to the development.

3. Other Development. Any Supplemental Land Use not covered under paragraphs (C)1 and (C)2 of this Subsection shall pay Development Fees according to the fee schedule that is current at the time of collection as specified in Subsection (A) of this Section. The Town Manager or Authorized Designee will make the determination of the recommended type(s) of water meter for Categories of Development within the Mixed-Use or Supplemental Land Uses. The provisions of Subsection C(1) and (2) shall apply in accordance with the determination as to the applicable category of development.

4. Changes to Site Plans and Subdivision Plats. Notwithstanding the other requirements of this Subsection, if changes are made to a development's final site plan or subdivision plat that will increase the number of EDUs or change in water meter type(s) after the issuance of a Development Fee schedule, the Town may assess any new or modified Development Fees against the additional EDUs or change in water meter type(s). The development will receive a credit for any Development Fees previously paid at the time the final site plan or subdivision plat was approved for that development against any new or modified Development Fees required to be paid. If the Town reduces the amount of an applicable Development Fee during the period that a grandfathered Development Fee schedule is in force, the Town shall assess the lower Development Fee.

D. *Option to Pursue Special Fee Determination.* Where a development is of a type that does not closely fit within a particular Category of Development or recommended water meter type(s) appearing on an adopted Development Fee schedule, or where a development has unique characteristics such that the actual burdens and costs associated with providing Wastewater Services to that development will differ substantially from that associated with other developments in a specified Category of Development or recommended water meter type(s), the Town may require the Applicant to provide the Town Manager or Authorized Designee with an alternative Development Fee analysis. Based on a projection of the actual burdens and costs that will be associated with the development, the alternative Development Fee analysis may propose a unique fee for the development based on the application of an appropriate EDU factor to the applicable System Average Cost per EDU, or may propose that the development be covered under the Development Fee schedule governing a different and more analogous Category of Development or recommended water meter type(s). The Town Manager or Authorized Designee shall review the alternative Development Fee analysis and shall make a determination as to the Development Fee to be charged. Such decision shall be appealable pursuant to Section 15-3-15 of this Article. The Town Manager or Authorized Designee may require the Applicant to pay an administrative fee to cover the actual costs of reviewing the special fee determination application.

15-3-13. - Development Fee Credits and Credit Agreements

A. *Eligibility of Capital Facility*. All Development Fee Credits must meet the following requirements:

1. One (1) of the following must be true:

a. The Capital Facility, or the financial contribution toward a Wastewater Capital Facility that will be provided by the developer and for which a Credit will be issued, must be identified in an adopted Infrastructure Improvements Plan and Fee Report as a Wastewater Capital Facility for which a Development Fee was assessed; or

b. The Applicant must demonstrate to the satisfaction of the Town that, given the class and type of improvement, the subject Capital Facility should have been included in the Infrastructure Improvements Plan in lieu of a different Capital Facility that was included in the Infrastructure Improvements Plan and for which a Development Fee was assessed. If the subject Capital Facility is determined to be eligible for a Credit in this manner, the Town shall amend the Infrastructure Improvements Plan to (i) include the subject replacement facility and (ii) delete the Capital Facility that will be replaced.

2. Credits shall not be available for any infrastructure provided by a developer if the cost of such infrastructure will be repaid to the developer by the Town through another agreement or mechanism. To the extent that the developer will be paid or reimbursed by the Town for any contribution, payment, construction, or dedication from any Town funding source including an agreement to reimburse the developer with future collected Development Fees pursuant to Article V of this Chapter regarding sewer extension agreements, any Credits claimed by the developer shall be: (a) deducted from any amounts to be paid or reimbursed by the Town; or (b) reduced by the amount of such payment or reimbursement.

3. If the developer is not obligated to pay Development Fees, the developer is not entitled to receive any credits.

B. *Eligibility of Subject Development*. To be eligible for a Credit, the Subject Development must be located within the Service Area of the Wastewater Capital Facility.

C. *Calculation of Credits*. Credits will be based on that portion of the costs for a Wastewater Capital Facility identified in the adopted Infrastructure Improvements Plan for which a Development Fee was assessed pursuant to the Fee Report. If the Gross Development Fee for Wastewater service is adopted at an amount lower than the System Average Cost per EDU, the amount of any Credit shall be reduced in proportion to the difference between the System Average Cost per EDU and the Gross Development Fee adopted. A Credit shall not exceed the actual costs the Applicant incurred in providing the Wastewater Capital Facility or water supply

acquisition. Credit for land deeded to the Town for Wastewater Capital Facilities shall be based on a fair market value established by private appraisers acceptable to the Town. The valuation date for the appraisal will be the date the land is deeded to the Town. Credit shall be applied to the Credit Agreement only when the land has been conveyed at no charge to, and accepted by the Town in a manner satisfactory to the Town Manager.

D. *Allocation of Credits*. Before any Credit can be issued to a Subject Development (or portion thereof), the Credit must be allocated to that development as follows:

1. The Developer and the Town must execute a Credit Agreement stating all of the following:

   a. The total amount of the Credits resulting from provision of a Wastewater Capital Facility.

   b. The estimated number of EDUs to be served within the Subject Development.

   c. The method by which the Credit values will be distributed within the Subject Development.

2. It is the responsibility of the developer to request allocation of Development Fee Credits through an application for a Credit Agreement (which may be part of a Development Agreement entered into pursuant to Section 15-3-14 of this Article).

3. If a building permit is issued or a sewer connection is purchased, and a Development Fee is paid before execution of a Credit Agreement for the Subject Development, no Credits will be allocated retroactively to that permit or connection. Credits may be allocated to any remaining permits for the Subject Development in accordance with this Article.

4. If the entity that provides a Wastewater Capital Facility sells or relinquishes a development (or portion thereof) that it owns or controls before execution of a Credit Agreement or Development Agreement, Credits resulting from the Wastewater Capital Facility will only be allocated to the development if the entity legally assigns such rights and responsibilities to its successor(s) in interest for the Subject Development.

5. If multiple entities jointly provide an eligible Capital Facility, all entities must enter into a single Credit Agreement with the Town, and any request for the allocation of Credit within the Subject

Development(s) must be made jointly by the entities that provided the eligible Capital Facility.

6. Credits may only be reallocated from or within a Subject Development with the Town's approval of an amendment to an executed Credit Agreement, subject to the following conditions:

   a. The entity that executed the original Credit Agreement with the Town, or its legal successor in interest, and the entity that currently controls the Subject Development are both parties to the request for reallocation.

   b. The reallocation proposal does not change the value of any Credits already issued for the Subject Development.

7. A Credit Agreement may authorize the allocation of Credits to a non-contiguous parcel only if all of the following conditions are met:

   a. The entity that executed the original agreement with the Town or its legal successor in interest, the entity that currently controls the Subject Development, and the entity that controls the non-contiguous parcel are all parties to the request for reallocation.

   b. The reallocation proposal does not change the value of any Credits already issued for the Subject Development.

   c. The non-contiguous parcel is in the same Service Area as that served by the eligible Capital Facility.

   d. The non-contiguous parcel receives Wastewater service from the Wastewater Capital Facility.

   e. The Credit Agreement specifically states the value of the Credits to be allocated to each parcel and/or EDU, or establishes a mechanism for future determination of the Credit values.

   f. The Credit Agreement does not involve the transfer of Credits to or from any property subject to a Development Agreement.

E. *Credit Agreement*. Credits shall only be issued pursuant to a Credit Agreement executed in accordance with Subsection (D) of this Section. The Town Manager or Authorized Designee is authorized by this Article

to review, approve and sign a Credit Agreement with the controlling entity of a Subject Development, subject to the following:

1. The Developer requesting the Credit Agreement shall provide all information requested by the Town to allow it to determine the value of the Credit to be applied.

2. An application for a Credit Agreement shall be submitted to the Town by the Developer within one (1) year after the date on which ownership or control of the Capital Facility passes to the Town.

3. The Developer shall submit a draft Credit Agreement to the Town Manager or Authorized Designee(s) for review in the form provided to the Applicant by the Town. The draft Credit Agreement shall include, at a minimum, all of the following information and supporting documentation:

    a. A legal description and map depicting the location of the Subject Development for which Credit is being applied. The map shall depict the location of the Capital Facilities that have been or will be provided.

    b. An estimate of the total EDUs that will be developed within the Subject Development depicted on the map and described in the legal description.

    c. A list of the Capital Facilities, associated physical attributes, and the related costs as stated in the Infrastructure Improvements Plan.

    d. Documentation showing the date(s) of acceptance by the Town, if the Capital Facilities have already been provided.

    e. The total amount of Credit to be applied within the Subject Development and the calculations leading to the total amount of Credit.

    f. The Credit amount to be applied to each EDU within the Subject Development for Wastewater Services.

4. The Town’s determination of the Credit to be allocated is final.

5. Upon execution of the Credit Agreement by the Town and the Applicant, Credits shall be considered allocated to the Subject Development.

6. Any amendment to a previously approved Credit Agreement must be initiated within -two (2) years after the date of the Town’s final

acceptance of the eligible Capital Facility for which the amendment is requested.

7. Any Credit Agreement approved as part of a Development Agreement shall be amended in accordance with the terms of the Development Agreement and Section 15-3-14 of this Article.

8. Credits shall be payable for a period of up to twenty (20) years from the date the Town issues its final acceptance of the Capital Facility or system improvements. After twenty (20) years, no credits shall be payable.

9. The Credit Agreement shall be maintained permanently in the Town Clerk's office.

F. *Issuance of Credits*. Credits allocated pursuant to Subsection (D) of this Section may be issued and applied toward the Gross Development Fees due from a development, subject to the following conditions:

1. Credits issued for a Wastewater Capital Facility may only be applied to the Development Fee due for Wastewater Services.

2. Credits shall only be issued when the Wastewater Capital Facility from which the Credits were derived has been accepted by the Town or when adequate security for the completion of the Wastewater Capital Facility has been provided in accordance with all terms of an executed Development Agreement.

3. Credits shall be payable within thirty (30) days after the end of the quarter in which the building permit or other authorization to provide Wastewater service to a parcel or lot identified in the Agreement has occurred and connection to the Wastewater services has occurred as provided in Section 15-3-12(A)(1) and (2) of this Article. Credit amounts will not accrue interest.

4. Where Credits have been issued pursuant to Subsection (F)(2) of this Section, a development fee due at the time a building permit is issued shall be reduced by the Credit amount stated in or calculated from the executed Credit Agreement. Where Credits have not yet been issued, the Gross Development Fee shall be paid in full, and a refund of the Credit amount shall be due when the Developer demonstrates compliance with Subsection (F)(2) in a written request to the Town.

5. Credits, once issued, may not be rescinded or reallocated to another permit or parcel, except that Credits may be released for reuse on the same Subject Development if a building permit for

which the Credits were issued has expired or been voided and connection to the Wastewater services has not occurred and is otherwise eligible for a refund under Section 15-3-16(A)(2)(a) of this Article.

6. Notwithstanding the other provisions of this Section 15-3-13, Credits issued before January 1, 2012 may only be used for the Subject Development for which they were issued. Such Credits may be transferred to a new owner of all or part of the Subject Development in proportion to the percentage of ownership in the Subject Development to be held by the new owner.

7. Credits will not be issued for dedicated easements, tracts, or rights-of way, nor local water distribution or local sewer collection improvements within a development and related appurtenances.

15-3-14. - Development Agreements

Development Agreements containing provisions regarding Development Fees, Development Fee Credits, and/or disbursement of revenues from Development Fee accounts shall comply with the following:

A. *Development Agreement Required.* A Development Agreement is required to authorize any of the following:

1. To issue Credits before the Town's acceptance of a Wastewater Capital Facility.

2. To allocate Credits to a parcel that is not contiguous with the Subject Development and that does not meet the requirements of Subsection of Section 15-3-13(D)(7) of this Article.

3. To reimburse the developer of a Wastewater Capital Facility using funds from Development Fee accounts.

4. To allocate different Credit amounts per EDU to different parcels within a Subject Development.

5. For a Single Family Residential Dwelling Unit, to allow Development Fees to be paid at a later time than the issuance of a building permit as provided in this Section.

B. *General Requirements.* All Development Agreements shall be prepared and executed in accordance with A.R.S. § 9-500.05 and any applicable requirements of the Town Code. Except where specifically modified by this Section, all provisions of Section 15-3-13 of this Article shall apply to

any Credit Agreement that is authorized as part of a Development Agreement.

C. *Early Credit Issuance.* A Development Agreement may authorize the issuance of Credits before acceptance of a Wastewater Capital Facility by the Town when the Development Agreement specifically states the form and value of the security (i.e. bond, Letter of Credit, etc.) to be provided to the Town before issuance of any Credits. The Town shall determine the acceptable form and value of the security to be provided.

D. *Non-Contiguous Credit Allocation.* A Development Agreement may authorize the allocation of Credits to a non-contiguous parcel only if all of the following conditions are met:

1. The non-contiguous parcel is in the Town Service Area.

2. The non-contiguous parcel receives Wastewater Services from the eligible Capital Facility.

3. The Development Agreement specifically states the value of the Credits to be allocated to each parcel and/or EDU, or establishes a mechanism for future determination of the Credit values.

E. *Uneven Credit Allocation.* The Development Agreement must specify how Credits will be allocated amongst different parcels on a per-EDU basis, if the Credits are not to be allocated evenly. If the Development Agreement is silent on this topic, all Credits will be allocated evenly amongst all parcels on a per-EDU basis.

F. *Use of Reimbursements.* Funds reimbursed to developers from development fee accounts for construction of a Wastewater Capital Facility must be utilized in accordance with applicable law for the use of Town funds in construction or acquisition of Capital Facilities, including any procurement requirements in A.R.S. § 34-201, *et seq.*

G. *Deferral of Fees.* A Development Agreement may provide for the deferral of payment of Development Fees for a residential development beyond the issuance of a building permit; provided that a Development Fee may not be paid later than fifteen (15) days after the issuance of the certificate of occupancy for that Dwelling Unit. The Development Agreement shall provide for the value of any deferred Development Fees to be supported by appropriate security, including a surety bond, letter of credit, or cash bond.

H. *Waiver of Fees.* If the Town agrees to waive any Development Fees assessed on development in a Development Agreement, the Town shall reimburse the appropriate.

I. *No Obligation.* Nothing in this Section obligates the Town to enter into any Development Agreement or to authorize any type of Credit Agreement permitted by this Section.

15-3-14.1 - Connection Fees for Water/Wastewater Services Outside Town Boundaries

A. *Future Development.* After August 1, 2014, in areas outside the boundaries of the Town where the Town has elected to provided Wastewater Services, and a Developer is requesting that the Town provide new Wastewater Services to new development, the Town will impose a Connection Fee for such services based on the recommended type(s) of water meters. The Town Manager or Authorized Designee will make the determination of the recommended type(s) of the water meters.

B. The amount of the Connection Fees for wastewater services shall be based on the provisions of Tables A-1 and A-2 of this Section 15-3, and shall be paid before approval of a connection to the Town's sewer system. The Town will deny any connection to Wastewater services if the Developer fails to pay the applicable Wastewater Connection Fee when due. If the development is capable of discharging sewage to a Town public sewer, a Wastewater Connection Fee shall be assessed if a development connects to the public sewer, or as determined by the Town Manager or Authorized Designee of the Water Resources Division.

C. *Appeals of Connection Fee.* The Developer may appeal the decision of the Town Manager or Authorized Designee in accordance with the provisions of Sec. 15-3-15. An appeal shall be limited to disputes regarding the calculation of the Connection Fee and calculation of the number of service units for a specific development. The Applicant may connect to Water Services or Wastewater Services if, during the pendency of an appeal, the Applicant (1) pays the Connection Fee calculated by the Town at the time the appeal is filed, or (2) provides the Town with appropriate security, including surety bond, letter of credit, or cash bond in a form acceptable to the Town Manager or Authorized Designee, equal to the full amount of the Connection Fee. Upon final disposition of an appeal, the fee shall be adjusted in accordance with the decision rendered, and a refund paid if warranted. If the appeal is denied by the Town Manager or Authorized Designee, and the Applicant has provided the Town with financial assurances as set forth in clause (2) above, the Applicant shall deliver the full amount of the Connection Fee to the Town within ten (10) days after the Town Manager or designee's final decision on the appeal. If the Applicant fails to deliver the full amount of the Connection Fee when required by this Subsection, the Town may draw upon such financial assurance instrument(s) as necessary to recover the full amount of the Connection Fee due from the Applicant.

15-3-15. - Appeals

A Development Fee determination by Town staff may be appealed in accordance with the following procedures:

A. *Limited Scope.* An appeal shall be limited to disputes regarding the calculation of the Development Fees for a specific development and/or permit and calculation of the number of EDU's for the development.

B. *Form of Appeal.* An appeal shall be initiated on such written form as the Town may prescribe, and submitted to the Town Manager or Authorized Designee. Any hearing on the appeal to the Town Manager will be informal and will not be subject to the Rules of Evidence. Testimony will not be taken under oath and subpoenas for the production of evidence or witnesses may not be issued.

C. *Department Action.* The Town Manager or Authorized Designee shall hold any hearing and act upon the appeal within thirty (30) calendar days after the filing of the appeal with the Town Manager, and the Applicant shall be notified of the Town Manager's decision in writing within fourteen (14) calendar days after the date of the hearing.

D. *Final Decision.* The Town Manager or Authorized Designee's decision regarding the appeal is final.

G. *Fees During Pendency.* Building permits may be issued during the pendency of an appeal if the Applicant (1) pays the full development fee calculated by the Town at the time the appeal is filed or (2) provides the Town with appropriate security, including surety bond, letter of credit, or cash bond in a form acceptable to the Town Manager equal to the full amount of the development fee. Upon final disposition of an appeal, the fee shall be adjusted in accordance with the decision rendered, and a refund paid if warranted. If the appeal is denied by the Town Manager or Authorized Designee, and the Applicant has provided the Town with financial assurances as set forth in clause (2) above, the Applicant shall deliver the full amount of the development fee to the Town within ten (10) days of the Town Manager or designee's final decision on the appeal. If the Applicant fails to deliver the full amount of the development fees when required by this Subsection, the Town may draw upon such financial assurance instrument(s) as necessary to recover the full amount of the development fees due from the Applicant.

15-3-16. – Refunds of Development Fees

A. *Refunds.* A refund (or partial refund) will be paid to any current owner of property within the Town who submits a written request to the Town and demonstrates that:

1. The building permit(s) that triggered the collection of the Development Fee has expired or been voided before the commencement of the development for which the permits were issued, connection to Wastewater services has not occurred, and the Development Fees collected have not been expended, encumbered, or Pledged for the repayment of Financing or Debt; or

2. The owner of the subject real property or its predecessor in interest paid a Development Fee for the applicable Capital Facility on or after August 1, 2014, and one (1) of the following conditions exists:

    a. The Capital Facility designed to serve the subject real property has been constructed, has the capacity to serve the subject real property and any development for which there is reserved capacity, and the service which was to be provided by that Capital Facility has not been provided to the subject real property from that Capital Facility or from any other infrastructure.

    b. After collecting the fee to construct a Capital Facility the Town fails to complete construction of the Capital Facility within the time period identified in the Infrastructure Improvements Plan, as it may be amended, and the corresponding service is otherwise unavailable to the subject real property from that Capital Facility or any other infrastructure.

    c. Any part of a Development Fee for Wastewater Facilities that is not spent within fifteen (15) years after the Town's receipt of the Development Fee. Such Development Fee is refundable upon application. Development Fees shall be considered expended or encumbered in the order received by the Town on a first-in, first-out basis. Development Fees are expended or encumbered when actually paid by the Town or when a lease, purchase, construction option or other contract or agreement creating an absolute or continuing obligation to pay and relating to the purposes stated in Sec. 15-3-12 has been approved by the Town council. Written application for a refund shall be made within one (1) year after the date the Development Fee becomes refundable and shall include documentation sufficient to establish the date and amount of the Development Fee payment. Development Fees for which no timely application is made will be applied to the

applicable Wastewater development fund into which the Development Fee was paid.

d. The Development Fee was calculated and collected for the construction cost to provide Capital Facilities serving the subject real property and the actual construction costs for the Capital Facilities are less than the construction costs projected in the Infrastructure Improvements Plan by a factor of ten percent (10%) or more. In such event, the current owner of the subject real property shall, upon request as set forth in Subsection A, be entitled to a refund for the difference between the amounts of the Development Fee charged for and attributable to such construction cost and the amount the Development Fee would have been calculated to be if the actual construction cost had been included in the Infrastructure Improvements Plan. The refund contemplated by this Subsection shall relate only to the costs specific to the construction of the applicable Capital Facilities and shall not include any related design, administrative, or other costs not directly incurred for construction of the Capital Facilities that are included in the Development Fee as permitted by A.R.S. § 9-463.05.

B. *Earned Interest.* A refund of a Development Fee shall include any interest actually earned on the refunded portion of the Development Fee by the Town from the date of collection to the date of refund. All refunds shall be made to the record owner of the property at the time the refund is paid.

C. *Refund to Government.* If a Development Fee was paid by a governmental entity, any refund shall be paid to that governmental entity.

15-3-17. – Oversight of Development Fee Program

A. *Annual Report.* Within ninety (90) days of the end of each fiscal year, the Town shall file with the Town Clerk an unaudited annual report accounting for the collection and use of the fees for the service area and shall post the report on its website in accordance with A.R.S. § 9-463.05, subsections N and O, as amended.

B. Biennial Audit. In addition to the annual report described in Subsection A of this Section, the Town shall provide for a biennial, certified audit of the Town's Land Use Assumptions, Infrastructure Improvements Plan and Development Fees.

1. An audit pursuant to this subsection shall be conducted by one (1) or more qualified professional who are not employees or officials

of the Town and who did not prepare the infrastructure improvements plan.

2. The audit shall review the collection and expenditures of Development Fees for each project in the plan and provide written comments describing the amount of Development Fees assessed, collected, and spent on capital facilities.

3. The audit shall describe the level of service in each service area, and evaluate any inequities in implementing the infrastructure improvements plan or imposing the Development Fee.

4. The Town shall post the findings of the audit on the Town's website and shall conduct a public hearing on the audit within sixty (60) days of the release of the audit to the public.

5. For purposes of this section, a certified audit shall mean any audit authenticated by one (1) or more of the qualified professionals conducting the audit pursuant to subsection (B)(1) of this section.

15-3-18. - Approval of Wastewater System Construction

The Town must approve the design, engineering, and construction of all connections to the Wastewater systems provided for under this article.

Article 15-4 **USER FEES** [104 120 125 144 188 475 481]

15-4- 1 User Fees for use of Sewer Lines Connecting to the City of Scottsdale Sewer System [475]
15-4- 2 User Fees for Use of Sewer Lines Connecting to the City of Phoenix Sewer System
15-4- 3 Charges and Fees a Lien on Property.
15-4- 4 Reduction of User Fee [481]
15-4- 5 Delinquent Fees; Lien

Section 15-4-1 User Fees for Use of Sewer Lines Connecting to the City of Scottsdale Sewer System [104 120 144 475]

A. Sewer user fees are imposed on all users of sewer facilities which flow directly or indirectly into the Scottsdale sewer system; except those users who make direct payment to Scottsdale.

B. The user fees shall be billed on a monthly basis. [475]

C. The sewer user fee shall be those prescribed in the Town of Paradise Valley Fee Schedule.

D. The sewer user fees shall be due by the date indicated on each monthly sewer billing statement. Any fees not received by the utility billing office by 5:00 p.m. of the last working day of the billing month shall be considered delinquent and will be subject to a five dollar ($5.00) late fee. [475]

Section 15-4-2 User Fees for Use of Sewer Lines Connecting to the City of Phoenix Sewer System

All rates to be charged for sewer lines connecting to the City of Phoenix Sewer System shall be set by the City of Phoenix Ordinance G2213.

RATES

User Classification	Fee
Residential	$6.62/month

Section 15-4-3 Charges and Fees a Lien on Property

Each charge or fee levied by or pursuant to this article is a lien upon the real property of the user to or for whom such service is supplied. The lien shall attach immediately upon the providing of the service pursuant to this Chapter. If a charge or fee is not paid within thirty days after it becomes due and payable, the Town may issue a notice and claim of lien setting forth:

1. The name of the user owing the charge or fee;
2. The amount owed;
3. The penalty accrued, if any;
4. The period for which due; and
5. A statement that the Town claims a lien therefor and description of the property liened.

At such time as the lien is filed, the cost of preparing, processing and releasing the lien, shall be added to charges then due.

Section 15-4-4 Reduction of User Fee [187] [481]

Any residential user of sewer lines connecting to the Scottsdale sewer system who installed a separate meter for landscape watering as of February 1, 1999, shall be charged the minimum residential user fee until June 30, 2000. Thereafter the monthly residential sewer user fee calculation shall be as set forth in the fee schedule, except that water usage shall be based on 100% of the household water consumption for the previous consecutive three-month period of December, January and February divided by three. Residents shall be responsible for obtaining an independent meter reading on December 1 and March 1 of each year in accordance with procedures established by the Town Manager.

Section 15-4-5 Delinquent Fees; Lien [125]

Upon the delinquency of any user fee levied pursuant to Section 15-4-1, a copy of the statement demanding payment of the amount due must be delivered by certified mail return receipt to the person last known to be the owner of the property. If the amount due is not paid within ten days after demand, a notice and claim of lien may be filed by the Town. Such lien must be recorded in the Office of the Maricopa County Recorder and from the date of recording shall be a lien against the lot or tract of land upon which service was rendered, until paid. Such liens are subject to and inferior to any prior recorded liens. A sale of the property to satisfy a lien obtained under the provisions of this Section shall be made upon judgment of foreclosure and order of sale. The Town Attorney may institute any action to enforce the lien in any court of appropriate jurisdiction in Maricopa County at any time after recording of the lien. Failure to contest the lien shall be prima facie evidence of the truth of all matters recited therein and of the regularity of all proceedings prior to the recording thereof. A prior lien for the purpose provided in this section shall not be a bar to a subsequent lien or liens for such purposes and any number of liens on the same lot or tract of land may be enforced in the same action. The amount owing may also be collected by a civil suit, instituted in the name of the Town by the Town Attorney at any time after the amount becomes delinquent. Notwithstanding any other provisions to the contrary, the remedies provided by this section shall be cumulative and supplemental to other remedies provided under this article.

Article 15-5 SEWER EXTENSIONS AND REIMBURSEMENT AGREEMENTS [141]

15-5- 1 Policy for Sewer Extension
15-5- 2 Plan Preparation
15-5- 3 Extension Requirements
15-5- 4 Reimbursement Agreements; Contents; Term; Accounts for
15-5- 5 Assignability of Agreements
15-5- 6 Line Payback Charge or Written Approval as a Requirement for Extension
15-5- 7 Town Extension [358]
15-5- 8 Basic Requirement
15-5- 9 Oversizing
15-5-10 Dedication of Right-of-Way
15-5-11 Payment

Section 15-5-1 Policy for Sewer Extension

A. There shall be a policy and orderly program for extension of the services and facilities of the Town's sewer system to provide for newly developed areas and subdivisions within the bounds of the Town, and to provide for reimbursement agreements with developers or property owners, and the collection of line payback charges. The elements of the extension policy and program set forth in this Article shall apply to all extensions of the Town's sewer system.

B. Any request for sewer extensions shall be made to the Town Manager or his authorized representative. Upon satisfactory compliance with the provisions of this Article, the Town Manager may execute a reimbursement agreement.

Section 15-5-2 Plan Preparation

Upon development of any property, area or subdivision within the Town for which sewer service is desired and available, all plans and specifications for the sewer system including "as-built plans" shall be prepared by a professional engineer, registered in the State of Arizona, and in accordance with the Town of Paradise Valley standards and specifications approved by the Town Engineer.

Section 15-5-3 Extension Requirements

A. Before a permit is issued for the extension of any sewer to serve a subdivision, platted, or unplatted property, the developer or owner desiring such extension may execute an agreement with the Town which shall include the following:

1. A diagram of all property which will be benefited by any sewer to be installed.

2. A statement that the Town acquires ownership of any sewer and appurtenances upon completion and acceptance of the work by the Town.

3. A statement that the Town's cost for inspecting the extension shall be paid by the developer or owner through the issuance of a permit to build the sewer extension.

B. The information required in paragraphs 1 through 3 inclusive of subsection A above necessary to complete the agreement shall be provided by the developer or owner at his sole expense.

Section 15-5-4 Reimbursement Agreements; Contents; Term; Accounts for

A. Reimbursement agreements shall state to whom reimbursements must be made and shall include a diagram of the properties from which line payback charges shall be collected.

B. Reimbursement agreements shall state the maximum reimbursement to the developer or owner for the cost of the sewer extension to be installed by him from which others may be served.

C. Any agreement providing for reimbursement of developers or owners shall run for a maximum period of ten years after the date of execution of the agreement and thereupon terminate all benefits or rights accruing to the developer or owner.

D. The Town shall establish a trust account for reimbursement agreements for the collection of line payback charges and payment of reimbursements. Sums collected shall be reimbursed within ninety days of receipt.

E. Construction costs shall be reviewed and approved by the Town, with the results submitted to the Town Engineer in writing, and shall be used to determine the construction cost to be included in the reimbursement agreement.

Section 15-5-5 Assignability of Agreements

Any developer or owner may assign the benefits arising out of any sewer reimbursement agreement with the Town, but assignment shall not relieve the developer or owner from its duties and obligations under the agreement. The assignment shall require the written approval of the Town Manager.

Section 15-5-6 Line Payback Charge or Written Approval as a Requirement for Extension

No person shall extend service from his tap to property for which a line payback charge has been identified but has not been paid to the Town without written approval of the Town Manager.

Section 15-5-7 Town Extension

A. In the event the Town elects to install a sewer extension, it shall be entitled to reimbursement of its cost plus a five percent administrative charge from the benefiting property prior to the issuance of a building permit.

B. The Reimbursement to the Town may be paid in one lump sum or may be paid by promissory note over a period of time not to exceed ten years.

C. Failure to make timely payments pursuant to an agreement entered into under paragraph B of this Section shall invoke the penalties of Section 15-6-1..

Section 15-5-8 Basic Requirement

All property desiring sewer service shall, as a minimum requirement of service, provide as a portion of the Town system a minimum of one-half of an eight-inch sewer for the entire frontage of the parcel.

Section 15-5-9 Oversizing

In the event the Town requires that a trunk in lieu of a main be installed, the Town will pay for the difference in size between the trunk and the main, providing there are sufficient funds in the capital improvements budget. Should there not be sufficient funds, the Town shall have no responsibility or requirement to pay for oversizing and, therefore, the extension of the trunk cannot be installed unless the developer or owner pays both the cost of a main and the cost for oversizing. Under the terms of this reimbursement agreement, oversizing is reimbursable through line payback charges.

Section 15-5-10 Dedication of Right-of-Way

No sewer facilities shall serve any parcel of land which abuts any existing or proposed street or alley unless the one-half of any such abutting right-of-way which is located on the same side of the center of the street or alley has been dedicated for the full width of the parcel where it abuts so as to meet the standards for each right-of-way as set forth in the General Plan.

Section 15-5-11 Payment

Separate accounts shall be established for all extension monies paid to the Town for eventual reimbursement to the developer or owner. The Town Clerk shall make payment therefrom when authorized in writing by the Town Engineer.

Article 15-6 VIOLATIONS AND PENALTIES [141]

15-6-1 Violations
15-6-2 Unlawful and Prohibited Acts

Section 15-6-1 Violations

The violation of any section of this Chapter or refusal to pay any fees when due, shall be sufficient cause for the Town to discontinue sewer service to any premises, and such service shall not be restored until such violations have been discontinued or eliminated and all outstanding charges paid. The discontinuance of sewer service shall be accomplished by physically cutting and blocking the building connection. A charge of five hundred dollars ($500.00) shall be paid to the Town for reconnecting the sewer service. The Town shall notify the user of the proposed discontinuance of service by delivering a notice, return receipt requested, to the user and by posting a notice on the property at least ten (10) days prior to the actual disconnection.

Section 15-6-2 Unlawful and Prohibited Acts

A. It is unlawful for any person, firm or corporation to violate any of the terms of this Chapter.

B. It is unlawful for any person, firm or corporation to in any way interfere with an employee or agent of the Town in the discharge of his duties, either in the tapping of any sewer pipe, main or lateral belonging to the Town, or the laying or connecting of any such pipe, or main or lateral.

C. It is unlawful for any person, firm or corporation to deposit, or permit to be deposited, in an unsanitary manner upon public or private property within the Town or any area under the jurisdiction of the Town, any human excrement or other objectionable waste.

D. It is unlawful to discharge to any natural outlet within the Town, or in any area under the jurisdiction of the Town, any sanitary sewage, industrial wastes, or other polluted water, except where suitable treatment has been provided, in accordance with provisions of this article.

E. It is unlawful for any person, firm or corporation to maliciously or intentionally, break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is part of the municipal sewage works.

F. It is unlawful for any septic tank or scavenger waste hauler to discharge septic tank or scavenger wastes into any public sanitary sewer owned or operated by the Town.

FOOTNOTES

85 Ordinance #182 - 6/11/81
104 Ordinance #209 - 9/22/83
120 Ordinance #230 - 6/27/85
125 Ordinance #237 - 1/23/86
138 Ordinance #254 - 11/13/86
141 Ordinance #257 - 1/08/87
144 Ordinance #260 - 2/12/87
188 Ordinance #315 - 9/13/90
195 Ordinance #322 - 4/11/91
358 Ordinance #358 - 8/7/93
475 Ordinance #475 - 11/12/98
478 Ordinance #478 - 1/14/99
481 Ordinance #481 - 8/26/99
497 Ordinance #497 – 3/09/00
675 Ordinance #675 – 05/08/2014
690 Ordinance #690 – 06/11/2015

ZONING ORDINANCE

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Article I. PURPOSE, TITLE, INTERPRETATION, AND CONFLICT [564]

Section 101. Purpose:

This Ordinance is for the purpose of securing adequate light, pure air, and safety from fire and other dangers; conserving the values of land and buildings through the Town of Paradise Valley; lessening or avoiding congestion in the public streets; and promoting the public health, safety, comfort, morals and welfare of the citizens of the Town of Paradise Valley, Arizona.

Section 102. Title:

This Ordinance may be cited as the "Zoning Ordinance of the Town of Paradise Valley."

Section 103: Interpretation and Conflict: [564]

In interpreting and applying the provisions of this ordinance, they shall be held to be the minimum requirements for the promotion of the public safety, health, convenience, comfort, morals, prosperity, and general welfare. It is not intended by this ordinance to interfere with or abrogate or annul any ordinances, rules, regulations or permits previously adopted or issued, and not in conflict with any of the provisions of this ordinance, or which shall be adopted or issued pursuant to law relating to the use of buildings or premises and likewise not in conflict with this ordinance; nor is it intended by this ordinance to interfere with or abrogate or annul any easements, covenants, or other agreements between parties, except that if this ordinance imposes a greater restriction, this ordinance shall control.

FOOTNOTE:

564 Ordinance 564 – 11/03/2005

Article II. DEFINITIONS [84 112 164 170 179 196 200 207 376 432 477 534 548 564 566 567 617 633]

Section 201. [84 112 164 170 179 196 200 207 376 432 477 534 548 564 566 567 617]

For the purpose of this Ordinance, certain terms and words are hereby defined. Words used in the present tense shall include the future; the singular number shall include the plural, the singular; the word "building" shall include the word "structure;" the word "lot" shall include the word "plot;" and the word "shall" is mandatory.

Accessory Building / Structure[564]: A subordinate building, the use of which is incidental to that of the dominant use of the main building, or premises, including residential staff quarters; provided, however, that neither a building nor an enclosure for horses is an accessory building.

Alley: A public thoroughfare which affords only a secondary means of access to abutting property.

Anomaly: [548] A natural occurring, localized surface deviation from the natural land contour. Anomalies may include outcroppings, ridges, craters, or washes. When an anomaly affects the Open Space Criteria measurement for a building or structure, the Town Manager or designee shall eliminate the anomaly from the calculation and interpolate a simulated natural grade between the contour on each side of the anomaly for use when measuring the height of the building or structure.

Apartment House: See "Dwelling, Multiple."

Area of Jurisdiction: [207] The boundaries of Paradise Valley.

Assisted Living Home: [567] A dwelling shared as a primary residence by persons who are disabled, as defined in Arizona Revised Statutes §41-1491, who do not meet the definition of "family" as set forth in this section, who live together as a single housekeeping unit in an environment in which staff persons provide supervisory care, personal care and/or custodial care for the residents. This definition shall not apply to a home for the developmentally disabled as regulated by Arizona Revised Statutes §36-582.

Basement: [164] A story having more than one-half (1/2) its height below natural grade.

Building: Any structure for the shelter, support or enclosure of persons, animals, or property; and when separated by dividing walls without openings, each portion of such building, so separated, shall be deemed a separate building.

Camper: [564] A camper is a unit designed for travel, recreational, and vacation uses, which may be placed upon or attached to a vehicle.

Cluster Plan (CP) District: [564] A development approach that may be used in the R-43 or R-35 Cluster Plan zoning district that retains the same house per acre ratio as the R-43 or R-35, zoning

districts permiting reduced lot sizes in order to allow undeveloped land to be preserved as open space. This approach may be utilized to preserve natural features or provide greater than normal setbacks from heavily traveled thoroughfares.

Country Club: [564] A use of land, with traditional accessory uses, the primary purpose of which is for playing golf, tennis, handball or other similar recreational activities. Memberships or fees may be required for participation.

DHS: [633] The Arizona Department of Health Services.

DHS Rules and Regulations: [633] The adopted regulations of DHS relating to the provisions of Title 36, A.R.S. § 36-2801 et seq.

Dwelling: Any building, or portion thereof, which is designed or used exclusively for residential purposes.

Dwelling, Single-Family: A building designed for occupancy by one (1) family.

Dwelling, Two-Family: A building designed for occupancy by two (2) families.

Dwelling, Multiple: A building or portion thereof designed for occupancy by three (3) or more families.

Dwelling Unit: One (1) or more rooms in a dwelling designed for occupancy by one (1) family for living purposes and having its own cooking and sanitary facilities.

Elevation: [164] Height above mean sea level (MSL) as established by the United States Coast and Geologic Survey.

Encroachment Line: Boundaries shown on Plates 7 & 8 of Volume I, Indian Bend Wash Report prepared by the U. S. Army Corps of Engineers which show lateral limits or lines along streams within which in the direction of the stream no structure of fill may be added without reducing the natural flood carrying capacity of the stream and its flood plain. Their location should be such that the natural floodway between them will handle a designated floodflow. The encroachment lines will be based upon the volumetric flow rate of a 100-year flood.

Family: An individual or two (2) or more persons related by blood or marriage or a group of not more than five (5) persons, excluding residential staff, who need not be related by blood or marriage living together as a housekeeping unit.

Fifty-year Flood: A flood that has a two percent (2%) chance of occurring in any one year based upon the criteria established by the Arizona Water Commission.

Finished Grade: [164] The prepared elevation of the ground surface under a structure and within the lot setback lines.

Flood or Flood Waters: A temporary overflow of water on lands not normally covered by water.

Flood Plain: The relatively flat areas or low lands adjoining the channel of a watercourse, or areas where drainage is or may be restricted by manmade structures which have been or may be covered partially or wholly by floodwater, but shall compose an area not less than that area contained between the fifty-year flood line and the one hundred year flood line.

Floodplain Board: [207] The Town Council of the Town of Paradise Valley.

Floodplain Regulations: The codes, ordinances, and other regulations relating to the use of land and construction within the channel and floodplain areas, including zoning ordinances, subdivision regulations, building codes, setback requirements, open area regulations and similar methods of control affecting the use and development of the areas.

Floodway: The channel of the stream or body of water and that portion of the flood plain that is inundated by a flood and therefore used to carry the flow of the flood.

Floor Area, Total: [617] The area under roof added to the floor area of any second story. The total floor area also includes any courtyard areas, the solid portion(s) of trellises and/or open weave roofs, and all area under roof in accessory buildings such as gazebos, ramadas and other accessory buildings. The total floor area excludes the floor area of any fully subterranean portions of a building.

Floor Area Ratio: [432] The total floor area divided by the total lot area.

Frontage: All property on one (1) side of a street between two (2) intersecting streets (crossing or terminating) measured along the line of the street, or, if the street is dead end, then all of the property abutting on one (1) side between an intersecting street and the dead end of the street including property fronting on a cul-de-sac.

Garage, Private: [84] Any accessory building designed or used for the storage of motor-driven vehicles.

Garage, Public: A building or portion thereof, other than a private or storage garage, designed or used for servicing, repairing, equipping, hiring, selling or storing motor-driven vehicles.

Garage, Storage: A building or portion thereof designed or used exclusively for housing of four (4) or more motor-driven vehicles.

Golf Course: [564] A tract of land laid out with at least nine holes for playing a game of golf and improved with tees, greens, fairways, and hazards. A golf course may include a clubhouse and associated uses.

Grade Slope: [164] [548] The degree of rise or descent of the ground surface. Please refer to illustration 201.

Guardgate: [162] A manually, mechanically, or electrically controlled gate device built as a free-standing structure or in conjunction with a guardhouse in compliance with all the terms granted in a special use permit, and located on a private road as shown on the site plan approved with the special use permit, for the purpose of regulating and monitoring pedestrian and/or

vehicular traffic into a subdivision or neighborhood and promoting security within the subdivision or neighborhood.

Guardhouse: [162] A building built in compliance with all building codes of the Town of Paradise Valley and all the terms granted in a special use permit and located on a private road or on private property adjacent to a private road as shown on the site plan approved with the special use permit, for the purpose of manually or electronically regulating and monitoring pedestrian and/or vehicular traffic into a subdivision or neighborhood and promoting security with the subdivision or neighborhood; provided, however, a guardhouse shall not be designed or used for sleeping or living purposes.

Guest Ranch: A building or group of buildings containing two (2) or more guest units, other than a hotel, motel or resort hotel, and having outdoor recreational facilities such as horseback riding, swimming, tennis courts, shuffleboard courts, barbecue and picnic facilities.

Guest House: [84] An accessory building of one or more rooms designed for occupancy by not more than one family. A guest house shall have its own sanitary facilities.

Height Measurement: [164 207 376 repealed and replaced 548] The height of a building or structure is measured based on the following criteria: 1) The vertical distance from the lowest point of the natural grade below the structure to the highest point of the structure. Maximum building height varies with lot size. See Article X for detail; and 2) The Open Space Criteria which limits allowable building height near the perimeter of the lot. See definition of Open Space Criteria.

Hillside Development Area: [112 207] Any parcel of land in which any portion of the parcel lies within the areas marked in Figure II and any other parcel with a building site slope of ten percent (10%) or greater, measured as a vertical rise of ten (10) feet in a horizontal distance of 100 feet.

Home Occupation: [566] An occupation, profession, or other business activity conducted at a residence.

Hotel: A building in which lodging is provided and offered to the public for compensation and which is open to transient guests.

Institution: A building or buildings occupied by a non-profit corporation or a non-profit establishment for public use.

Loading Space: A permanently-maintained space on the same lot as the main building accessible to a street or alley and not less than ten (10) feet in width, twenty (20) feet in length, and fourteen (14) feet in height.

Lot: [477] A parcel of land occupied or intended for occupancy by one main building, together with any accessory buildings including the open spaces required by this Ordinance and having either:

a. adequate frontage upon a public street, or

b. adequate and recorded access to a public street by a private road as defined by this ordinance.

Lot Area: [196 432] The area bounded by the recorded property description of a lot, excluding any dedicated right of way, street or alley, and excluding any private road for which a Special Use Permit has been granted.

Lot, Corner: A lot adjoining two (2) or more streets at their intersection.

Lot, Depth of: The main horizontal distance between the front and rear lot lines.

Lot, Double Frontage: A lot having a frontage on two (2) non-intersection streets, as distinguished from a corner lot.

Lot, Interior: A lot other than a corner.

Lot, Key: A lot adjacent to a corner lot having its side lot line in common with the rear lot line of the corner lot and facing on the street which forms a side boundary of the corner lot.

Lot Lines: The lines bounding a lot.

Lot of Record: A lot which is a part of a subdivision, the plat of which has been recorded in the office of the Clerk of Maricopa County Recorder's office; or parcel of land, the deed of which is recorded in the office of the County Recorder.

Lot Width: [52 432 564] The diameter of the circle described in Section 6-3-5.G of the Town Code. Minimum lot widths are shown on Table 1001-A1.

Medical Marijuana: [633] Marijuana or cannabis, including all parts of any plant of the genus cannabis whether growing or not, and the seeds of such plant, approved under state law for treatment of persons suffering from debilitating medical conditions, as designated in A.R.S. § 36-2801 et seq. and the DHS rules and regulations.

Medical Marijuana Cultivation: [633] The process by which a person grows a medical marijuana plant as allowed by A.R.S. § 36-2801 et seq. and the DHS rules and regulations.

Medical Marijuana Designated Caregiver Cultivation: [633] The cultivation of medical marijuana by a designated caregiver, as defined in A.R.S. § 36-2801 et seq. and 36-2804 et seq.

Medical Marijuana Dispensary: [633] A non-profit entity, as defined in A.R.S. § 36-2801(11), that acquires, possesses, transfers, transports, supplies, sells or dispenses marijuana or related supplies and educational materials to qualifying patients, caregivers or dispensary agents, as defined in A.R.S. § 36-2801(2).

Medical Marijuana Dispensary Offsite Cultivation Site: [633] A building, dwelling, or structure used for the cultivation or storage of medical marijuana for use by a medical marijuana dispensary, as designated in Arizona Revised Statutes, Title 36, A.R.S. § 36-2801 et seq. or DHS rules and regulations.

Medical Marijuana Infusion Facility: [633] A facility that incorporates medical marijuana into consumable/edible goods by means of cooking, blending or incorporation.

Medical Marijuana Qualifying Patient Cultivation: [633] Cultivation of medical marijuana by a qualifying patient, as defined in A.R.S. § 36-2801(13), who is authorized to cultivate marijuana plants pursuant to the provisions of A.R.S. § 36-2801 et seq. and 36-2804 et seq.

Microwave Antenna: [96] A device for the reception and amplification of microwave frequency electromagnetic energy, typically in the shape of a shallow dish, and which may be mounted on a permanent, temporary, or portable structure.

Mobile Home: [564] A mobile home is a unit which : a) is not self-propelled, b) may be placed upon or attached to a vehicle, c) is constructed in such a manner as to permit occupancy as a dwelling or sleeping place for one or more persons, and d) is or may be used as a conveyance upon streets or highways.

Motel: Any building or group of buildings containing guest rooms or dwelling units, some or all of which have a separate entrance leading directly from the outside of the building with garage or parking space located on the lot and designed, used, or intended wholly or in part for the accommodation of automobile transients. Motel includes motor court, motor lodge, and tourist court, but not trailer court, guest ranch or resort hotel.

Motor Home: [564] A self-propelled vehicle capable of being used for the living, sleeping, eating, or accommodation of persons.

Natural Grade: [164] The elevation of the ground surface in its natural state before man-made alterations.

One-hundred-year Flood: A flood that has one per cent chance of occurring in any one year based upon the criteria established by the Arizona Water Commission.

Open Space: [564] Land and water areas retained for active or passive recreation purposes or for essentially undeveloped areas retained for the purpose of resource protection or preservation.

Open Space Criteria: [548] This criterion maintains view corridors around the perimeter of the lot by further limiting building height near property lines. Maximum allowable structure height shall not exceed a plane beginning at 16 feet above the natural grade, at 20 feet setback from all property lines and sloping upward at a 20% angle, perpendicular to the nearest property line. See Article X for detail and refer to Figure 1001-2 for example.

Open Space Preserve District (OSP): [564] This Zoning District is intended to preserve and protect in perpetuity undeveloped real property and developed real property that can be returned to its natural state, , including scenic and conservation easements, on and around the Mountain Preserve in the Town of Paradise Valley, with the goal of preserving the natural landscape, desert plants, wildlife, and the scenic beauty of mountain areas of the Town.

Parking Lot: A parcel of land devoted to unenclosed parking spaces.

Parking Space: [84] A permanently surfaced area, enclosed or unenclosed, having an area of not less than one hundred eighty (180) square feet, together with a driveway connecting the parking space with a street or alley and permitting ingress and egress of an automobile.

Person: Any individual or his agent, firm, partnership, association, corporation, or agent of the aforementioned groups, or the state or any agency or political subdivision thereof.

Private Road: [477] Where this Ordinance refers to the term "Private Road" any such Private Road shall meet and be in compliance with the following criteria:

(1) The minimum right-of-way width shall be fifty (50) feet.

(2) Where the said private road is to provide access to one or two residences, driving surface shall not be less than 16 feet in width and shall be covered at a minimum with a 4-inch depth of aggregate base course meeting Town Standards (Article 5-6 of the Town Code) or a minimum of a 4-inch depth of decomposed granite.

(3) Where access to a public road for three (3) or more residences is to be provided by way of a private road, all standards and requirements for subdivisions as contained in the Code and Ordinances of the Town of Paradise Valley shall apply, and such private road shall be subject to those conditions imposed by reason of the issuance of a use permit in accordance with the Code and Ordinances of the Town of Paradise Valley.

(4) All private roads, for so long as they shall remain private, shall be maintained to the foregoing standards, and in the event the Town of Paradise Valley is required to perform any maintenance upon the same for the health and welfare of the people of the Town of Paradise Valley, the said Town may assess the cost thereof against the party, his heirs, executors, administrators, legatees and assigns, having applied for a residential building permit utilizing the provisions of this sub-paragraph (b); agreement thereto by such applicant shall be a condition of issuance of any residential building permit.

Public/Quasi Public: [564] Structures and uses principally of an institutional nature and serving a public need, such as religious institutions, schools, libraries, governmental offices, museums, post offices, police and fire stations, public utilities, and other public services that provide governmental, educational, institutional, cultural, recreational, religious, or other similar types of public services, but not including the operation of a public bar, restaurant or recreational facility as a commercial enterprise.

Resort: [54] [564] A resort is a facility, operated under a single unified management structure, containing guest units primarily for the temporary residency of persons in a physical setting that provides a high level of guest amenities, recreational opportunities and a quality of design that may include architectural features, extensive open space and landscaping.

R-175 District: [564] This district is intended to promote and preserve a very low-density residential character and maintain open space and natural features. The principal land use is single-family

dwellings and uses incidental or accessory thereto. Lot size of at least 175,000 sq. ft. is required in this District.

R-43 District: [564] This district is intended to promote and preserve a low-density residential character and maintain open space and natural features. The principal land use is single-family dwellings and uses incidental or accessory thereto. Lot size of at least 43,560 sq. ft is required in this district.

R-35 District: [564] This district is intended to promote and preserve residential development associated with the desert landscape. The minimum size, although less than one acre, still results in a low density of population. The principal land use is single-family dwellings and uses incidental or accessory thereto. Lot size of at least 35,000 sq. ft. is required in this district.

R35A District: [564] This district only applies to portions of previously annexed subdivisions known as Firebrand Ranch and Mountain View Estates Replat, as shown on the Zoning Map. This district is intended to promote and preserve residential development associated with the desert landscape. The minimum size, although less than one acre, still results in a low density of population. The principal land use is single-family dwellings and uses incidental or accessory thereto. Lot size of at least 35, 000 sq. ft. is required in this District.

R-18 District: [564] This district is intended to promote and preserve residential development associated with the desert landscape. The principal land use is single-family dwellings and uses incidental or accessory thereto. Lot size of at least 18,000 sq. ft is required in this district.

R-18 A District: [564] This district applies to previously annexed subdivisions known as Arcadia Square, Orange Valley Estates No. 3, Grosse Point Two, Quail Vista and to certain portions of Firebrand Ranch and Mountain View Estates Replat, as shown on the Zoning Map. The principal land use is single-family dwellings and uses incidental or accessory thereto. Lot size of at least 18,000 sq. ft. is required in this district.

R-10 District: [564] This district applies to previously annexed subdivisions known as Mountain Shadows East, Mountain Shadows West, and Colonia Miramonte. This district is intended for single-family dwellings and uses incidental or accessory thereto, with a lot size of at least 10,000 square feet.

Residential Staff: An accessory building occupied only by a person employed for a substantial portion of his time in the performance of domestic or agricultural tasks on the premises, and by the immediate family of such person. Residential staff quarters may have cooking facilities, and may not be rented for profit.

School: Unless otherwise specified, the term "school and college" shall be limited to private or public places of general instruction and shall not include nursery schools, dancing schools, riding academies, or trade or specialized vocational schools.

Service Station: Any building or premises used principally for the storing, dispensing or offering for sale at retail of automobile fuels or oils.

Shopping Center: A group of stores planned and designed for the site on which it is built, functioning as a unit, with off-street parking provided on the property as an integral part of the unit.

Sign: [170 200]

Any device for visual communication including political handbills and posters but not including any flag, badge or insignia of a government or governmental agency, nor of any civic, charitable, religious, patriotic, fraternal or similar organization.

a. Area of Sign:

(1) Free-standing Letters Sign: The area of such sign is ninety percent (90%) of the area enclosed within the smallest regular geometric figure needed to encompass all letters, insignias or symbols.

(2) Other Signs: The area of other signs is the total area within the outer edge of the sign.

(3) Computations: In every event, computation of all allowable sign area includes all existing signs on the premises, whether such signs be conforming or valid nonconforming under the terms of this Ordinance. Identifying street numbers shall not be computed as part of the total sign area.

b. Banner sign: [200] Means a canvas, flexible plastic device or other cloth material which can be supported and mounted by the use of ropes and intended for visual communication, and directly related to activities on site.

c. Double-faced sign means a sign with two faces; in computing the number of signs, a double-faced sign shall be considered as two (2) signs.

d. Free-standing Letters Sign: A sign composed of letters superimposed on a wall.

e. Indirect lighting means a source of external illumination located a distance away from the sign which lights the sign, but which is itself not visible to persons viewing the sign from any ordinary position of view.

f. Internal lighting means a source of illumination which is entirely within the sign and is not visible.

g. Non-commercial sign means a sign for the expression of a personal communication such as religious, philosophical, or political views.

h. Permanent Sign: Any sign which is intended to be of a lasting and enduring nature, remaining unchanged in character and position and affixed in a permanent manner to the ground, wall or building; made of or composed of materials of such quality that the sign will not deteriorate in appearance due to exposure to wind, rain, sun or the passage of time.

i. Temporary Sign: Any sign not permanently attached to the ground, wall, or building; made of or composed of materials of such quality that the sign will not deteriorate in appearance due to exposure to wind, rain, sun or the passage of time.

Stable: [94] Any building or structure used to house or provide shelter for horses, provided that when a stable building is used for additional purposes, including by way of example, but not limited to, housing of horse attendants, etc., only the portions of the building used for the housing of horses and/or the keeping of feed or tack shall be deemed stable area; remaining portions of the building shall be deemed accessory building area. The term, "stable", shall not include within the scope of its definition what is commonly referred to as a corral.

Story: [164] That portion of a building, other than a basement included between the surface of any floor and the surface of the floor next above it, or, if there be no floor above it, then the space between the floor and the ceiling next above it.

Story, Half: A space under a sloping roof which has the line of intersection of roof decking and wall face not more than three (3) feet above the top floor level, and in which space not more than two-thirds (2/3) of the floor is finished off for use. The half story containing independent apartment or living quarters shall be counted as a full story.

Street, Public: A passageway for general use of pedestrian or vehicular traffic, established as such by governmental authority.

Street, Private: Any other passageway for pedestrian or vehicular traffic.

Street Line: A dividing line between a lot, tract or parcel of land and a contiguous street (right-of-way).

Structural Alterations: Any change in the supporting members of a building, such as bearing walls or partitions, columns, beams or girders, or any complete rebuilding of the roof.

Structure: Anything constructed or erected, the use of which requires a fixed location on the ground.

SUP District R-18 CP Single-Family Residential District: [564] A residential subdivision approved by prior Special Use Permit only and applicable only to those subdivisions known as Cheney Estates (and only a portion thereof) and Via Vista.

Time-Share Project: [99] A project in which a purchaser receives the right in perpetuity, for life or for a term of years to the recurrent, exclusive use or occupancy of a lot, parcel, unit or segment of real property, annually or on some other periodic basis for a period of time that has been or will be allotted from the use or occupancy periods into which the project has been divided.

Trailer, Transport: [564] Any vehicle so constructed that is suitable for being attached to a motor vehicle and capable of being used for transporting goods, materials, equipment, boats, vehicles, or livestock.

Use: The purpose for which land or a building is occupied, maintained, arranged, designed or intended.

Use, Accessory: A subordinate use customarily incident to and conducted on the same lot with the principal use or building including bona fide residential staff quarters.

Watercourse: Any lake, river, stream, wash, arroyo, channel or other body of water having banks and bed through which waters flow at least periodically. The term may include specifically designated areas in which substantial flood damage may occur.

Yard: An open space at grade level between the setback line and the nearest parallel lot line, unoccupied and unobstructed by any portion of a structure from the ground upward, except as otherwise provided herein.

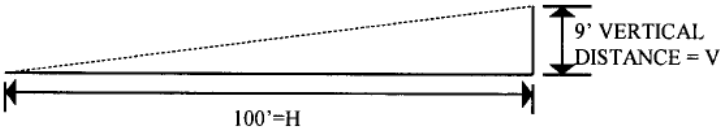
Yard, Front: [55] [196] [432] [534] A yard extending across the front width of a lot and being the minimum horizontal distance between the right-of-way line and the front setback line.

Yard, Rear: [196] A yard extending across the rear width of a lot and being the minimum horizontal distance between the rear lot line and the rear setback line. On both corner lots and interior lots the rear yard shall in all cases be at the opposite end of the lot from the front yard.

Yard, Side: [196] A yard between the side setback line and the side lot line of a lot and extending from the front yard to the rear yard, and being the minimum horizontal distance between a side lot line and the side setback line. An interior side yard is defined as the side yard adjacent to a common lot line.

ZONING ORDINANCE

Figure 201
Grade Slope



HORIZONTAL DISTANCE = H
GRADE OR SLOPE CALCULATION = V/H
V/H = 9/100 = 9% GRADE

FOOTNOTE:

51 Ordinance #97 – 2/13/75
52 Ordinance # 96 – 2/13/75
53 Ordinance # 105 – 8/14/75
54 Ordinance # 119 – 6/10/76
55 Ordinance # 110 – 1/8/76
84 Ordinance # 180 – 4/23/81
94 Ordinance # 196 – 5/27/82
96 Ordinance # 201 – 3/24/83
99 Ordinance # 204 – 4/28/83
112 Ordinance # 221 – 9/27/84
164 Ordinance # 288 – 9/29/88
170 Ordinance # 295 – 2/9/89
179 Ordinance # 303 – 10/26/89
196 Ordinance # 323 – 6/13/91
200 Ordinance # 12/19/91
207 Ordinance # 345 – 5/14/92
376 Ordinance # 376 – 8/25/94
432 Ordinance # 432 – 12/19/96
477 Ordinance # 477 – 2/25/99
534 Ordinance #534 – 01/22/2004
548 Ordinance #548 – 03/10/2005
564 Ordinance # 564 – 11/03/2005
566 Ordinance #566 – 01/12/2006
567 Ordinance #567 – 11/17/2005
617 Ordinance #617 – 12/03/2009
633 Ordinance #633 – 04/28/2011

Article III. DISTRICTS, BOUNDARIES, AND AMENDMENTS

Section 301.Zoning Districts [109 166 175 564 658]

The Town of Paradise Valley, Arizona, is hereby divided into fourteen (14) classes of "Districts" to: a) Classify and regulate the location of residential and non-residential land uses, b) Establish the limitations and restrictions applicable to such land uses, c) Regulate and limit the height and bulk of buildings hereafter erected, reconstructed, or structurally altered, d) Regulate and limit the intensity of the use of lot areas, and e) Regulate and determine the area of yards, courts, and other open spaces within and surrounding such buildings. The use, heights, and area regulations are uniform in each district, and said districts shall be known as:

R-175 Single-Family Residential District [175]
R-43 Single-Family Residential District
R-43 CP Single-Family Residential District
R-35 Single-Family Residential District
R-35 CP Single-Family Residential District
R-35A Single-Family Residential District
R-18 Single-Family Residential District
R-18A Single-Family Residential District
R-10 Single-Family Residential District [109]
SUP District R-18 CP Single-Family Residential District*
OSP Open Space Preserve District
SUP District (Religious Facility, Private School, Non-Profit Organization, Public/Quasi Public)
SUP District (Resort, Country Club, Golf Course)
SUP District (Medical Office, Kennel, Veterinary Clinic) [658]

* Provisions allowing and governing this District were repealed by Ordinance 431 in 1996.

Section 302 Zoning Map. [410 564]

The Boundaries of these districts are shown upon the Zoning Map and made a part of this ordinance. The Zoning Map and all notations, references and other information shown thereon are a part of this ordinance and have the same force and effect as if the maps and all the notations, references and other information shown thereon were fully set forth and described herein, which Zoning Map is attached hereto and made a part of this ordinance by reference and any amendment to Zoning Map adopted by ordinance shall become a part of this ordinance by reference as though fully set forth herein. Properties rezoned by Special Use Permit shall reflect the predominant land use category as either Resort, Country Club, Golf Club; Religious Facility, Private School, Non-Profit Organization, Public/Quasi-Public; or Medical Office, and shall be designated as such on the Zoning Map.

Section 303 Rules Where Uncertainty May Arise [564]

Where uncertainty exists with respect to the boundaries of the various districts as shown on the map accompanying and made a part of this ordinance, the following rules apply:

1. The district boundaries are either street or alleys unless otherwise shown, and where the districts designated on the map accompanying and made a part of this ordinance are bounded approximately by street or alley lines, the street or alley shall be construed to be the boundary of the district.

2. Where the district boundaries are not otherwise indicated, and where the property has been or may hereafter be divided into blocks and lots, the district boundaries shall be construed to be the lot lines, and where the districts designated on the map accompanying and made a part of this ordinance are bounded approximately by lot lines, the lot lines shall be construed to be the boundary of the districts unless the boundaries are otherwise indicated on the map.

3. In unsubdivided property, the district boundary lines on the map accompanying and made a part of this ordinance shall be determined by use of the scale appearing on the map.

Section 304 Annexations[564]

An area under consideration for annexation may be zoned at the time of annexation or within six (6) months after the annexation to a Town zoning district comparable to, but not greater in intensity than that permitted in the County. Council approval of the annexation constitutes authorization for the Town to initiate action to establish the applicable Town Zoning District for the newly annexed area within six (6) months after the annexation.

Section 305 Vacated Streets[564]

Whenever any street, alley or other public way is vacated by official action of the Town Council, the zoning districts adjoining each side of such street, alley or public way shall be automatically extended to the center of such vacation and all area included in the vacation shall then and henceforth be subject to all appropriate regulations of the extended districts.

Section 306 Amendments [564]

The Town Council may from time to time, upon the recommendation of the Planning Commission, amend, supplement, or change zoning district boundaries, the uses and/or restrictions in Special Use Permit Districts, for those uses and pursuant to those procedures set forth in Article XI, or the regulations herein or subsequently established. Recommendations for such amendment may be initiated by the Council or the Commission on their own motion, or by property owner application for district related changes as set forth in Section 306. Such amendments shall be consistent with and conform to the Land Use Map of the Town's adopted General Plan. Minor amendments within a SUP District may be approved by the Planning Commission pursuant to the limitations and procedures set forth in Article XI.

Section 307 Application for Amendment [564]

Applications for amendments shall be made on a form provided therefore and shall be signed by the real property owner or the owners of 80 percent or more of the area for which the amendment is applied for. Said application shall be submitted to the Town and checked for authenticity of ownership before an application may be accepted.

Section 308 Public Hearing [564]

Every application for amendment of the ordinance shall be considered by the Planning Commission as follows:

1. A citizen review session shall be held at a work-study session of the planning commission scheduled at least 10 days prior to the public hearing for the consideration of the proposed text amendment. Notice of the citizen review session shall be given, in conformance with Ordinance Number 523, to landowners and other citizens potentially affected by the proposed text amendments at least 10 days prior to the Planning Commission work-study session scheduled for the citizen review of the proposed text amendments. This notice shall state the date, time, and place of the citizen review session and shall include a general explanation of the substance of the proposed text amendment to the Zoning Ordinance.

2. A public hearing shall be held only after appropriate publication of a public notice of the time, place and date of such hearing is given in an official newspaper or a newspaper of general circulation in the Town of Paradise Valley at least fifteen (15) days prior to such hearing. The Commission may, upon its own motion, after such public hearing, submit to the Council a report of its hearing and a recommendation of amendment of this ordinance.

3. The Town Council shall arrange to hold its public hearing, at which time legislative action in regard to the amendment shall be determined. Such legislative action can include: approval as submitted by the applicant; approval with stipulations or modifications required; denial; continuance; or referral back to the Planning Commission for further consideration; or such other action as the Town Council may decide in its legislative discretion. Notice of the time, place and date of such Council hearing shall be appropriately published in an official newspaper, or a newspaper of general circulation in the Town of Paradise Valley at least fifteen (15) days prior to such hearing.

4. If the Council hearing is for the purpose of changing the Residential District Classification or consideration of a Special Use Permit District Application or any amendment to an existing Special Use Permit District for any property, the time, place and date of the Council hearing shall be posted on the affected property at least seven (7) days prior to said hearing. For all other proposed amendments to this ordinance, the time, place and date of the Council hearing shall be posted in three (3) public places at least seven (7) days prior to said hearing.

Section 309 Reconsideration of Denied Amendments [564]

In the event that an application for a minor amendment to the uses and/or restrictions in a Special Use Permit District is denied by the Planning Commission, the same or a substantially similar application for a minor amendment, as determined by the Town staff, shall not be considered for a period of at least one (1) year from the date of said denial unless specifically authorized by the Planning Commission, provided, however, such denial shall not limit an applicant from filing for a major amendment to the uses and/or restrictions in a Special Use Permit District even if the application is the same or similar to those contained in the minor amendment application. In the

event that an application for a Special Use Permit, a major amendment to the uses and/or restrictions in a Special Use Permit District, or an application for a change in zoning district boundaries or any other application subject to a public hearing by the Town Council is denied, neither the application, nor a substantially similar application, as determined by the Town Staff , shall be considered for a period of at least one (1) year from the date of said denial action unless specifically authorized by the Town Council.

Section 310 Protests Against Amendment [564]

If the owners of 20 percent or more either of the area of the lots included in the proposed change, or of those immediately adjacent in the rear or any side thereof extending one hundred fifty (150) feet therefrom, or of those directly opposite thereto extending one hundred fifty (150) feet from the street frontage of the opposite lots, file a protest in writing against a proposed amendment, it shall not become effective except by the favorable vote of three-fourths of all members of the Town Council. If any members of the Town Council are unable to vote on such a question because of conflict of interest, then the required number of votes for passage of the question shall be three-fourths of the remaining members of the Town Council, provided that such required number of votes shall in no event be less than a majority of the full membership of the legally established governing body. (Pursuant to §9-462.04(H) of the Arizona Revised Statutes). All written protests shall be filed with the Town Clerk's Office no later than 48 hours before the scheduled meeting at which the Council votes upon the proposed request and shall be signed by the protesting real property owner and checked for authenticity of ownership before the written protest may be accepted.

FOOTNOTE:

109 Ordinance # 217 – 6/14/84
164 Ordinance # 288 – 9/29/88
166 Ordinance # 290 – 12/01/88
175 Ordinance # 298 – 4/13/89
207 Ordinance # 345 – 4/23/92
403 Ordinance #403 - 3/23/95
410 Ordinance # 410 – 5/09.96 (Re-zone)
432 Ordinance # 432 –12/19/96
564 Ordinance # 564 – 11/03/2005
658 Ordinance #658 – 12/12/2012

Article IV. (R-175) SINGLE-FAMILY RESIDENTIAL DISTRICT [175 432 564 567 566]

Section 401. Purpose

This district is intended to promote and preserve a very low-density residential character and maintain open space and natural features. The principal land use is single-family dwellings and uses incidental or accessory thereto. Lot size of at least 175,000 sq. ft. is required in this District

This Ordinance shall provide that all existing structures on any parcel designated as R-175 shall not have the status of a nonconforming use. However, any additions to such structures shall conform to all regulations applicable to new construction in said district.

Section 402. Use Regulations [192 196 564 567 566]

A building or premises shall be used only for the following purposes:

1. Single-family dwelling.

2. The keeping of horses for use of the family residing on the premises; provided that:

    a. The number of horses shall be limited to two head for each contiguous full acre under single ownership;

    b. A stable shall be limited to 900 square feet in area under roof for the first full acre plus 500 square feet for each additional contiguous full acre under single ownership, up to a maximum of 5,000 square feet. Stables shall not be allowed in the front yard and shall maintain a setback of at least 40 feet from any lot line. No stable shall exceed 20 feet in height from natural grade;

    c. The provisions of the Maricopa County Health Code, adopted on January 1, 1967, and all amendments thereto shall apply to the keeping of horses within the Town, even when those provisions are more restrictive than the other parts of this subsection;

    d. Fences or walls establishing the perimeter of a corral used in the keeping of horses shall maintain a rear or side setback of at least 20 feet and a front yard setback of at least 40 feet from any lot line.

3. Accessory buildings and uses customarily incident to the above uses, including a private garage, guesthouse, and residential staff quarters, and home occupations. Any accessory building not attached to the main structure shall be located not less than 60 feet from the front lot line.

4. Temporary buildings for uses incidental to construction work, which buildings shall be removed upon the completion or abandonment of the construction work, or, upon

the expiration of a period of one (1) year from the time of erection of such temporary buildings, whichever is sooner.

5. Walls or fences, or both, subject to the provisions of Article XXIV.

6. Private swimming pool, provided that:[196]

   a. No pool shall be located in any yard.

   b. Full compliance with all terms of Article 5-2-2(F) of the Town Code is made.[192 587a]

7. Home occupation in compliance with Article XVI. Home Occupation

8. Tennis courts, provided that:[196]

   a. No tennis court or tennis court fences (walls) higher than six (6') feet shall be constructed or established in any yard;

      1. For the purpose of determining compliance with this setback requirement only, "Tennis court" is defined as a smooth surface or grass covered area that is used or intended to be used for playing the game of tennis, which shall consist of the area in which the tennis ball must fall in order to be in-play and a valid play by the player so hitting the ball.

      2. Where a tennis court has two sets of in-play side-lines for singles games and for doubles games, tennis court shall be construed as the area in which the tennis ball must fall in order to be in-play and a valid play by the player so hitting the ball for doubles games.

      3. End of the tennis court means the baselines of the tennis court, which are parallel to the tennis court net.

      4. Side of the tennis court means the sidelines of the tennis court, which are perpendicular to the tennis court net.

   b. Fences or walls located within thirty feet of a tennis court which is located on the same lot as the fence or wall and which are substantially parallel to a perimeter of the tennis court shall not exceed six (6) feet in height. However, such a tennis court fence or wall may reach ten (10) feet in height if all portions of the wall or fence that are above six (6) feet in height are comprised of a material or substance that is (1) open weave, open mesh, chain link, or grille, and (2) is not a complete barrier to either the flow of air or to visibility.

      1. Measuring height: For the purpose of this subsection, height shall be measured from the playing surface of the tennis court. However, if a tennis court is depressed (reduced in altitude below the natural grade of the land it is situated upon) so that its playing surface lies below the

natural grade (elevation) of all of the land that surrounds the tennis court on the lot it is situated upon, then the six foot fence and wall maximum height limitation, supra, shall be measured from the natural grade of the land at the point of the fence or wall, except that the ten foot fence and wall absolute maximum height limitations, supra, shall be measured from the playing surface of the tennis court as provided in the preceding sentence.

2. Exceptions:

(a) Plants and vegetation shall not be deemed to be a fence or wall nor part of any fence or wall.

(b) Not more than one of the four sides and ends of a tennis court may be enclosed in part by a backboard for tennis practice that is not more than thirty (30) feet in length, nor more than ten (10) feet in height, nor more than one (1) foot in width.

c. All types or forms of lighting or illumination of tennis courts are prohibited and unlawful to install or maintain except where:

1. the height of such lights or illumination does not exceed twenty (20) feet measured from the tennis court playing surface, and

2. the light emitting element and reflecting device of all lighting or illumination units is hooded or shielded so that it is not visible from any adjacent lot or real property, and

3. such tennis court lights or illuminating units do not direct light, either directly or through a reflecting device, upon any adjacent real property, and

4. such tennis court lights or illumination units are not in use between 10:00 p.m. and sunrise.

9. Assisted Living Home in compliance with Article XVII, Assisted Living Home. [567]

Section 403 Parking Regulations [564]

For all residential dwellings hereafter erected, or for any buildings converted to such use or occupancy, provision shall be made on the premises to provide two (2) parking spaces for each dwelling unit.

Section 404 Minimum Area, Maximum Stories, Maximum Height, Lot Width, Set Backs, and Minimum Floor Area Regulations [432] [564]

The height, area, and other regulations that apply to the R-175 District are shown in Table 1001–A1, Table 1001 - A2, and Table 1001B of this Code.

FOOTNOTE:

175 Ordinance # 298- 4/13/89
192 Ordinance #319 - 2/28/91
196 Ordinance #323 - 6/13/91
432 Ordinance #432 - 12/19/96
564 Ordinance # 564 – 11/03/2005
567 Ordinance # 567 – 11/17/2005
566 Ordinance #566 – 01/12/2006
587a Corrected for Scrivener's Error in Ordinance 587 (Reorganization of Chapter 5)

Article V. (R-43) SINGLE-FAMILY RESIDENTIAL DISTRICT [170 432 534 564 567 566]

Section 501. Purpose [564]

This district is intended to promote and preserve a low-density residential character and maintain open space and natural features. The principal land use is single-family dwellings and uses incidental or accessory thereto. Lot size of at least 43,560 sq. ft is required in this district.

Section 502. Use Regulations [164 170 192 567 566]

A building or premises shall be used only for the following purposes:

1. Single-family dwelling.

2. [94] The keeping of horses for use of the family residing on the premises; provided that:

   a. The number of horses shall be limited to two head for each lot, or for each contiguous full acre under single ownership;

   b. [164] A stable shall be limited to 900 square feet in area under roof for the first full acre plus 500 square feet for each additional contiguous full acre under single ownership, up to a maximum of 5,000 square feet. Stables shall not be allowed in the front yard and shall maintain a setback of at least 40 feet from any lot line. No stable shall exceed 20 feet in height from the natural grade;

   c. The provisions of the Maricopa County Health Code, adopted on January 1, 1967, and all amendments thereto shall apply to the keeping of horses within the Town, even when those provisions are more restrictive than the other parts of this sub-section;

   d. Fences or walls establishing the perimeter of a corral used in the keeping of horses shall maintain a rear or side yard setback of at least 20 feet and a front yard setback of at least 40 feet from any lot line.

3. Accessory buildings and uses customarily incident to the above uses, including a private garage, guesthouse, and residential staff quarters, and home occupations. Any accessory building not attached to the main structure shall be located not less than 60 feet from the front lot line.

4. Temporary buildings for uses incidental to construction work, which buildings shall be removed upon the completion or abandonment of the construction work, or, upon the expiration of a period of one (1) year from the time of erection of such temporary buildings, whichever is sooner.

5. [170] All signs shall comply with the terms of Article XXV of this ordinance.

6. [56 84 121] Walls or fences, or both, subject to the provisions of Article XXIV

7. Private swimming pool, provided that:

   a. No pool shall be located closer than twenty (20) feet to any property line;

   b. No pool nor accessory structure thereto in a front yard shall be closer than forty (40) feet to any property line;

   c. Full compliance with all terms of Article 5-2-2(F) of the Town Code is made. [192 587a]

8. Home occupation in compliance with Article XVI Home Occupation.

9. [57] Tennis courts, provided that:

   a. No tennis court shall be constructed or established where the side of the tennis court is within thirty-two (32) feet of any lot line or where the end of the tennis court is within forty-one (41) feet of any lot line;

      1. For the purpose of determining compliance with this setback requirement only, "Tennis Court" is defined as a smooth surface or grass covered area that is used or intended to be used for playing the game of tennis, which shall consist of the area in which the tennis ball must fall in order to be in-play and a valid play be the player so hitting the ball.

      2. Where a tennis court has two sets of in-play sidelines for singles games and for doubles games, tennis court shall be construed as the area in which the tennis ball must fall in order to be in-play and a valid play by the player so hitting the ball for doubles games.

      3. End of the tennis court means the baselines of the tennis court, which are parallel to the tennis court net.

      4. Side of the tennis court means the side lines of the tennis court, which are perpendicular to the tennis court net.

   b. Fences or walls located within thirty feet of a tennis court which is located on the same lot as the fence or wall and which are substantially parallel to a perimeter of the tennis court shall not exceed six (6) feet in height. However, such a tennis court fence or wall may reach ten (10) feet in height if all portions of the wall or fence that are above six (6) feet in height are comprised of a material or substance that is (1) open weave, open mesh, chain link, or grille, and (2) is not a complete barrier to either the flow of air or to visibility.

      1. Measuring height: For the purpose of this subsection, height shall be measured from the playing surface of the tennis court. However, if a tennis court is depressed (reduced in elevation below the natural grade of the land it is situated upon) so that its playing surface lies below the natural grade

(elevation) of all of the land that surrounds the tennis court on the lot it is situated upon, then the six foot fence and wall maximum height limitation, supra, shall be measured from the natural grade of the land at the point of the fence or wall, except that the ten foot fence and wall absolute maximum height limitations, supra, shall be measured from the playing surface of the tennis court as provided in the preceding sentence.

2. Exceptions:

(a) Plants and vegetation shall not be deemed to be a fence or wall nor part of any fence or wall.

(b) Not more than one of the four sides and ends of a tennis court may be enclosed in part by a backboard for tennis practice that is not more than thirty (30) feet in length, nor more than ten (10) feet in height, nor more than one (1) foot in width.

c. All types or forms of lighting or illumination of tennis courts are prohibited and unlawful to install or maintain except where

1. The height of such lights or illumination does not exceed twenty (20) feet measured from tennis court playing surface, and

2. The light emitting element and reflecting device of all lighting or illumination units is hooded or shielded so that it is not visible from any adjacent lot or real property, and

3. Such tennis court lights or illuminating units do not direct light, either directly or through a reflecting device, upon any adjacent real property, and

4. Such tennis court lights or illumination units are not in use between 10:00 p.m. and sunrise.

10. Assisted Living Home in compliance with Article XVII, Assisted Living Home. [567]

Section 503. Parking Regulations [564]

For all residential dwellings hereafter erected, or for any buildings converted to such use or occupancy, provision shall be made on the premises to provide two (2) parking spaces for each dwelling unit.

Section 504 Minimum Area, Maximum Stories, Maxim Height, Lot Width, Set Backs, and Minimum Floor Area Regulations [564]

The height, area, and other regulations that apply to the R-43 District are shown in Table 1001 – A1, Table 1001 - A2, and Table 1001B of this Code.

FOOTNOTE:

56 Ordinance #120 - 6/24/76
57 Ordinance #102 - 7/10/75
84 Ordinance #180 - 4/23/81
94 Ordinance #196 - 5/27/82
121 Ordinance #231 - 7/25/85
164 Ordinance #288 - 9/29/88
170 Ordinance #295 - 2/9/89
192 Ordinance #319 - 2/28/91
196 Ordinance #323 - 6/13/91
432 Ordinance #432 - 12/19/96
534 Ordinance #534 – 01/22/2004
564 Ordinance #564 – 11/03/2005
567 Ordinance #567 – 11/17/2005
566 Ordinance #566 – 01/12/2006
587a Corrected for Scrivener's Error in Ordinance #587 (Reorganization of Chapter 5)

Article V-A **REPEALED**

Note: This Article, R-35A, Single-Family Residential District, was repealed by Ordinance Number 564, and combined into Article VI, (R-35 and R-35A) Single-Family Residential Districts.

Article VI. [567 566] (R-35 and R-35A) SINGLE-FAMILY RESIDENTIAL DISTRICTS [170 432 564]

Section 601. Purpose:

These districts are intended to promote and preserve residential development associated with the desert landscape. The minimum size, although less than one acre, still results in a low density of population. The principal land use is a single-family dwelling and uses incidental or accessory thereto. The only distinction between R-35 and R-35A is that R-35A shall only be applied to previously annexed subdivisions known as Firebrand Ranch and Mountain View Estates Replat. Height, area, and other regulations, and setback standards are noted in Section 604 of this Article.

Section 602. Use Regulations: [170 192 567 566]

A building or premises shall be used only for the following purposes:

1. Single-family dwelling.

2. Accessory buildings and uses customarily incident to the above use, including a private garage, guesthouse, residential staff quarters, and home occupations. Any accessory building not attached to the main structure shall be located not less than 60 feet from the front lot line.

3. Temporary buildings for uses incidental to construction work, which buildings shall be removed upon the completion or abandonment of the construction work, or upon the expiration of a period of one (1) year from the time of erection of such temporary buildings, whichever is sooner.

4. [170] All signs shall comply with the terms of Article XXV of this ordinance.

5. [58 84 121] Walls or fences, or both, subject to the provisions of Article XXIV.

6. [192] Private swimming pool, provided that:

   a. No pool shall be located closer than twenty (20) feet to any property line.

   b. No pool nor accessory structure in a front yard shall be closer than forty (40) feet to any property line;

   c. Full compliance with all terms of Article 5-2-2(F) of the Town Code is made. [192 587a]

7. Home occupations in compliance with Article XVI Home Occupation.

8. Assisted Living Home in compliance with Article XVII, Assisted Living Home. [567]

Section 603. Parking Regulations:

For all residential dwellings hereafter erected, or for any buildings converted to such use or occupancy, provision shall be made on the premises to provide two (2) parking spaces for each dwelling unit.

Section 604. Minimum Area, Maximum Stories, Maximum Height, Lot Width, Set Backs, and Minimum Floor Area: [432 564]

The height, area, and other regulations that apply to both the R-35 and R-35A Districts are shown in Table 1001–A1, Table 1001 - A2, and Table 1001B of this Code.

FOOTNOTE:

58 Ordinance #120 - 6/24/76
84 Ordinance #180 - 4/23/81
121 Ordinance #231 - 7/25/85
170 Ordinance #295 - 2/9/89
192 Ordinance #319 - 2/28/91
196 Ordinance #323 - 6/13/91
432 Ordinance #432 - 12/19/96
564 Ordinance #564 – 11/03/2005
567 Ordinance # 567 – 11/17/2005
566 Ordinance #566 – 01/12/2006
587a Corrected for Scrivener's Error in Ordinance #587 (Reorganization of Chapter 5)

Article VI-A **REPEALED**

Note: This Article, R-18-A, Single-Family Residential District, was repealed by Ordinance Number 564, and combined into Article VII, (R-18 and R-18A) Single-Family Residential Districts.

Article VII. (R-18 and R-18A) SINGLE-FAMILY RESIDENTIAL DISTRICTS [170 432 564] [567 566]

Section 701. Purpose:[564]

These districts are intended to promote and preserve residential development associated with the desert landscape. The minimum size, although less than one acre, still results in a low density of population. The principal land use is a single family dwelling and uses incidental or accessory thereto. The only distinction between R-18 and R-18A is that R-18A shall only be applied to previously annexed subdivisions known as Firebrand Ranch, Mountain View Estates Replat, Arcadia Square, Orange Valley Estates No 3, Grosse Point Two and Quail Vista. Height, area, and other regulations are noted in Section 704 of this Article.

Section 702. Use Regulations: [170 192 567 566]

A building or premises shall be used only for the following purposes:

1. Single-family dwelling.

2. [170] All signs shall comply with the terms of Article XXV of this ordinance.

3. [84 121] Walls or fences, or both, subject to the provisions of Article XXIV.

4. Private swimming pool, provided that:

   a. No pool shall be located closer than twenty (20) feet to any property line;

   b. No pool nor accessory structure in a front yard shall be closer than forty (40) feet to any property line;

   c. Full compliance with all terms of Article 5-2-2(F) of the Town Code is made. [192 587a]

5. Home occupations in compliance with Article XVI Home Occupation.

6. Accessory buildings and uses customarily incident to the above uses, including a private garage, guesthouse, residential staff quarters, and home occupations. Any accessory building not attached to the main structure shall be located not less than sixty (60) feet from the front lot line.

7. Temporary buildings for uses incidental to construction work, which buildings shall be removed upon the completion or abandonment of the construction work, or upon the expiration of a period of one (1) year from the time of erection of such temporary buildings, whichever is sooner.

8. Assisted Living Home in compliance with Article XVII, Assisted Living Home. [567]

Section 703. Parking Regulations: [564]

For all residential dwellings hereafter erected, or for any buildings converted to such use or occupancy, provision shall be made on the premises to provide two (2) parking spaces for each dwelling unit.

Section 704 Minimum Area, Maximum Stories, Maximum Height, Lot Width, Set Backs, and Minimum Floor Area Regulations: [196 432 564]

The height, area, and other regulations that apply to both the R-18 and R-18A Districts are shown in Table 1001 –A1, Table 1001 - A2, and Table 1001B of this Code.

FOOTNOTE:

84 Ordinance #180 - 4/23/81
121 Ordinance #231 - 7/25/85
170 Ordinance #295 - 2/9/89
192 Ordinance #319 - 2/28/91
196 Ordinance #323 - 6/13/91
432 Ordinance #432 - 12/19/96
564 Ordinance #564 – 11/03/2005
567 Ordinance #567 – 11/17/2005
566 Ordinance #566 – 01/12/2006
587a Corrected for Scrivener's Error in Ordinance #587 (Reorganization of Chapter 5)

Article VIII. (R-10) SINGLE-FAMILY RESIDENTIAL DISTRICT [109 116 121 170 471 564 567 566]

Section 801. Purpose: [116 564]

This district applies to previously annexed subdivisions known as Mountain Shadows East, Mountain Shadows West, and Colonia Miramonte. This district is intended for single-family dwellings and uses incidental or accessory thereto, with a lot size of at least 10,000 square feet.

Section 802. Use Regulations: [116 121 170 192 567 566]

A building or premises shall be used only for the following purposes:

1. Single-family dwelling.
2. [170] All signs shall comply with the terms of Article XXV of this ordinance.
3 [121] Walls or fences, or both, subject to the provisions of Article XXIV, or as existing at the time of annexation.

4 Private swimming pools are hereby permitted provided that:

   a. No pool shall be located closer than seven (7) feet to any property line, or as existing at the time of annexation.
   b. Full compliance with all terms of Article 5-2-2(F) of the Town Code is made. [192 587a]

5. Home occupations in compliance with Article XVI Home Occupation.

6. Horses, livestock and poultry are prohibited.

7. Temporary buildings for use incidental to construction work shall be removed upon completion or abandonment of construction work or upon the expiration of a term of one year from erection of such temporary building, whichever is sooner.

8. Assisted Living Home in compliance with Article XVII, Assisted Living Home. [567]

Section 803. Parking Regulations:

For all residential dwellings hereafter erected, or for any buildings converted to such use or occupancy, provision shall be made on the premises to provide two (2) parking spaces for each dwelling unit.

Section 804 Minimum Area, Maximum Stories, Maximum Height, Lot Width, Set Backs, and Minimum Floor Area Regulations: [196 432 564]

The height, area, and other regulations that apply to the R-10 District is shown in Table 1001 – A1, Table 1001 - A2, and Table 1001B of this Code.

Section 805. Limitation

This district shall only be applicable to recorded lots annexed after adoption of this Article.

FOOTNOTE:

109 Ordinance # 217 – 6/24/84
116 Ordinance #225 – 12/20/84
121 Ordinance # 231 – 7/25/85
170 Ordinance # 295 – 2/9/89
192 Ordinance #319 - 2/28/91
471 Ordinance # 471 – 1/14/99
564 Ordinance # 564 – 11/03/2005
567 Ordinance # 567 – 11/17/2005
566 Ordinance # 566 – 01/12/2006
587a Corrected for Scrivener's Error in Ordinance #587 (Reorganization of Chapter 5)

Article IX CLUSTER PLAN DISTRICT [564]

Section 901. Purpose: [168 564]

The purpose of this section is to provide a zoning district as an alternate zoning to R-43 and R-35 single family residential districts, and thereby making provisions for variations in lot sizes within tracts of eight (8) acres or more while maintaining the necessary requirements for open space within each tract as a whole, in order to preserve the natural beauty of the Town of Paradise Valley:

1. A cluster plan may be approved only for the following reasons:

   (a) To preserve areas which have natural features of scenic beauty of significance to the general public.

   (b) To provide greater than normal residential setbacks from heavily traveled thoroughfares without reducing the number of residential lots that might otherwise be created within the provisions of this Ordinance.

Nothing in this article shall confer upon any applicant a right or claim to have a cluster plan approved as a matter of course. Such approval shall vest in the sound discretion of the Town Planning Commission (hereinafter called Commission), and of the Town Council at a public hearing with due regard to the public safety, health, morals, and welfare of the Town.

Section 902. Variation in Lot Sizes: [564]

The owner of a tract of land in a R-43 or R-35 Residential Zoning District may, upon obtaining the approval of a cluster plan in accordance with the provisions of this Article, vary the lot sizes within the tract of land from those required by the applicable zoning district. Applications for the approval of such cluster plans shall be made in accordance with the provisions of Section 908.

Section 903. Maximum Number of Lots:

The maximum number of lots within a tract of land that may be authorized under this Article shall be computed by dividing the "gross acreage" as that term is hereinafter defined, by the maximum lot area requirement of the single family dwelling district in which the lot is located. The term "gross acreage" as used herein, shall include the land within the exterior boundaries of a tract, less the following:

1. The area comprising easements of record for public utilities facilities such as electric transmission lines, sewer lines, and water mains, except in those cases where the owner shall satisfy the Commission that the existence of the easement does not prevent the use of the area comprising the easement for development;

2. An area representing probable street rights of way if the tract were to be developed as a subdivision without regard to the provisions of this Article.

   Gross acreage shall not include any portion of the tract, which the owner does not propose to alienate, either as a lot sold to a purchaser, or as common lands conveyed to trustees. The Commission may by rule adopt regulations calculated to insure compliance by the owner with the provisions of the proposed cluster plan pertaining to conveyance of lots and common lands.

Section 904. Inclusion of Common Lands. [656]

Lands shall be set aside from the remainder of the tract for common use by all of the owners of the residential lots, in accordance with the provisions of this section, and such common lands shall be included in the gross acreage for purposes of computing the maximum number of lots authorized under this Article. Except in the case of bridle paths designated as such in the cluster plan, no animals other than domestic pets shall be permitted on common lands. Common lands shall be set aside only for the following uses:

1. Private recreational facilities, such as swimming pools, which are limited to the use of the owners or occupants of the lots located within the tract, or their guests;

2. Parks and parkway areas, and areas which have natural features of scenic beauty worthy of preservation;

3. Bridle paths, golf courses, or hiking trails for the use of the owners of the said lots, or for the use of the general public.

Section 905. Conveyance of Common Lands:

All common land designated in the plan as such, or whose acreage shall be utilized in the determination of the maximum number of lots that are authorized, shall be conveyed in fee simple by warranty deed from the owner to trustees. A proposed form of trust indenture shall be included in each application for approval of a cluster plan. Such trust indenture shall provide, among other things, that the trustee shall hold title for the sole benefit, use, and enjoyment of the lot owners, present and future, of said subdivision for a term of years certain, which term shall not be less than twenty (20) years. The trust indenture shall further provide that upon the expiration of the said term of years, or upon the cessation of the subdivision, fee simple title to the said land shall be vested in said lot owners as tenants in common. In addition, there shall be included in the plan a proposed form of covenant for inclusion in the deeds to the lots, which covenant shall provide a suitable means for the maintenance and upkeep of the common lands, and shall obligate the lot owner and his successors for a proportionate share of the cost of such upkeep and maintenance. By including the form of such a covenant in the plan, the owner represents and warrants that such a covenant will be included in the original deed to each lot in such a manner as to run with the land and bind succeeding lot owners. The warranty deeds and trust indentures shall be attached as exhibits to the cluster plan together with the opinion of an attorney admitted to practice in Arizona, addressed to the Commission, to the effect that the said deeds and trust indentures comply in form and in substance with the provisions of this Ordinance. The indentures shall be recorded in the office of the Maricopa County Recorder simultaneously with the recording of the final plat of the subdivision, as provided in the subdivision regulations of the

Town. Each deed from the owner to a purchaser of a lot, which is subject to the cluster plan, shall include the covenant.

Section 906. Minimum Reduced Size of lots:

No lot developed under the provisions of this section shall be reduced in area or frontage below the minimum standards set forth in the following table:

Density	Minimum Reduced Area	Minimum Reduced Frontage
R-43 (one acre)	20,000 sq. ft.	120 feet
R-35 (35,000 sq. ft.)	20,000 sq. ft.	100 feet

Section 907. Maintenance of Average Lot Size:

Lots developed under this Article may be reduced in area below the minimum lot size required by the residential district zone in which the subdivision is located (but not below the minimum standards set forth in the preceding paragraph) provided that the gross acreage, when divided by the number of lots created, shall equal the minimum lot size required by the applicable district.

Section 908. Cluster Plan Procedure:

The owner of any tract of land comprising an area of not less than eight (8) acres may submit to the Commission a re-zoning request for a cluster plan for the use and development of all of the said tract of land for residential purposes; the plan shall include all information which the Commission may by rule require, and shall include a request that the entire tract in question be zoned "CP." No cluster plan shall be submitted to the Commission for its approval until a preliminary plat of the tract, which is the subject of the cluster plan, has likewise been submitted, as required by the subdivision regulations of the Town. The preliminary plat shall show in detail each variation from lot size otherwise required which is sought under the proposed cluster plan.

Every cluster plan submitted under this section shall be considered by the Commission at a public hearing. Such public hearing shall be held only after one publication of a public notice of the time, place and date of such hearing is given in a newspaper of general circulation in the Town of Paradise Valley at least fifteen (15) days prior to such hearing, and after there has been posted on the affected property at least fifteen (15) days prior to the said hearing a notice of the hearing.

The Commission shall, after such public hearing, submit to the Town Council its recommendation of approval or disapproval of the cluster plan. Approval of a cluster plan shall not be recommended by the Commission until it shall have also approved the preliminary plat for subdivision of the land, which is the subject of the cluster plan in accordance with the subdivision regulations of the Town.
Upon submission of the Commission's recommendation, the Town Council shall arrange to hold its public hearing to consider whether the cluster plan shall be approved. Like notice for the hearing of the plan before the Town Council shall be given as is the case of the hearing of the plan before the Commission.

Section 909. Other Provisions Applicable.

If the Town Council shall approve the cluster plan, development in conformity with the plan may be undertaken, even though the location of the buildings to be erected in the area, and the yards and open spaces contemplated by the plan, depart in respect herein above authorized from the district regulations of the district in which the tract is located. Such development of the tract shall be subject to the applicable provisions of the Town subdivision regulations pertaining to the installation of required improvements and submission of the final plat. In the event that the approval of the preliminary plat becomes void by reason of the lapse of time under the provisions of the Town subdivision regulations, the approval of the cluster plan by the Town Council shall likewise become void.

Land use within any tract zoned "CP" shall be subject to all other applicable provisions of this Ordinance, and of other ordinances of the Town, except as herein expressly otherwise provided. Notwithstanding the fact that a cluster plan may have been approved for lots located in either ~~and~~ R-43 or an R-35 district, which plan permits one or more of said lots to be varied below the minimum area regulation applicable to the district in which they are located; (a) no guest house shall be permitted on any such lot which does not meet the minimum area regulations applicable to the district in which it is located, without regard to the provisions of this article; (b) no horses shall be kept on a lot located in an R-43 district unless such lot meets the minimum area regulations applicable to the district without regard to the provisions of this article.

Section 910. Variance and Re-Zoning.

No variance from a plan approved under the provisions of this article shall be granted by the Board of Adjustment of the Town. No application for re-zoning of all or any portion of a tract zoned "CP" shall be entertained. All land designated as common land in the cluster plan finally approved by the Town Council shall be used for no other purpose than a common land.

Section 911. Rescission of Cluster Plan Approval:

The owner of a tract of land for which a cluster plan has been approved may apply to the Commission and to the Town Council, in accordance with the procedure set forth in Section 908 of this article, to rescind the approval of the cluster plan. If the Commission and the Town Council shall be satisfied that the land use of the tract is consistent with, or will be substantially restored to, the use required by the zoning in effect on the tract at the time the cluster plan was approved, they may approve the application for rescission. In the event of such approval, the use of the land within the tract shall be governed by the provisions applicable to the district in which the tract is located as of the date the cluster plan was approved.

FOOTNOTES

168 Ordinance #292 1/26/89
564 Ordinance #564 11/03/2005
656 Ordinance #656 11/15/2012

Article X. HEIGHT AND AREA REGULATIONS [432 444 485 534 548 564 565 633654]

Section 1001. District Regulations [432 485 534 548 564 565]

District height, area and other regulations are shown on Table 1001-A1, 1001-A2, and 1001B which follows. The district regulations hereinafter set forth in this article qualify or supplement, as the case may be, the district regulations appearing herein elsewhere in this ordinance.

Table 1001-A1 Primary Building Area, Width, Story, and Setback Limitations

District	Minimum Lot Size, sq ft	Minimum Lot Width, ft	Minimum Front Setback, ft	Minimum Side Setback, ft	Minimum Rear Setback, ft	Minimum Side/Rear with Frontage	Maximum Floor Area Ratio	Minimum Floor Area, sq ft[1]	Number of Stories
R-175 with a Primary Building built prior to June 13, 1991	175,000	165	40	20[2]	40	40	25%	2,000	2
R-175 with no Primary Building built prior to June 13, 1991	175,000	165	100	20[2]	100	100	25%	2,000	2
R-43	43,560	165	40	20	40	40	25%	2,000	2
R-35	35,000	150	40	20[3]	40	40	25%	1,800	2
R-35A	35,000	150	40	15[3]	40	40	25%	1,800	1
R-18	18,000	120	40	20	40	40	25%	1,500	1
R-18A	18,000	120	35	10	35	35	25%	1,500	1
R-10	10,000	100	20[4]	7[4]	25[4]	20[4]	None	1,500	1

- [1]The Minimum Floor Area includes the walls proper of the structure but excludes open porches, pergolas, attached garages or carports or other similar extension thereof.

- [2]Side Yards are a minimum of 40 feet for lots with buildings two (2) stories or a height greater than 24 feet. On lots with buildings of one story and a height not greater than 24 feet, the minimum side yard is 20 feet.

- [3]In the R-35 and R-35A Districts Side Yard requirements are as follows: If there is a building with a second story, regardless of the total height of the building, then the

second story shall be set back forty (40) feet. If the structure is a single story, then all portions higher than twenty-four (24) feet shall be set back forty (40) feet.

- [4]In the R-10 District, front, side and rear yards shall meet the requirements indicated above or as shown on a previously recorded plat, or as existing at the time of annexation. Lots having double frontage and lots located at the intersection of two or more streets shall meet the requirements of this Table or as shown on a previously recorded plat, or as existing at the time of annexation.

Table 1001-A2 Primary Building Height Limitations

Lot Size, acre	Maximum Building Height, feet
Less than 3	24 not including chimneys
3 or greater but less than 4	26 not including chimneys
4 or greater	30 including chimneys

Height measurement shall include the vertical distance from the lowest point of the natural grade below a structure to the highest point of the structure. Please refer to illustrations A,B,D, and E of Figure 1001-1, for examples. Where lowest natural grade occurs in a wash or an anomaly, the Town Manager or designee shall eliminate the wash or anomaly from the calculation and interpolate a simulated natural grade between the contour on each side of the anomaly for use when measuring the height of the building or structure. Where natural grade has been excavated to a point that is lower than the lowest natural grade below the structure and not restored back against the walls of the structure, the total height of the structure shall be measured from the lowest excavated grade elevation adjacent to the walls of the structure. Please refer to illustration E of Figure 1001-1 for example. Basement exits including window wells, stairways, and patio areas shall not be included in the height measurement if the earth has been restored so as to fully screen the portion of the basement from view at natural grade level. Please refer to illustrations F and G of Figure 1001-1 for example. Basement exits, with the exception of standard window wells, shall be included in the Floor Area Ratio for the structure and shall meet all setbacks for the structure; however, the floor area of any fully subterranean portions of the actual basement shall be excluded from the Floor Area Ratio**.** Please refer to illustration C of Figure 1001-1 for detailed window well limitations. Height measurement as defined herein shall not be applicable in Hillside Development Areas.

<u>Additional Height Measurement for R-43 and R-175, non-hillside, lots:</u>
No building shall penetrate an imaginary plane beginning sixteen (16) feet above the twenty (20) foot setback line, and which plane rises toward the center of the lot at a slope of twenty (20) percent (see Figure 1001-2). All height measurements shall be taken from the elevation at the twenty-foot setback line. Measurements shall be taken from the high points of the structure to the closest point at the twenty-foot setback perpendicular to that portion of the structure.

Notwithstanding the above no building or structure shall be placed closer to a property line than specified in Table 1001-A1, 1001-B, or elsewhere in this ordinance. No building may at any point exceed the maximum building height allowed on the lot. In the event of a conflict between this section and section 201, this section shall prevail.

Table 1001B -Setbacks and Height Limits for Accessory Buildings and Structures

DISTRICT	MAXIMUM STORIES	FRONT SETBACK (feet)	MAXIMUM HEIGHT (feet)	SIDE SETBACK (feet)	REAR SETBACK (feet)	SIDE WITH FRONTAGE	REAR WITH FRONTAGE
R-175 with a Primary Building built prior to June 13, 1991	1	60	16	20	20	40	40
R-175 with no Primary Building built prior to June 13, 1991	1	100	16	20	20	40	40
R-43	1	60	16	20	20	40	40
R-35	1	60	15	10	10	40	40
R-35A	1	60	15	10	10	40	40
R-18	1	60	15	10	10	40	40
R-18A	1	60	15	10	10	35	35
R-10	1	20[1]	15	7[1]	7	20[1]	20[1]

- [1]In the R-10 District, front, side and rear yards shall meet the requirements indicated above or as shown on a previously recorded plat, or as existing at the time of annexation. Lots having double frontage and lots located at the intersection of two or more streets shall meet the requirements of this Table or as shown on a previously recorded plat, or as existing at the time of annexation.

Section 1002. Front Yard Designation

A. For a lot where structures currently exist on a lot with double or multiple frontages, the primary frontage shall be determined based upon the following four (4) criteria:

1. A door positioned for use by the general public when calling upon the occupants leading into the dwelling.

2. The primary frontage as depicted on the recorded subdivision plat; or where the primary frontage is not shown on the subdivision plat, as is consistent with and in harmony with the original subdivision design.

3. The arrangement and location of the primary frontage is consistent with and in harmony with the arrangement and location of the primary frontage of the adjacent properties.

4. The primary frontage should be on the street that is a lower level in the Town's Street Classification System; e.g., the frontage should be on a local street versus on an arterial or collector street, or the frontage should be on a collector street versus on an arterial street.

B. For a vacant lot with double or multiple frontages, the primary frontage, if not already designated, shall be determined based upon the following three (3) criteria:

1. The primary frontage as depicted on the recorded subdivision plat; or where the primary frontage is not shown on the subdivision plat, as is consistent with and in harmony with the original subdivision design.

2. The arrangement and location of the primary frontage is consistent with and in harmony with the established character of the adjacent properties.

3. The primary frontage should be on the street that is a lower level in the Town's Street Classification System; e.g., the frontage should be on a local street versus on an arterial or collector street, or the frontage should be on a collector street versus on an arterial street.

C. On curvilinear streets, the arc between the side lot lines shall be considered the front yard.

D. If a front yard is not already designated, or is being changed, the applicant requesting to designate or change the location of the front yard shall notify all property owners within 600 feet of the property line. Within fifteen (15) days after such notification, the Community Development Director shall render a decision regarding the proposed change in the front yard designation. Following the Community Development Director's decision, the property owner or owner of any property within 600 feet of the subject property may appeal the decision of the Community Development Director to the Board of Adjustment. Application for appeal to the Board of Adjustment shall be submitted to the Town, together with the fee prescribed in the Town of Paradise Valley Fee Schedule within ten (10) days after the ruling.

Section 1003. Tall Structures, Flagpoles and Antennas [404 432 444 564]

A. Flagpoles, Spires, radio antennas, television receiving antennas, antenna towers, fire towers, and other similar structures which project skyward, where otherwise authorized under the provisions of the Paradise Valley Zoning Ordinance, shall not exceed thirty (30) feet in height or the height of the main residence, whichever is lower, unless authorized by conditional use permit.

B. All antennas shall be subject to the limitations set forth in Table 1003-1. An amateur radio antenna may exceed thirty (30) feet in height or the height of the main residence, whichever is lower, only if specifically authorized by Special Use Permit and may not exceed a maximum height of sixty (60) feet.

C. These limitations are imposed for the safety of the community and the preservation of the Town's natural aesthetics, in particular the preservation of openness and unobstructed views of Mummy Mountain, the Phoenix Mountains, and Camelback Mountain. The preservation of the views and open space within the Town have been the primary goal of the citizens of the Town since its incorporation. The Town Council determines as a legislative finding that this Section does not operate to impose unreasonable limitations on, or prevent, reception of satellite delivered signals by receive only antennas or to impose costs on the users of such antennas that are excessive in light of the purchase and installation cost of the equipment.

D. All antennas, except for receive only antennas, must be currently licensed by the Federal Communications Commission.

E. It is unlawful to use any antenna for commercial purpose, except for cellular communication systems. Cellular antennas must be located and erected as specified in a conditional use permit.

Type of antenna:	Amateur radio	Standard, non-microwave television	Microwave satellite reception. (dish)
Minimum setback from property line:	60 feet from front property line; 40 feet from the rear property line, 20 feet from the side property lines	60 feet from front property line; 40 feet from the rear property line, 20 feet from the side property lines	60 feet from front property line; 40 feet from the rear property line, 20 feet from the side property lines
Maximum size of mounting shaft:	Five inches	As necessary	Minimum required to support dish.
Accessibility:	Restricted		
Maximum height from natural grade, or lowest excavated grade:	30 feet, or the height of the main building, whichever is lower. More than 30 feet or the height of the main building whichever is lower to a maximum of 60 feet in height only if authorized by Special Use Permit	30 feet, or the height of the main residence, whichever is lower	6 feet, and not visible from adjacent property
Maximum number:	One	Unlimited	One
Fencing required, or other means of restricting access:	Yes	No	No
Permitted in Hillside Development Area:	Yes, subject to the restrictions of the hillside section of the Zoning ordinance	Yes, subject to the restrictions of the hillside section of the Zoning ordinance	Yes, subject to the restrictions of the hillside section of the Zoning ordinance

Section 1004 Building Restrictions (Except as hereinafter provided) [564]

A. No building shall be erected, converted, enlarged, reconstructed or structurally altered, nor shall any building or land be used except in conformity with use, height, area and parking regulations in the district in which the building or land is located.

B. The minimum yards and other open spaces, including lot area per family, required by this ordinance for each and every building existing at the time of passage of this ordinance, or for any building hereafter erected, shall not be encroached upon or considered as yard or open space requirements for any other building; nor shall any lot area be reduced beyond the district regulations of this ordinance.

C. Every building hereafter erected or structurally altered shall be located on a lot as herein defined and in no case shall there be more than one (1) main building on one (1) lot, except as other-wise provided in Article X hereof.

D. No accessory building or a residentially-zoned property shall be leased, subleased or rented, separate and apart from the main building and no main building shall be leased, subleased or rented, separate and apart from an accessory building, and such rental shall be for less than a contiguous 30 day period.

Section 1005 Accessory Building / Structure Regulations [196 485 564 654]

A. Accessory buildings / structures shall not occupy more than one-half of the total ground area of the main building. No accessory building or structure shall exceed the height specified in Table 1001B or elsewhere in this ordinance.

B. No accessory building or structure except for walls and fences as provided for in C and D below, shall be constructed upon a lot until the construction of the main building has been actually commenced, and no accessory building shall be used for dwelling purposes other than by residential staff employed on the premises or as otherwise permitted herein.

C. A 3-foot high rail type fence, wrought iron fence, masonry fence or metal view fence may be installed along the perimeter of a vacant property to prohibit trespassing and illegal dumping. The fence shall be setback at least 10 feet from any right-of-way and shall meet all other requirements of Article XXIV, WALLS AND FENCES.

D. A fence may be built in conjunction with the construction of the main building provided building permits are issued for the fence and the main residence. The fence may be built prior to construction of the residence. The fence design/plan must have an opening to allow access to the enclosed yard during construction and the fence opening may be closed once construction is no longer required. The fence shall meet all other requirements of Article XXIV, WALLS AND FENCES.

E. Accessory buildings / structures, that are to be used for a long-term storage purposes only, may exceed the maximum number of stories that are permitted in the district in which they are located, but such buildings shall not exceed the maximum building height permitted in such district, and that the exterior of such buildings shall be compatible with the architectural design of the main building, as determined by the Town.

Section 1006. Repealed [485 534 564]

Section 1007. Parking of Vehicles and Trailers [64 564]

On residential lots, motor homes, campers, trailers, boats and associated trailers, or buses shall be parked only in the side or rear yard and in such a manner that they are fully screened from adjacent properties**,** rights-of-way, and open space areas by a wall, protective fence, or other screening compatible with the exterior of the main house. Motor homes**,** mobile homes**,** or campers shall not be lived in within the boundaries of the Town. Commercial vehicles and mobile homes shall not be parked or stored on any residential lot within the Town unless the commercial vehicle is making deliveries or providing temporary services.

Section 1008. Yard Requirements[196 564]

Every part of a required yard shall be open to the sky unobstructed, except for–accessory buildings in side and rear yards, plant material, and except for the ordinary projections of sills, belt courses, cornices and ornamental features projecting not to exceed twenty-four (24) inches.

Section 1009. Mechanical Equipment [485 564]

Mechanical-equipment shall be fully screened from view in conformance with Section 2410 of Article XXIV.

Section 1010. Projections into the Required Yards[564]

A. Open lattice-enclosed fire-proof outside stairway, and balconies opening upon fire towers, and the ordinary projections of chimneys and flues into the required side or rear yard not more than five (5) feet are permitted.

B. Terrace, uncovered porches, platforms and ornamental features which do not extend more than three (3) feet above the floor level of the ground (first) story may project a maximum of two (2) feet into the setback. [485]

Section 1011. Repealed [207 345]
Section 1012. Repealed [564]
Section 1013. Repealed [485]
Section 1014. Repealed [564]
Section 1015. Repealed [564]
Section 1016. Repealed [564]
Section 1017. Repealed [564]
Section 1020. Repealed [564]
Section 1021. Repealed [485]
Section 1022. Repealed [84 369]

Section 1023 Outdoor Lighting and Illumination. [65 repealed 201 374]

All types of outdoor electrical lighting and electrical illumination are subject to the following limitations:

1. No lamp or lighting or illumination device shall provide light in excess of 0.75 foot candles of projected brightness measured at the nearest property line. When a light source is indicated as twenty-five (25) watt incandescent, it shall not exceed two hundred fifty (250) lumens and when a light source is indicated as seventy-five (75) watt incandescent, it shall not exceed seven hundred fifty (750) lumens.

2. Each lighting or illuminating device shall be set back from the nearest property line a minimum of ten (10) feet or a distance equal to or greater than the height of the device above natural or excavated grade, whichever is greater.

   EXCEPTION: A lighted entry marker may be placed on each side of a driveway entrance. The entry markers shall not be placed within the Town right-of-way or private road areas and the total height of the marker and light shall not exceed four (4) feet above finished grade adjacent to the driveway. The light source shall not exceed the equivalent projected brightness of a twenty-five (25) watt incandescent bulb.

3. The following light sources shall not exceed a height of thirty-six (36) inches above natural or excavated grade, whichever is lower, and shall not exceed the equivalent projected brightness of a twenty-five (25) watt incandescent bulb:

   a. All lighting or illumination of landscape;

   b. Accent or aesthetic lighting of buildings or structures;

   c. Any illumination device that directs light above a horizontal plane.

4. Lighting used for security and safety shall be an integral part of and attached to the building. The light source and reflecting device shall be shielded or hooded with an opaque cover so that it is not visible from off the property and shall not be higher than twenty (20) feet above natural or excavated grade, which ever is lower. Each security/safety light is limited to the equivalent projected brightness of a seventy-five (75) watt incandescent bulb. Limited use of security/safety lighting is encouraged to prevent excessive ambient light.

5. Tennis court lighting shall be hooded or shielded so that the light source and reflecting device is not visible from off the property. No lighting or illumination device shall project light in excess of 0.75 foot candles of brightness measured at the nearest property line. The maximum height of tennis court lighting shall not exceed twenty (20) feet above the court surface or natural grade whichever is lower.

6. On Hillside lots there shall be no lighting permitted in the undisturbed areas of the property. Exterior lighting shall be kept to the minimum amount needed for the safe use of the property and all permitted lighting shall comply with all terms of this section.

Section 1024. Repealed [564]
Section 1025. Repealed [564]

Section 1026. Prohibition of Time-Share Projects: [99 564]

Time-Share Projects, as defined in Article II, Section 201 are hereby prohibited within any use district within the Town of Paradise Valley.

Section 1027. Prohibition of Specific Types of Medical Marijuana Facilities [633]

The following specified types of medical marijuana facilities, as defined in Article II, Section 201, are hereby prohibited within any use district within the Town of Paradise Valley and are specifically excluded from being considered an allowed home occupation under Article XVI of this Zoning Ordinance: (1) Medical Marijuana Designated Caregiver Cultivation Site; (2) Medical Marijuana Dispensary Offsite Cultivation Site; and (3) Medical Marijuana Infusion Facility. Medical Marijuana Qualifying Patient Cultivation with the Town of Paradise Valley shall be prohibited if a Medical Marijuana Dispensary receives a registration certificate from DHS for any location within the Town of Paradise Valley or within twenty-five (25) miles of the residence of a Qualifying Patient living in the Town of Paradise Valley.

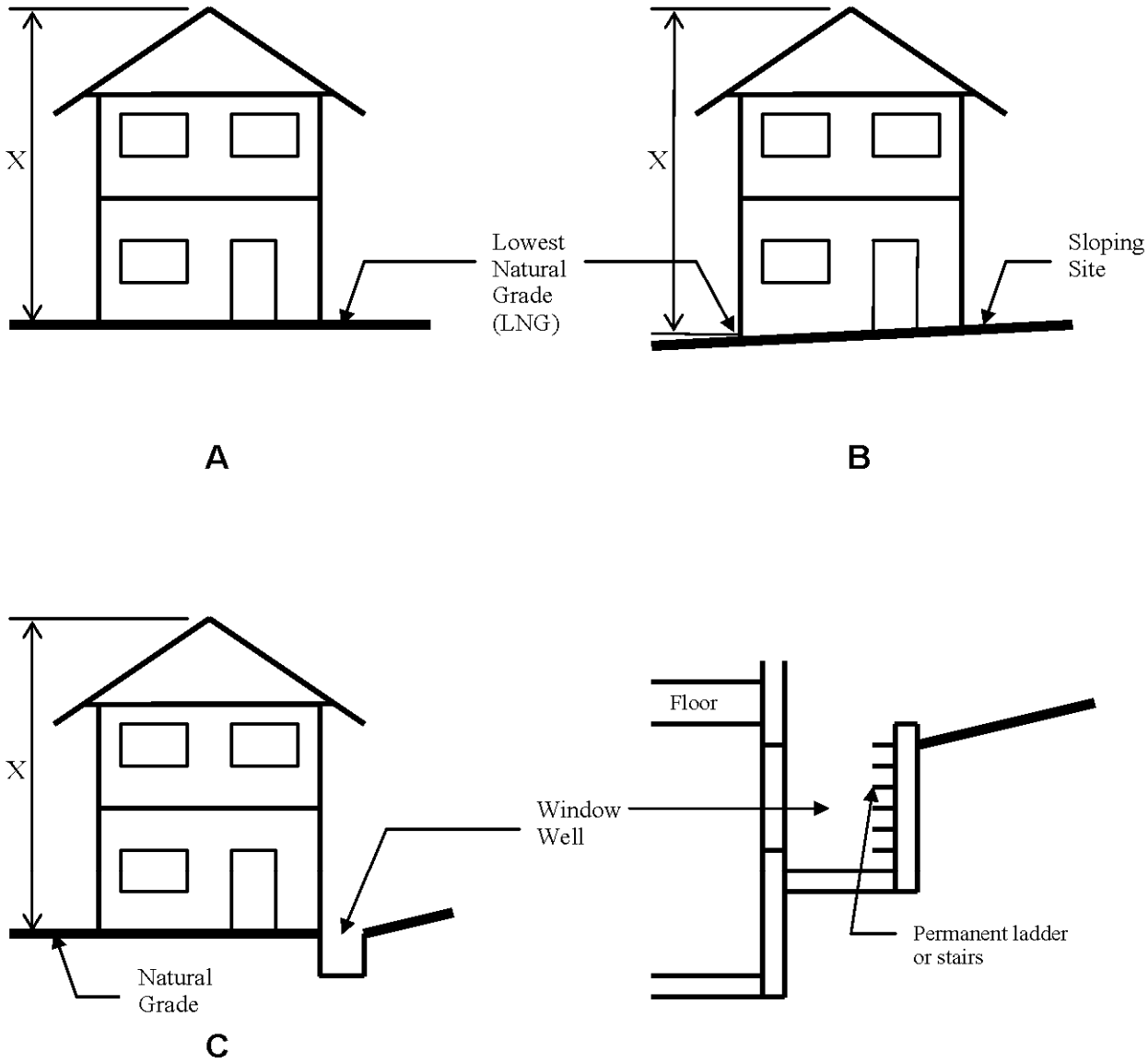
FOOTNOTE:

60 Ordinance #105 - 8/14/75
61 Ordinance #121 - 6/24/76
62 Ordinance #126 - 9/9/76
63 Ordinance #126 - 9/9/76
64 Ordinance #154 - 5/24/79
65 Ordinance #101 - 6/26/75 repealed
66 Ordinance #114 - 3/11/76
67 Ordinance #165 - 4/24/80
82 Ordinance #178 - 4/23/81
84 Ordinance #180 - 4/23/81
96 Ordinance #201 - 3/24/83
99 Ordinance #204 - 4/28/83
122 Ordinance #233 - 11/14/85
127 Ordinance #240 - 3/27/86
159 Ordinance #278 - 2/25/88
162 Ordinance #284 - 5/26/88
180 Ordinance #304 - 11/9/89
186 Ordinance #311 - 4/26/90
196 Ordinance #323 - 6/13/91
201 Ordinance #329 - 1/9/92
207 Ordinance #345 - 5/14/92
369 Ordinance #369 - 2/24/94
374 Ordinance #374 - 8/25/94
404 Ordinance #404 - 05/25/95
432 Ordinance #432 - 12/19/96
444 Ordinance #444 - 12/17/98
485 Ordinance #485 - 12/16/99
548 Ordinance #548 – 03/10/2005
564 Ordinance #564 – 11/03/2005
565 Ordinance #565 – 10/27/2005
633 Ordinance #633 – 04/28/2011
654 Ordinance #654 – 03/27/2014

Zoning Ordinance
Figure 1001-1
Height Measurements

Maximum Height (applies to all Zoning Districts)	
Number of Acres	Maximum Height (Feet)
Less than three (3) acres	24' plus 3' chimney (if w/in 10' of high point)
Three (3) acres but less than four (4) acres	26' plus 3' chimney (if w/in 10' of high point)
Four (4) or more acres	30' including chimney

X varies by the number of acres – see the table above



Window wells shall have a minimum horizontal area of 9 sf and a maximum length of 10'. They shall have a maximum width of 5' and a minimum width of 4'. If greater than 44" deep it is required to have a ladder or steps. Ladder can encroach 6" into the required dimensions.

Zoning Ordinance
Figure 1001-1
Height Measurements

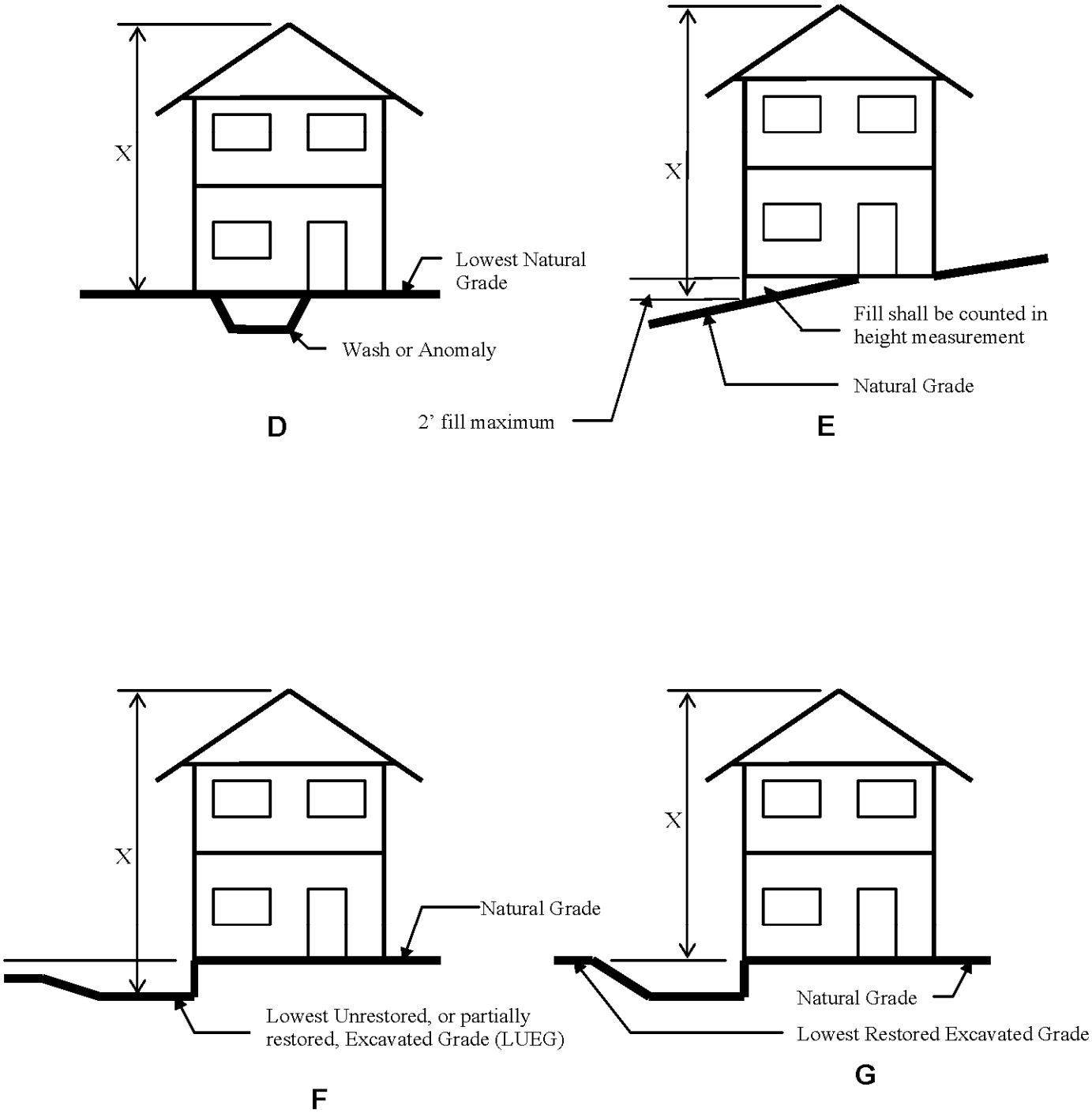
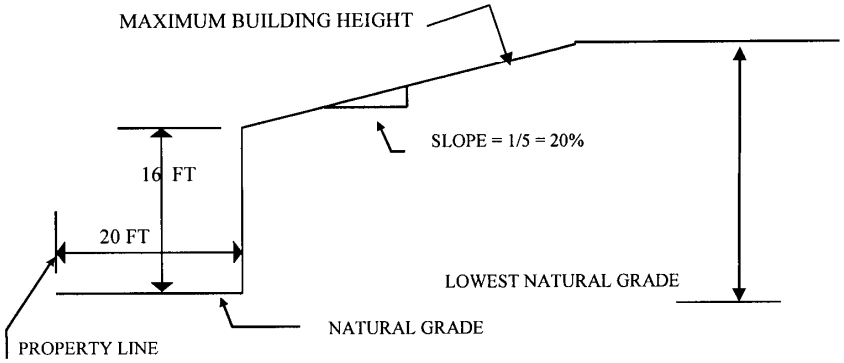


Figure 1001-2



OPEN SPACE CRITERIA

Article XI. SPECIAL USES AND ADDITIONAL USE REGULATIONS [564 605 609 633 657 658 659]

Section 1101. General Purpose; Applicability.

The purpose of this Article is to implement the Town of Paradise Valley General Plan. The General Plan recognizes and values the Town's unique role as a low-density residential community and requires the Town to preserve and maintain the community's primarily one-acre, single-family residential character. The provisions of this Article are intended to further the goals and policies of the General Plan by ensuring that primarily non-residential uses and structures do not adversely affect the integrity and enjoyment of adjacent residential neighborhoods. These regulations also are intended to ensure that proposals for the revitalization and improvement of existing, primarily non-residential, sites as well as the development of new, primarily non-residential, sites include community impact assessments that address project effects on traffic, natural features, and light, noise, dust and odor pollution. In addition, these provisions are intended to promote the General Plan's goal of maximizing the security and aesthetic benefits of visual openness throughout the town by establishing a process to set specific limits on site development parameters.

This Article contains standards for development, review, and approval of land uses which because of their unique nature and because of concern for compatibility with adjacent development or the community as a whole, or because of anticipated impacts on traffic and other public facilities, require review and approval on a case by case basis. These standards are administered through Special Use Permits, Conditional Use Permits, and Temporary Use Permits:

A. Special Use Permits are issued for resorts, medical offices, religious facilities, private schools, non-profit organizations, country clubs and golf courses, utility poles and wires, guardhouses and gatehouses, access control gates, and amateur radio antennas (see Section 1102).

B. Conditional Use Permits are issued for certain dish antennas, private roadways, Personal Wireless Service Facilities (pursuant to Article XII), and municipally owned water booster facilities (see Section 1103).

C. Temporary Use Permits are issued for structures for storing materials, structures for temporary offices, outdoor storage of materials, minor assembly of structural or building components, employee parking, and for sales offices located within new residential developments (see Section 1104).

Section 1102. Special Use Permits (SUPs).

A special use is a primarily non-residential land use listed in this Article that is deemed to be generally compatible with the residential character of the Town of Paradise Valley. However, because of its potential adverse impacts on the community, a special use should be permitted only on a site that can be individually planned and developed in a manner that

promotes the goals and policies of the General Plan and that protects the surrounding neighborhoods.

The intent of these provisions is to clearly define all of the uses permitted upon the approval of a Special Use Permit and to facilitate creative, high quality development that incorporates the following:

A. The implementation of the goals and policies of the General Plan.

B. The development of substantial open space and/or recreational facilities held in common ownership, control, or management.

C. The development of adequate public and/or private streets, storm drainage, and sewer and water utilities to minimize impacts on adjacent properties.

D. The preservation of significant natural land characteristics, open space, and view corridors.

E. Building design, site design, and construction of amenities that create a unique alternative to conventional development.

F. Assurances of proper property maintenance, including common control or management of the property, and the use of stringent development standards, or as appropriate, property owners' associations and recorded covenants, conditions and restrictions.

G. The preservation and enhancement of the neighborhood's appearance.

H. The construction or development of improvements that create substantial public benefits.

I. The incorporation of standards to ensure that the development will have minimal impact on adjacent properties.

Section 1102.1. Nature of Special Use Permit.

The issuance, or conditional issuance, of a Special Use Permit (or "SUP") is an act of the Town Council that permits certain primarily non-residential land uses. The decision whether to grant, or to condition the grant of, a Special Use Permit or an intermediate or major amendment thereto is entirely within the legislative discretion of the Town Council and the denial of a Special Use Permit or an intermediate or major amendment thereto is not the denial of a right, conditional or otherwise. The ability of an applicant to comply with the development standards set forth in this Article or elsewhere does not mean that a Special Use Permit will be approved. The decision to grant, or to condition the grant of, a managerial or minor amendment to a Special Use Permit is an administrative act and is not subject to review by referendum, as it merely implements or clarifies a policy of the town that has been previously announced or established in the Zoning Code and General Plan, or a previous legislative **act**, and does not prescribe a new public purpose, policy, or plan.

The decision to grant, or to condition the grant of, a Special Use Permit or an intermediate or major amendment is, on contrast, a legislative act subject to review by referendum.

In the exercise of its legislative discretion, the Town Council may modify the development standards, or permit additional related uses, for the special uses listed in this article or elsewhere in order to promote the goals and policies of the General Plan, in exchange for site enhancements that improve overall site design, or to promote the best interests of the Town or its residents.

Section 1102.2. Uses Permitted. [658]

The following buildings, structures, or uses may be authorized by a Special Use Permit issued in accordance with the procedures set forth in this Article:

A. Resorts
B. Medical Offices, Kennels and Veterinary Clinics
C. Religious Facilities, Private Schools, Non-Profit Organizations, and Public/Quasi Public Structures
D. Country Clubs and Golf Courses
E. Utility poles and Wires
F. Guardhouses, Gatehouses, and Access Control Gates
G. Amateur Radio Antennas

A. Resorts

1. Definition

A resort is a facility, operated under a single unified management structure, containing guest units primarily for the temporary residency of persons in a physical setting that provides a high level of guest amenities, recreational opportunities and a quality of design that may include architectural features, extensive open space and landscaping.

2. Allowed uses

a. The primary use in a resort is guest units, including facilities necessary for administering and servicing the facility and on site parking.

b. Accessory uses may include:

i. Indoor or outdoor recreation facilities, including but not limited to swimming pools and spa or fitness facilities, tennis and other ball courts, golf courses and equestrian facilities.

ii. Retail sales, so long as they are primarily for the support and service of guests or visitors to functions at the site.

iii. Office and business services so long as they are primarily for the support and service of guests or visitors to functions at the site.

iv. Restaurants, banquet rooms and food service facilities which may include live music, entertainment and dancing.

v. Meeting and public assembly facilities.

vi. Dwelling units.

vii. Any other resort-related use specifically approved in a Special Use Permit

3. Signs

All signs shall comply with Article XXV, Signs, or as may have been previously specified in a particular Special Use Permit.

B. Medical Office, Kennels and Veterinary Clinics [633 658]

1. Definition

A medical office, including a medical clinic, consists of a building or part of a building used solely for the purpose of consultation, diagnosis, and treatment of patients by one or more legally qualified physicians, dentists, optometrists, chiropodists, chiropractors, osteopaths, and occupational therapists, together with their qualified assistants, and without limiting the generality of the foregoing, the building may include reception areas, administrative offices, waiting rooms, consultation and treatment rooms, minor operating rooms, pharmacies and dispensaries directly associated with the medical office/clinic. A kennel, including a veterinary clinic, consists of a building or a part of a building used for reception areas, administrative offices, waiting rooms, play areas and animal retaining/caging units, consultation and treatment rooms, minor operating rooms, and rooms for the diagnosis and treatment of animals by one or more legal qualified veterinarians, together with their qualified assistants.

2. Allowed uses

a. Offices for medical practitioners and veterinarians; and kennel uses.

b. Outpatient surgical facilities where patient stays do not exceed 48 hours.

c. Medical laboratories.

d. Physical therapy facilities.

e. Pharmacies, subject to specific approval of such use by the terms of an approved Special Use Permit, and pursuant to the following restrictions:

i. There shall be no external signage for a pharmacy other than a tenant identification sign for the surrounding medical office SUP complex.

ii. Addition of a pharmacy use within a Medical Office Special Use Permit Zone shall be permitted only upon the approval of an Intermediate Amendment to the Special Use Permit as provided for in Section 1102.7(C).

iii. Hours of operation shall be not earlier than 8:00 a.m. and not later than 6:00 p.m. – Monday through Saturday.

f. Medical Marijuana Dispensaries, subject to the following restrictions:

i. The number of medical marijuana dispensaries within the Town of Paradise Valley shall be limited to no more than one within the boundaries of the Town. Said dispensary shall be allowed only in the Medical Office SUP District and only upon the approval of an Intermediate Amendment to a Special Use Permit.

ii. The minimum requirements of this section shall apply to all applications for a medical marijuana dispensary use in a SUP Medical Office District as well as proof of compliance with all DHS regulations related to medical marijuana dispensaries.

iii. In addition to the foregoing requirements, applicants for a medical marijuana dispensary shall provide the following:

(1) Copy of the operating procedures adopted in compliance with A.R.S. § 36-2804(B)(1)(c).

(2) Proof of a valid registration certificate and identification number from DHS for the dispensary and its board members and agents.

(3) A security plan showing a floor plan, type and description of and specifications for security measures that the medical marijuana dispensary will use to secure, enclose and lock the dispensary as required by State law and DHS regulations.

(4) Exterior site and parking plan.

iv. <u>Additional Regulations and Standards for Medical Marijuana Dispensaries</u>

(1) Prior to Town approval of the occupancy of any tenant or operator of a medical marijuana dispensary, the owner of the medical office complex shall submit for Town Manager review and approval criminal background information and releases regarding the prospective tenant and all employees to be hired by the tenant; audited financial statements evidencing that the entities or persons who will

own or operate the medical marijuana dispensary have adequate assets, financing, and net worth to appropriately fund a safe and secure medical marijuana; and detailed operations evidencing appropriate policies, protocols and operations procedures to ensure that the medical marijuana dispensary will run and operate in a safe and secure manner.

(2) Medical marijuana dispensaries shall be limited to the use of dispensing medical marijuana products, and shall be prohibited from any other or related use such as a bookstore, spa, restaurant, or coffee shop.

(3) No drive-through service shall be allowed at any medical marijuana dispensary.

(4) No on-site consumption of any product containing medical marijuana shall be allowed at any medical marijuana dispensary.

(5) Medical marijuana dispensaries located within the Town of Paradise Valley shall be prohibited from making any home deliveries of marijuana.

(6) Medical marijuana dispensaries shall be prohibited from offering free or discounted samples of their merchandise.

(7) Means of preventing smoke, odors, debris, dust fluids and other substances from exiting a medical marijuana dispensary shall be provided.

(8) No minors, under 21 years of age, are permitted within a medical marijuana dispensary unless accompanied by a parent or guardian.

(9) No youth activities, including, but not limited to, outdoor basketball hoop structures, playgrounds, and skate parks, shall be permitted on the same medical office complex site that has an approved medical marijuana dispensary use.

(10) If the State prohibits any medical marijuana dispensary within the Town, any Amendment to a Special Use Permit adding a medical marijuana dispensary use shall be deemed immediately revoked by operation of law. The underlying Special Use Permit shall remain.

(11) A medical marijuana dispensary shall be at least 1,500 feet from the following existing uses, as measured within the Paradise Valley municipal limits only: (a) educational institutions (b) places of worship (c) parks and recreational facilities (d) youth centers; and at least 5,280 feet from any other medical marijuana dispensary, as measured within the Paradise Valley municipal limits only.

Measurements are taken from nearest property lines of the medical office use and each of the uses noted above. The location of the dispensary shall optimize distance from residentially zoned property. Residential spacing shall be the primary consideration for all reviews of intermediate SUP amendment applications for medical marijuana dispensaries.

(12) A medical marijuana dispensary shall have operating hours not earlier than 8:30 a.m. and not later than 2:30 p.m. – Monday through Friday or as prescribed in an intermediate Special Use Permit amendment.

(13) There shall be no external signage including, but not limited to, any special event signage, for a medical marijuana dispensary other than a tenant identification sign for the surrounding medical office SUP complex, and no symbols, representations, or slang for the word "marijuana" or its components shall be used on any external signage.

(14) All activity related to medical marijuana dispensaries shall be conducted in compliance with Arizona Revised Statutes, Title 36, A.R.S. § 36-2801 et seq., DHS rules and regulations and other implementing state statutes and administrative regulations.

(15) An SUP amendment for a medical marijuana dispensary shall not become effective until the owner of a Medical Office SUP District property has completed all DHS requirements and obtained a license.

C. Religious Facility, Private School, Non-Profit Organization, Public/Quasi Public

1. Definitions. Any of the following that can demonstrate an exclusively non-profit or non-commercial or purely public purpose.

   a. Religious Facility - an institution primarily used for the gathering of people for the practice of religious faiths.

   b. Private School - an institution, including private charter schools, for instruction and education of children or adults and that is not operated by a public school district.

   c. Non-Profit Organization - an organization that provides social, religious, educational, family support or similar services to individuals and which is certified as a not for profit organization by appropriate state or federal agencies.

   d. Public/Quasi Public: Structures and uses principally of an institutional nature and serving a public need, such as religious institutions, schools, libraries, governmental offices, museums, post offices, police and fire

stations, public utilities, and other public services that provide governmental, educational, institutional, cultural, recreational, religious, or other similar types of public services, but not including the operation of a public bar, restaurant or recreational facility as a commercial enterprise.

2. Allowed uses

   a. Halls for assembly

   b. Offices for staff or consultation

   c. Classrooms, laboratories, gymnasia and similar recreational facilities

3. Signs

   All signs shall comply with Article XXV, Signs, or as may have been previously specified in a particular Special Use Permit.

D. Country Club and Golf Course

1. Definition

   a. Country Club - A use of land, with traditional accessory uses, the primary purpose of which is for playing golf, tennis, handball or other similar recreational activities. Memberships or fees may be required for participation.
   b. Golf Course - A tract of land laid out with at least nine holes for playing a game of golf and improved with tees, greens, fairways, and hazards. A golf course may include a clubhouse and associated uses.

2. Allowed uses

   a. Golf course

   b. Driving range

   c. Tennis

   d. Racquetball, handball and other game courts

   e. Swimming pool

   f. Accessory uses may include event halls, restaurants, dining facilities, bars, dance floors, weight or exercise rooms, and limited retail sales so long as they are primarily for the support and service of guests or visitors to functions at the site.

g. Any other country club and golf course related use specifically approved in a Special Use Permit

3. Signs

All signs shall comply with Article XXV, Signs, or as may have been previously specified in a particular Special Use Permit.

E. Utility Poles and Wires

1. Definitions

a. Utility poles and wires - shall mean poles, structures, wires, cable, conduit, transformers and related facilities used in or as a part of the transportation or distribution of electricity or power or in the transmission of telephone, telegraph, radio or television communications;

b. Existing utility poles and wires - shall mean such utility poles and wires as are in place and in operation as of the effective date of this ordinance; and

c. New utility poles and wires - shall mean such utility poles and wires as are not existing utility poles and wires and shall include such utility poles and wires as in the future may constitute replacements for, or repairs to, existing utility poles and wires, but shall not include replacements involving less than one-quarter (1/4) mile of contiguous poles and wires on any transmission or distribution line in any twelve (12) month period where the remainder of such transmission or distribution line is not also being replaced within said period; such replacements excluded from being new utility poles under the latter clause must be poles of the same or lesser size, diameter, and height, and in the same location as the pole or poles being replaced, and in addition, must be of the same class or classification as to strength and purpose within the utility industry as the pole or poles being replaced.

2. The erection of new utility poles and wires within the Town is discouraged, and may only be permitted by the issuance of a Special Use Permit, further provided that a Special Use Permit for erection of new utility poles and wires shall be granted only in the event the applicant makes an affirmative showing that the public's general health, safety and welfare will not be impaired or endangered or jeopardized by the erection of same as proposed. In deciding such matter, the following factors shall be considered:

a. the location and heights of such poles and wires and their relation to present or potential future roads;

b. the crossing of such lines over much traveled highways or streets;

c. the proximity of such lines to schools, churches or other places where people congregate;

d. the probability of extensive flying in the area where such poles and wires are proposed to be located and the proximity to existing or proposed airfields;

e. fire or other accident hazards from the presence of such poles and wires and the effect, if any, of same upon the effectiveness of fire fighting equipment;

f. the aesthetics involved;

g. the availability of suitable right-of-way for the installation;

h. the future conditions that may be reasonably anticipated in the area in view of a normal course of development;

i. the type of terrain;

j. the practicality and feasibility of underground installation of such poles and wires with due regard for the comparative costs between underground and overground installations (provided, however, that a mere showing that an underground installation shall cost more than an overground installation shall not in itself necessarily require issuance of a permit); and

k. in the event such poles and wires are for the sole purpose of carrying electricity or power or transmitting telephone, telegraph, radio or television communication through or beyond the Town's boundaries, or from one major facility to another, the practicality and feasibility of alternative or other routes.

F. Guardhouse, gatehouse, and access control gates

1. Definition

Guardhouses, gatehouses, and access control gates are structures or fencing and gates located within a private roadway the purpose of which is to control access to a residential development.

G. Amateur Radio Antenna

1. Definition

An amateur radio antenna, as regulated by this article, is an antenna used for amateur radio communications that exceeds 30 feet in height or the height of the main building, whichever is lower, but does not exceed 60 feet in height.

2. Bulk and density standards

The amateur radio antenna shall be subject to the standards for amateur radio antennas set forth in Table 1003.1.

Section 1102.3. Creating a Special Use Permit [657]

A. Non residential properties that currently do not have a Special Use Permit and residential properties that wish to obtain authorization for a non-residential use are eligible to apply for a Special Use Permit. A general plan amendment may first be required as well as a rezoning of the property prior to or in conjunction with a request for a Special Use Permit.

B. The following definitions shall be used for all Special Use Permits or amendments thereto:

1. Floor Area – As defined in Article II, Section 201, of the Zoning Ordinance.

2. Lot Coverage – The square footage of the ground floor of a structure measured to its drip line, including trellises, divided by the size of the lot and expressed as a percentage.

3. Special Use Permit - The original document approved by an ordinance adopted by the Paradise Valley Town Council (that may also include an amendment to the Zoning Map as required by Article III), together with all pertinent exhibits thereto, authorizing a primarily non-residential use of the property within those categories identified in Section 1102.2.

4. Statement of Direction - A Statement of Direction is a document administered by the Town Council at the beginning of Phase II of the application process. A Statement of Direction is not a final decision of the Town Council and shall create no vested right to the approval of a Special Use Permit, nor shall any applicant for a Special Use Permit be entitled to rely upon the matters addressed in the Statement of Direction being the same as those that may be part of an approved Special Use Permit. It may address, but is not limited to the following items:
    a. Uses
    b. Lot coverage/density
    c. Massing/Scale
    d. Perimeter setbacks
    e. Maximum heights
    f. View Corridors
    g. Circulation
    h. Known issues, if any (for intermediate amendments this may includes issues outside of the geographic area)

C. Application and Approval Procedures for Special Use Permits

1. Applications for a Special Use Permit may be filed by any person, the Town of Paradise Valley, or by any federal, state, county, school district or municipal or governmental agency owning property subject to the provisions of this ordinance.

2. The applicant for a Special Use Permit must be the real property owner or must provide a letter of authorization filed on the behalf of the property owner.

3. Special Use Permit Application Process:

   a. The Special Use Permit application process is comprised of two phases. Phase I is the application submittal process, in which the applicant and Town staff work together to create a complete application. Phase II consists of the project review by the Planning Commission and the Town Council. [Please also refer to Figure 1102.4-1 for an overview of the review process.]

   b. During Phase I the applicant shall contact Town staff to start the application process. The applicant must first complete the pre-application review process in accordance with Section 2-5-2(E) of the Town Code. The Planning Department will review and provide an initial assessment of the pre-application. Thereafter, the applicant shall submit a Special Use Permit application in accordance with Section 307 of Article III of the Zoning Ordinance.

   c. After the formal application is deemed complete, Phase II begins with the project request being reviewed by the Planning Commission and Town Council. First, staff presents the application to the Town Council. The Town Council then issues a Statement of Direction within forty-five (45) days from the date of staff presentation. The formal application is then reviewed by the Planning Commission at the work study and public hearing sessions. The applicant must also hold a Citizen Review meeting before the Planning Commission holds a public hearing and makes its recommendation to the Town Council. At any time during the review process the Planning Commission may request clarification and/or expansion of the Statement of Direction based on additional information that has evolved. The Planning Commission will vote on the request at the public hearing and will make a recommendation to the Town Council. The Town Council then reviews the project and holds a public hearing. The Town Council votes to approve or deny the request in accordance with Section 308 of Article III the Town Zoning Ordinance. Should the Town Council approve the request, the Council shall also include a statement explaining the public benefit of the project.

4. Public hearings shall be held only after:

   a. One publication of a notice of the time, place and date of such hearing in a newspaper of general circulation in the Town, at least fifteen (15) days prior to such hearings; and

   b. The posting of a notice of the time, place, and date of such hearing on the affected property for at least seven (7) days prior to the date of the hearing.

c. The applicant shall hold a Citizen Review Meeting no less than ten (10) days prior to the Planning Commission hearing in accordance with Article II, Section 2-5-2(F) of the Town Code.

5. Special Use Permit Submittal Requirements; Review Process; and Review/Approval Criteria

a. An applicant for a Special Use Permit shall submit plans or studies deemed necessary or appropriate by the Town, which may vary depending on the type and extent of any Special Use Permit or amendment to a Special Use Permit being requested. Said plans and studies may include the following; and any other plans or studies deemed necessary and appropriate by the Town:

i. A legal description of the parcel, including gross and net acreage. A recent American Land Title Association/American Congress on Surveying & Mapping (ALTA/ACSM) survey may be required if deemed necessary by the Town for a thorough review of the application.

ii. A project narrative which shall include statements on: uses proposed on the property; site development phasing; architectural design philosophy; compatibility with adjoining properties; environmental impacts; water flow and pressure impacts, site access, parking and circulation; conformity with the Town's development standards and guidelines and any deviation from such standards or guidelines; and, ownership, maintenance, and management of common facilities and areas including open space.

iii. Site plan depicting location and type of all improvements and any additional information as needed, including:

1) Perimeter setbacks
2) On-site parking
3) Points of access
4) Common areas
5) Location of walls
6) Internal circulation
7) Density and intensity of uses and structures
8) Lot coverage
9) Floor Area

iv. Building plans including, schematic floor plans, building elevations and heights, an analysis of the Open Space Criteria, architectural style and details, and exterior building materials and colors.

v. Landscaping Plan.

vi. Lighting Plan with photometric study.

vii. Signage Plan.

viii. Grading plans and drainage study. Grading plans including location and proposed treatment of sloped and retention areas; calculations and maintenance responsibilities, significant topographical features of the site, and areas of the site subject to flooding.

ix. Traffic study to address the impact of the project on adjacent properties and roadway system, internal circulation and parking analysis, and any necessary roadway dedication and improvement.

x. Noise study to evaluate the compatibility of the proposed project with surrounding areas.

xi. Timing and phasing of development.

b. Within 30 calendar days of the date an application is submitted, the Town shall notify the applicant whether the application is complete. If the Town determines the application is incomplete, the Town shall indicate what additional information or documents the applicant must submit to make the application complete. The Town Manager or his designee may waive the submittal of any information or document listed in this section that he determines is not necessary to properly evaluate an application.

c. In considering an application for a Special Use Permit, not only shall the nature of the use be considered, but also the special conditions influencing its location, design and operation, the proposed location and design of buildings, parking and other facilities within the site, the amount of traffic likely to be generated and how it will be accommodated, compatibility with the residential character and zoning of the Town, and the influence that such factors and development in accordance with the Special Use Permit application are likely to exert on adjoining properties.

d. The recommendation by the Planning Commission for approval of an application, or the ultimate approval thereof by the Town Council, may be granted upon such conditions reasonably related to the use of the subject property or impact on appurtenant properties or on the Town as are deemed proper, including but not limited to, the requirement that the applicant post a bond in such amount as may be

deemed appropriate to secure and assure the performance of any or all conditions set forth in the Special Use Permit; the requirement that the proposed buildings and structures be constructed in a prescribed sequence; and the imposition of time limits for commencement or completion of construction.

e. An applicant for a Special Use Permit who proposes to improve a project in more than one phase may identify the initial phase of development as Phase I and may identify other and subsequent phases for completing remaining improvements. On-site and off-site improvements for Phase I shall be in proportion to the scale of development as deemed appropriate by the Town. The Town may require additional improvements to be completed in conjunction with the initial or subsequent phases. Improvements shown in the final development must comply with all Town of Paradise Valley ordinances, standards and policies for the proposed development unless otherwise approved by the Town Council in conjunction with approval of the Special Use Permit. The applicant's intention to develop the project in phases shall be indicated in the application narrative and shall be depicted on the site plan for the entire project. Amendments to approved phases or the creation of additional phases shall be reviewed according to the procedures set forth in this article for intermediate or major amendments. The Commission shall hold a public hearing on the application, for the purpose of recommending whether the granting of the application would serve the public safety, health, or welfare of the Town. After such public hearings, the Commission shall submit to the Town Council its recommendation of approval or disapproval of the application.

f. An approved Special Use Permit, shall be assigned an identifying number, shall be adopted by ordinance and shall constitute an amendment to, and be shown on, the Town's Official Zoning Map. An ordinance granting a Special Use Permit shall set forth the terms and conditions of approval for a Special Use Permit. The terms and conditions set forth in the ordinance shall be complied with as a condition to the establishment of any use on the site and shall be maintained as a condition of the continuation of the use. No use shall be made of property that is subject to a Special Use Permit except as allowed by the ordinance granting the Special Use Permit or as allowed by this article.

6. Application fees for Special Use Permits shall be as set forth in the Town's Fee Schedule.

Section 1102.4 Commencement of Use or Occupancy

No use or occupancy approved under a Special Use Permit shall be commenced or maintained upon a lot or parcel except in accordance with an approved site plan which accurately reflects such use and occupancy.

Section 1102.5 No Variance From Special Use Permit.

No variance from the terms, provisions, or conditions of a Special Use Permit shall be granted by the Board of Adjustment. Applications to modify the terms, provisions, or conditions of a Special Use Permit may be filed in accordance with the amendment procedures set forth in this article.

Section 1102.6 Subsequent Approvals; Rezoning of a Special Use Permit Property to another Zoning District Classification.

A. Approval of a subsequent Special Use Permit on a site shall void all existing Special Use Permits on the site if so provided in the ordinance adopting the Special Use Permit.

B. A request to rezone property from a Special Use Permit designation to another zoning district classification may be filed in accordance with the provisions of Article III of the Zoning Ordinance. However, such a request may first require an amendment to the General Plan as it pertains to the property.

Section 1102.7 Types of Amendments to Special Use Permits.

An "Amendment to a Special Use Permit," is any change to an existing Special Use Permit. There are four categories of amendments: Managerial, Minor, Intermediate, and Major.

A. Managerial Amendment

A Managerial Amendment to a Special Use Permit shall include any proposal which does not:

1. Change or add any uses; or

2. Increase the floor area of the project by more than 1000 square feet or constitute an increase of more than 2% upon the existing or, if still under construction, approved floor area square footage of the affected SUP property, whichever is less, with any such increase to be measured cumulatively over a sixty month period; or

3. Increase the number of units or structures, with the exception of playground equipment shade structures; or

4. Have any material effect on the adjoining property owners that is visible, audible, or otherwise perceptible from adjacent properties with the exception of playground equipment shade structures; or

5. Change in any respect any stipulation(s) governing the original Special Use Permit; or

6. Change the vehicular or emergency circulation or the required parking or loading space or traffic; or

7. Change the architectural style of the approved SUP (renderings/plans).

B. Minor Amendment

A Minor Amendment to a Special Use Permit shall include any proposal which is not a Managerial Amendment and does not:

1. Change or add any uses; or

2. Increase the floor area of the project by more than 5000 square feet or constitute an increase of more than 15% upon the existing or, if still under construction, approved floor area square footage of the affected SUP property, whichever is less, with any such increase to be measured cumulatively over a sixty month period; or

3. Have any material effect on the adjoining property owners that is visible, audible, or otherwise perceptible from adjacent properties that cannot be sufficiently mitigated; or

4. Change the architectural style of the existing Special Use Permit.

C. Intermediate Amendment

An Intermediate Amendment to a Special Use Permit shall include any proposal which does not:

1. Change or add any uses; or

2. Increase the floor area of the project by more than 40% upon the existing or, if still under construction, approved floor area square footage of the affected SUP property, with any such increase to be measured cumulatively over a sixty month period; or

3. Have any significant material effect on the adjoining property owners that is visible, audible, or otherwise perceptible from adjacent properties that cannot be sufficiently mitigated.

D. Major Amendment

A Major Amendment to a Special Use Permit is any proposed amendment that does not qualify as a Managerial, Minor, or Intermediate Amendment.

1102.8 Application and Approval Process for Amendments to Special Use Permits [659]

The application process for an amendment to a Special Use Permit is comprised of two phases. Phase I is the application submittal process, in which the applicant and Town staff work together to create a complete application. Phase II consists of the formal project review. [Please also refer to Figure 1102.4-1 for an overview of the review process.]

A. Managerial Amendments

1. The applicant must first complete the pre-application review process in accordance with Section 2-5-2(E) of the Town Code. A formal application can then be made to the Town in accordance with Section 1102.3 of this Article. The Town Manager or his designee will then review and either approve or deny the application, or reclassify the application to a different category of Special Use Permit amendment.

2. The Town Manager (or the Town Manager's designee) will be required to report all decisions on Managerial Amendments to the Town Council (for informational purposes only).

B. Minor Amendments

1. The applicant must first complete the pre-application review process in accordance with Section 2-5-2(E) of the Town Code. A formal application can then be made to the Town in accordance with Section 1102.3 of this Article. The Planning Commission shall review all applications for Minor Amendments to determine whether they meet the criteria for Minor Amendments as defined. An application submitted as a Minor Amendment but determined by the Planning Commission to be an Intermediate or Major Amendment shall have to be resubmitted by the applicant as an Intermediate or Major Amendment. The Commission shall hold a public hearing on Minor Amendments to determine whether the granting of the amendment would serve the public health, safety or welfare of the Town and whether the requirements of this article are met. Notice of the public hearing, in the same manner as required in Section 1102.3 of this article, shall be given.

2. The Town Council shall have the authority to hear and decide appeals from the action of the Planning Commission in the granting or denying of a Minor Amendment, or appealing any requirement imposed by the Planning Commission as a condition of approval of a Minor Amendment.

An appeal from a decision made by the Planning Commission may be taken within 15 days by an aggrieved person on a form provided by the Community Development Department and shall specify the basis of the appeal.

An appeal shall be heard by the Town Council de novo. The concurring vote of a majority of members present and not otherwise disqualified shall be necessary to reverse or modify a requirement or decision of the Planning Commission, otherwise such requirement or decision shall be affirmed.

The Town Council shall fix a reasonable time for its hearings and give notice thereof to the parties in interest and the public by publishing notice in a newspaper of general circulation in the Town of Paradise Valley, giving at least fifteen days' notice of such hearing; and by posting the subject property at least seven days prior to the hearing.

3. Minor Amendments shall be appended to the site plan in the form of an attachment to existing exhibits, and shall, absent an appeal, not require Town Council approval.

C. Intermediate Amendments

1. The applicant must first complete the pre-application review process in accordance with Section 2-5-2(E) of the Town Code**.** A formal application can then be made to the Town in accordance with Section 1102.3 of this Article. The process for approval of an Intermediate Amendment will include a formal application, staff review, then a Town Council preview for a Statement of Direction on the application.

2. The scope of the Intermediate review will be limited to the geographic area of the property on which amendments or changes have been requested; and those areas necessarily or likely to be impacted by the proposed amendment or changes.

3. The application will then continue on to the Planning Commission for review; which shall be limited in time to 90 days. At the end of its review, the Commission will make a recommendation for approval or denial to the Town Council. Upon submission of the Commission's recommendation, the Town Council shall hold a public hearing to determine whether the granting of the application would serve the public health, safety or welfare of the Town and whether the requirements of this article are met. Notice of the public hearing, as required in Section 1102.3 of this Article shall be given. If the Town Council approves the application, its decision, whether by ordinance or resolution or otherwise (as the circumstances may dictate) shall include a statement explaining the public benefit of the amendment to the Special Use Permit.

D. Major Amendments

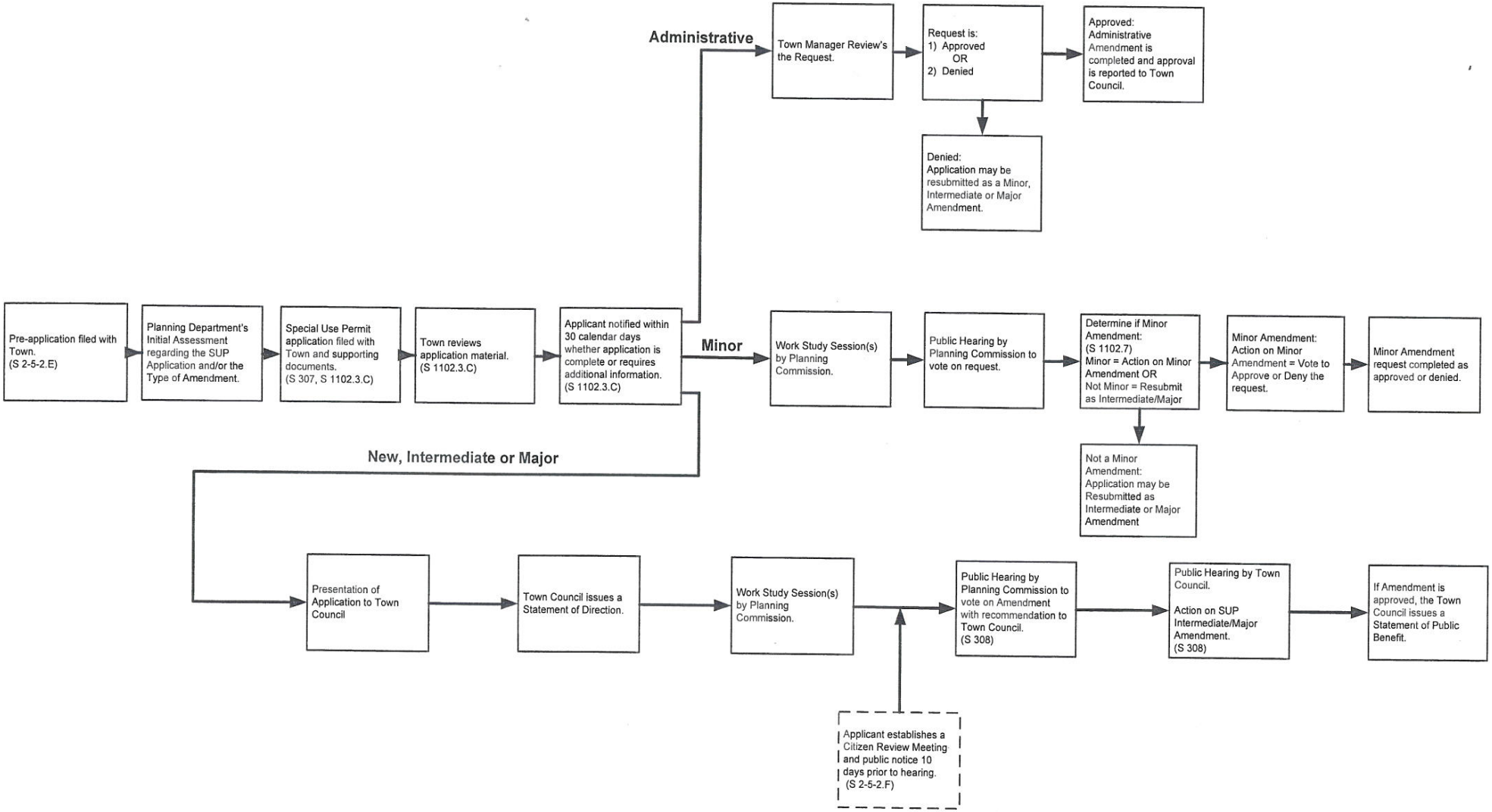
1. The applicant must first complete the pre-application review process in accordance with Section 2-5-2(E) of the Town Code. A formal application can then be made to the Town in accordance with Section 1102.3 of this Article. The process for approval of a Major Amendment will include a formal application, staff review, and then a Town Council preview for a Statement of Direction on the application.

2. The application will then continue to the standard Planning Commission review which is subject to the limits contained in Article II, Section 2-5-2(D), of the Town Code. At the end of its review, the Commission will make a recommendation for approval or denial to the Town Council. Upon submission of the Commission's recommendation, the Council shall hold a public hearing to determine whether the granting of the application would serve the public health, safety or welfare of the Town and whether the requirements of this article are met. Notice of the public hearing, as required in Section 1102.3 of this article shall be given. If the Town Council approves the application, its decision, by ordinance, shall include a statement explaining the public benefit of the amendment to the Special Use Permit.

E. Detailed Application and Approval Procedures for Amendments to Special Use Permits

The detailed procedures and submittal requirements for amendments to Special Use Permits are the same as those listed in Section 1102.3 C.3. However, sections 1102.3 C.5(e) and (f) do not apply to Managerial or Minor Amendments. The application processes for all amendments to Special Use Permits are also as generally depicted in Figure 1102.4-1.

Figure 1102.4-1
Application Process for Special Use Permit



Section 1103. Conditional Uses.

A conditional use is a land use that is listed is this article as a permitted use subject to obtaining a conditional use permit. A conditional use may be appropriate in some locations and may not be appropriate in other locations due to the particular physical or operational characteristics of the conditional use. The purpose of the conditional use permit process is to determine as an administrative act by the Town, and on a case by case basis, whether through compliance with prescribed development standards or through the imposition of development conditions the requested conditional use can be made compatible with surrounding existing or approved or anticipated land uses.

Section 1103.1. Nature of Conditional Use Permit.

The grant of a conditional use permit is an administrative act and not subject to reviews by referendum. A permit for a conditional use may be granted only if findings are made by the Planning Commission or, if the Planning Commission decision has been appealed, the Town Council that the standards for approval have been met by the applicant. A conditional use permit may be approved subject to compliance with additional conditions that are necessary or appropriate to reduce the impacts of the proposed use on neighboring properties and the community as a whole.

Section 1103.2. Uses Permitted. [605]

A. Dish Antennas that are greater than three feet in diameter, Broadcast Towers, Microwave Antennas, Personal Wireless Service Facilities and similar structures that project skyward as specified in Section 1003 Tall Structures and Antennas. Dish antennas that are three feet or less in diameter are not regulated by this ordinance.

   1. Definition

   These structures and facilities are for the reception or retransmission of over-the- air electronic communications.

   2. Bulk, Density and Height Standards shall be as provided in Section 1003.

B. Private Roadways

   1. Definition

   A roadway not dedicated to or maintained by the Town of Paradise Valley that provides access to properties. A private roadway shall be established only in conjunction with the vacation of a public roadway or in conjunction with the creation of a lot or lots and shall provide access to such lots.

   2. Standards

3. The following shall be reviewed in conjunction with approval of the development of the private roads:

   a. Right of way width - the minimum right of way shall be 50 feet

   b. Paved roadway width:

      i. where the roadway is to provide access to one or two residences, the driving surface shall not be less than 16 feet in width and shall be covered at a minimum with a 4 inch depth of aggregate base course meeting Town Standards (Article 5-6 of the Town Code) or a minimum of a 4 inch depth of decomposed granite.

      ii. where access to a public road for three or more residences is to be provided by a private road, all standards and requirements for subdivisions as contained in the codes and ordinances of the Town of Paradise Valley shall apply, and such private road shall be subject to those conditions imposed by reason of issuance of a conditional use permit.

   c. All private roads, for so long as they shall remain private, shall be maintained to the foregoing standards, and in the event the Town of Paradise Valley is required to perform any maintenance upon the same for the health, safety, and welfare of the people of the Town of Paradise Valley, the Town may assess the cost thereof against the party, heirs, executors, administrators, legatees and assignees of the residential parcels that were included in the subdivision or lot split or parcels utilizing or benefitting from the private road. Agreement thereto by such applicant shall be a condition of issuance of any subdivision approval, lot split approval, or any residential building permit in a subdivision or lot split that utilizes or benefits from the private road.

C. Municipally-Owned Water Booster Facilities

1. Definition

   "Municipally-Owned Water Booster Facilities" are secured parcels of land, enclosed by fencing or a wall, containing mechanical and electrical equipment, piping, surge tanks, control valves, telemetry electronics and other appurtenances on the premises for the sole purpose of distributing potable and/or fire safety water to residential neighborhoods and commercial properties through a water supply system owned by a municipality.

2. Standards

   Municipally-Owned Water Booster Facilities shall meet the following standards:

   a. Such Facilities may be placed (i) on private property in any zoning district within the Town with property owner approval, including, but not limited to, property upon which the applicant has obtained the grant of an appropriate

easement for the installation or construction of such facilities from the private property owner; and/or (ii) in the Town's right-of-way with the authorization of the Town Manager or his designee;

b. All equipment within the Facility shall be adequately secured and enclosed by a wall or fence with a minimum height of eight (8) feet and a maximum height of eleven (11) feet, measured from the highest outside finished grade, and composed of finished materials such as stucco, brick, stone, wrought iron with redwood slats, solid metal, wood, or tile;

c. Mechanical equipment, tanks and facility buildings and appurtenances shall not exceed eleven (11) feet in height except for any telemetry and exhaust venting equipment.

Section 1103.3 Application for Conditional Use Permit.

A. Applications for conditional use permits may be filed by any person, the Town of Paradise Valley, or by any federal, state, county, school district, or municipal or governmental agency owning property subject to the provisions of this ordinance. The applicant must be the real property owner or must provide a letter of authorization to file on the behalf of the property owner.

B. Applications for conditional use permits or appeals shall be accompanied by a fee which is set forth in the Town's fee schedule.

C. An application for a conditional use permit thereto shall contain a site plan that includes the following information:

1. A legal description of the parcel, including gross and net acreage. A recent American Land Title Association/American Congress on Surveying & Mapping (ALTA/ACSM) survey may be required if deemed necessary for a thorough review of the application.

2. A project narrative that includes a purpose statement for uses proposed in the application.

3. Drawings and descriptions showing the following where relevant to the proposed use:

a. significant topographical features of the site or area.

b. all lots to be served by a proposed private roadway and access to the nearest improved public roadway.

c. the locations and elevations of all adjacent habitable structures on properties adjacent to a proposed antenna structure.

Section 1103.4 Authority of Planning Commission; required findings.

A. The Planning Commission is authorized to hear applications for and grant those special exceptions designated in this article as conditional uses upon finding that the use covered by the conditional use permit, or the manner of conducting the same:

   1. will not cause a significant increase in vehicular or pedestrian traffic in adjacent residential areas; or emit odor, dust, gas, noise, vibration, smoke, heat, or glare at a level exceeding that of ambient conditions; or contribute in a measurable way to the deterioration of the neighborhood or area, or contribute to the downgrading of property values.

   2. will be in compliance with all provisions of this ordinance and the laws of the Town of Paradise Valley, Maricopa County (if applicable), State of Arizona, or the United States of America.

   3. will be in full conformity to any conditions, requirements or standards prescribed in the permit.

   4. will not conflict with the goals, objectives or purposes of the zoning district or Policies of the Town of Paradise Valley as set forth in the Town's General Plan.

B. The burden of proof for satisfying the requirements set forth in subsection A of this section shall rest with the applicant.

C. Where a conditional use permit is specifically required by the terms of this article, no structure, building, or land shall be used until a conditional use permit has been granted by the Planning Commission or the Town Council.

D. Any structural alteration to the interior or exterior of a structure or building containing any of the uses referred to in section 1103.2 of this ordinance, other than maintenance, shall require the securing of a conditional use permit.

E. Structures or buildings devoted to any use which is permitted under the terms of this article subject to the securing of a conditional use permit may be altered, added to, enlarged, expanded, or moved from one location to another on the lot only after securing a new conditional use permit, unless the Planning Commission or Town Council has previously issued a conditional use permit for such alteration, addition, enlargement, or expansion; and any use of the land which is permitted under the terms of this article subject to the securing of a conditional use permit may be extended over the lot on which such use is located only after securing a new conditional use permit, unless the Planning Commission or Town Council has previously issued a conditional use permit for such extension.

Section 1103.5 Revocation of Conditional Use Permits.

A. A conditional use permit may only be revoked by the Planning Commission upon a finding that there has been material noncompliance with a condition prescribed in

conjunction with the issuance of the conditional use permit or that the use covered by the conditional use permit or the manner of conducting the same violates the standards listed in this article that govern the granting of the conditional use permit.

B. Revocation of a conditional use permit shall become final only after:

1. the fifteen-day period expired within which an appeal may be filed; or

2. a decision of the Town Council upholding the revocation.

Section 1103.6 Notice and Hearings.

The Planning Commission shall fix a reasonable time for its hearings and give notice thereof to the parties in interest and the public by publishing notice in a newspaper of general circulation in the Town of Paradise Valley, giving at least fifteen days' notice of such hearing; and by posting the subject property at least seven days prior to the hearing.

Section 1103.7 Appeals.

A. The Town Council shall have the authority to hear and decide appeals from the action of the Planning Commission in the granting or denying of conditional use permits.

B. An appeal from a requirement or decision made by the Planning Commission may be taken within 15 days by an aggrieved person on a form provided by the Community Development Department and shall specify the basis of the appeal.

C. An appeal shall be heard by the Town Council de novo. The concurring vote of a majority of members present and not otherwise disqualified shall be necessary to reverse or modify a requirement or decision of the Planning Commission, otherwise such requirement or decision shall be affirmed.

D. The Town Council shall fix a reasonable time for its hearings and give notice thereof to the parties in interest and the public by publishing notice in a newspaper of general circulation in the Town of Paradise Valley, giving at least fifteen days' notice of such hearing; and by posting the subject property at least seven days prior to the hearing.

E. Any person aggrieved by any decision of the Town Council may file a complaint for special action in the superior court to review the Town Council’s decision.

Section 1104 Temporary Use Permits.

A temporary use permit grants: (1) authority to establish a temporary off-site construction facility in support of construction at another location which may consist of materials and machinery storage, temporary buildings and/or trailers, and construction-related activities; or (2) a permit for the temporary establishment of an on-site sales facility that is required during the initial promotional or sales activities of a new project.

Section 1104.1 Nature of Temporary Use Permit.

The grant of a temporary use permit is an administrative act. A temporary use permit shall be granted if the application meets the requirements set forth in this article and any conditions imposed on the authorized uses and activities.

Section 1104.2 Uses Permitted.

A. Structures for storing materials

B. Structures for temporary offices

C. Outdoor storage of materials

D. Minor assembly of structural or building components

E. Employee parking

F. Sales office located within a new residential development subject to the following standards:

    1. Minimum 20-foot setback to property lines will be required of any office located in a freestanding structure.

    2. limited to one per lot or subdivision and it shall not contain cooking appliances.

    3. the office may be located on the lot or subdivision under construction only during the period that the building(s) is being constructed and must be removed from the site after the construction is completed or upon expiration of two years from the time of issuances of the temporary use permit or building permit.

    4. if the office is for a subdivision under one ownership, it may be placed on any lot in the subdivision.

G. Other temporary construction support facilities

Section 1104.3 Application and Approval Procedures for Temporary Use Permits.

A. An application shall be obtained from the Town of Paradise Valley prior to commencing an activity or use permitted with a temporary use permit. The application shall also contain written permission for such use by the owner or legal representative of the off-site property.

B. The application shall list all proposed activities, designated locations, points of access and hours of operation of proposed activities to be conducted on the site.

C. The application shall indicate any proposed screening or buffering.

D. The temporary use permit, if approved, shall be valid for two years or until the date of issuance of the Certificate of Occupancy, Certificate of Completion or approved final inspection of the construction project, whichever occurs first.

E. The application shall be acted upon within seven days of filing.

F. An application for a six month time extension of a temporary use permit shall be granted if the activities or uses authorized by the temporary use permit are in compliance with the requirements set forth in this section and any conditions attached to the permit.

Section 1104.4 Authority of Town Manager.

The Town Manager or his designee is authorized to grant applications for temporary use permits.

Section 1104.5 Revocation of temporary use permits.

A. The Town Manager or his designee may revoke a temporary use permit if the permitee violates any requirement set forth in this section or any condition attached to the permit.

B. Notice of intention to revoke a temporary use permit shall be mailed to the permit holder and shall be posted on the property subject to the permit at least 5 calendar days before a permit may be revoked. The permit holder shall be given an opportunity to be heard before a revocation decision is rendered by the Town Manager or his designee.

Section 1105 Violations of Special Use Permits, Conditional Use Permits and Temporary Use Permits.

A violation of any requirement of this article that governs uses, structures and activities permitted through issuance of a Special Use Permit, a Conditional Use Permit or a Temporary Use Permit and a violation of any condition imposed by a Special Use Permit, Conditional Use Permit or a Temporary Use Permit shall constitute a violation of the Zoning Ordinance and shall be punishable as provided in Article XIV of this ordinance.

FOOTNOTE:
564 Ordinance # 564 – 11/03/2005 (Repealed and Replaced)
605 Ordinance # 605 – 09/25/2008
609 Ordinance # 609 – 10/22/2009
633 Ordinance #633 – 04/28/2011
657 Ordinance #657 – 11/15/2012
658 Ordinance #658 – 11/15/2012
659 Ordinance #659 – 11/15/2012

Article XII. PERSONAL WIRELESS SERVICE FACILITIES [437 455 511 564]

Section 1201. Purpose

A. The purpose of this ordinance is to establish appropriate locations, site development standards, and permit requirements to allow for personal wireless services to the residents of the Town, in a manner which will facilitate the location of various types of personal wireless service facilities in locations consistent with the residential character of the Town. The nature of residences, their scale (height and mass), their proximity to each other and the street, and the extensive natural, informal landscaping all contribute to this distinctive character. Precluding the adverse visual impact of these facilities within this virtually developed residential area is one of the primary objectives of this ordinance. Limitations on the height of antennas are intended to conform the antennas to the existing limitations of height of residential buildings. The ordinance is intended to allow personal wireless service facilities which are sufficient to provide adequate service to citizens, the traveling public and others within the Town and to accommodate the need for connection of such services to wireless facilities in adjacent and surrounding communities.

B. It is also the intent that this ordinance and its purposes are implemented as allowed by applicable law, particularly in light of evolving federal and state regulations, laws and interpretations, evolving technology and land uses for personal wireless services.

Section 1202. Definitions

For the purpose of this Article, the following terms shall have the meanings prescribed herein unless the context clearly requires otherwise:

1 "Antenna" means the surface from which wireless radio signals are sent from and received by a personal wireless service facility;

2 "Applicant" means a person or other entity who submits an application with the Town for a special use permit or major amendment to a special use permit for a personal wireless service facility. A personal wireless service carrier and the owner of the subject property shall be an applicant(s) or co-applicant(s) on such application;

3 "Co-location" means the use of a single mount and/or site by more than one personal wireless service;

4 "Commercial mobile radio service" means any of several technologies using radio signals at various frequencies to send and receive voice, data or video to and from mobile transceivers;

5 "Design" means the appearance of a personal wireless service facility, including but not limited to its material, color or shape;

6 "Equipment cabinet" means an enclosed mobile home, shed or box at the base of or near a mount within which are housed, among other things, batteries and electrical equipment (hereinafter referred to as "equipment"). This equipment is connected to the antenna by cable. Equipment cabinets are also called "base transceiver stations";

7 "Licensed carrier" means a company authorized by the FCC to build and operate a commercial mobile radio services system;

8 "Location" means property(ies) or site(s) where personal wireless service facilities are located or could be located;

9 "Modification" means any physical or operational change, alteration, or other modification of any of the following as they relate to a personal wireless service facility or the subject property upon which it is located, including but not limited to:

a. The site plan;
b. The sight line representation;
c. The design submittal as required in this Article;

The conversion of a single-use personal wireless service facility to a co-location is also considered a modification;

10 "Monopole" means a type of mount that is self-supporting with a single shaft of steel or concrete or other acceptable material;

11 "Permittee" means the owner of a subject property and a personal wireless service carrier;

12 "Personal wireless service facility" or "PWSF" means a facility for the provision of personal wireless services as defined by the Telecommunications Act 1996, and any amendments thereto. PWSFs are composed of two (2) or more of the following components:

a. Antenna
b. Mount
c. Equipment Cabinet
d. Security Barrier;

13 "Personal wireless services" means commercial mobile radio services, unlicensed wireless services and common carrier wireless exchange access services as defined in the Telecommunications Act of 1996, and any amendments thereto;

14 "Security barrier" means a locked, impenetrable wall or fence that completely seals an area from unauthorized entry or trespass;

15 "Sight line representation" means a drawing in which a sight line is drawn from the closest facade of each building, private road or right of way (viewpoint) within five hundred (500) feet of the PWSF to the highest point (visible point) of the PWSF. Each sight line shall be depicted in profile, drawn at one inch equals forty (40) feet unless otherwise specified by the Town. The profiles shall show all intervening trees and structures;

16 "Site" means the subject property where a personal wireless service facility is located or proposed to be located and includes any contiguous property(ies) under the same ownership as the subject property;

17 "Siting" means the method and form of placement of a personal wireless service facility on a specific area of a subject property;

18 "Subject property" means all the area within a lot, lots, or tax parcel(s) under common ownership upon which a personal wireless service facility is either proposed to be, or already is, developed, located, constructed or operated;

19 "Unlicensed wireless service" means commercial mobile services that can operate on public domain frequencies and that therefore need no FCC license.

Section 1203. General Requirements [564]

A. The determination of where a PWSF shall be located is subject to the following. Certain locations have been identified by the Town as potential PWSF sites and are subject to all of the provisions of this Article and the Town Code. Said locations are set forth in Town of Paradise Valley Resolution No. 932 as it may be amended from time to time. Any subject property that meets the requirements of this Article may be eligible for consideration for a PWSF, or modification thereof, pursuant to a conditional use permit, in accordance with the standards in this article.

B. A PWSF or modification thereof is permitted only with a conditional use permit, granted pursuant to Article 11, Sections 1103 et seq of the Zoning Ordinance and this Article. No PWSF may be developed, located, constructed or operated without a conditional use permit. A conditional use permit is required for any modification to a PWSF.

C. A PWSF may be mounted on a structure which is not a dwelling unit on the side or roof in accordance with the requirements of this Article. A PWSF is prohibited on any dwelling unit or site containing dwelling unit (s) unless otherwise authorized pursuant to Subsection A of this section.

Section 1204. Siting Standards [511 564]

The following siting criteria apply to consideration of a conditional use permit for a PWSF:

1 A PWSF shall be:

a. Completely screened from public view and rights of way by trees, mature vegetation, natural features or structures on the subject property, and

b. Completely camouflaged in a manner that is architecturally compatible with the structure on which it is mounted and integrated as an integral architectural element of the structure;

2. The screening required in this section may exist on the subject property or be installed as part of the proposed PWSF or a combination of both;

3. A PWSF shall not be approved for a location on a site containing a dwelling unit, except where the dwelling unit is located on the site of an existing Special Use Permit granted by the Town for a resort or guest ranch. A PWSF shall not be initially approved for a location closer than two hundred (200) feet from a dwelling unit in existence at the time of the initial approval of the conditional use permit for such PWSF site. For a proposed PWSF site that is adjacent to residentially zoned lots or parcels that are vacant at the time of the initial approval of the proposed conditional use permit for a PWSF, the proposed PWSF site shall be located no closer that two hundred (200) feet from the lot line of such vacant parcel or lot, less the greater of any applicable setback from such lot line or any platted or recorded easement adjacent to such lot line on the vacant parcel or lot. Once initially approved, changes to the dwelling unit locations or any changes in the setbacks or platted or recorded easements on the lots or parcels adjacent to the PWSF site shall not compel the removal or relocation of the PWSF that was initially approved for a conditional use permit in compliance with this section, nor shall the renewal of the conditional use permit for such a PWSF be withheld due to such changes in the adjacent lots or parcels.

4. A PWSF shall be set back from all property lines a distance equal to the height of the mount or the antenna, whichever is higher, and comply with all zoning setback requirements;

5. The height of a PWSF shall be limited to

   a The maximum height applicable to a building on the subject property pursuant to the Town's Zoning Ordinance Table 1001-A1. A roof-mounted PWSF may project a maximum of four and one-half (4 1/2) feet above the highest point of the roof so long as it does not exceed the maximum height provided in Table 1001-A1, whichever is lower; or

   b If mounted to an existing structure on the subject property, the height of that structure.

   Any PWSF shall be screened and camouflaged as required herein. The height requirements of this Section supersede requirements specified for antenna in Section 1003 and Table 1003-1 of the Town's Zoning Ordinance as applied to a PWSF;

6. A side-mounted PWSF shall not project more than forty-two (42) inches from the side a nondwelling unit facade, shall not extend above the highest point of the roof of the structure and shall be screened and camouflaged as required herein. The PWSF shall not project into an easement, driveway or setback unless otherwise specified in the conditional use permit;

7. An equipment cabinet shall be located within or adjacent to the structure on which a PWSF is placed, or located below natural grade underground if site conditions permit and if technically feasible. An equipment cabinet shall be completely screened from view by compatible wall, fence or landscaping consistent with Town landscaping guidelines except that an equipment cabinet larger than one hundred forty-four (144) cubic feet may not be required to be totally screened from view if the Planning Commission finds, in its discretion, that the cabinet has been designed with a structure or facade, materials, colors or detailing that effect a structure which emulates the residential character of the area;

8. A security barrier shall be screened from view through the use of appropriate landscaping materials consistent with Town landscaping guidelines.

Section 1205. Design Standards [564]

The following design criteria apply to consideration of a conditional use permit for a PWSF, in addition to others which may be identified and utilized by the Planning Commission in its consideration of the conditional use permit:

1. Appearance. The degree to which the PWSF "blends with" or "disturbs" the setting, the subject property and its character and use, or neighboring properties and their character and use;

2. Form. The degree to which the shape of the PWSF and any equipment cabinet relates to its surroundings;

3. Color. A PWSF shall be in natural tones and a non-reflective color or color scheme appropriate to the background against which the PWSF would be viewed from a

majority of points within its viewshed. "Natural" tones are those reflected in the natural features and structural background against which the PWSF is viewed from a majority of points within its viewshed. Final colors and color scheme must be approved by the Planning Commission;

4. Size. The silhouette of the PWSF shall be reduced to minimize visual impact.

To the extent allowed by law, the Town shall consider the cumulative visual effects of PWSFs and any mount, specifically their appearance or domination of the skyline, natural and structural features or terrain, in determining whether to approve a conditional use permit.

Section 1206. Radiofrequency (RF) Performance and Interference Standards and Monitoring [564]

A. To the extent allowed by law, the following radiofrequency (RF) performance standards apply to consideration of a conditional use permit for a PWSF, in addition to monitoring requirements as required in this Article:

1. All equipment proposed for a PWSF shall meet the current FCC RF Guidelines and any amendments thereto (hereafter "FCC Guidelines");

2. Any side-mounted or roof-mounted equipment shall meet FCC Guidelines, including but not limited to the following:

a. At the roof-mount or at the side-mount, the equipment shall meet the FCC Guidelines for occupational/controlled conditions;

b. At ground level at the point of the structure closest to the antenna, the equipment shall meet FCC Guidelines for general population/uncontrolled conditions.

B. Within ninety (90) days after FCC issuance of an operational permit for the PWSF, and annually thereafter, the personal wireless service carrier shall submit a written report providing existing and maximum future projected measurements of RF radiation from the PWSF for:

1. Existing PWSF: Maximum RF radiation from the PWSF RF radiation environment. These measurements shall be for the measurement conditions specified in Subsection A of this Section;

2. Existing PWSF plus cumulative: Maximum estimate of RF radiation from the existing PWSF plus the maximum estimate of RF radiation from the total addition of co-located PWSFs. These measurements shall be for the measurement conditions in Subsection A of this Section;

3. Certification, signed by an RF engineer, stating that RF radiation measurements are accurate and meet FCC Guidelines as specified in Subsection A of this Section.

If FCC Guidelines are changed during the period of any conditional use permit for a PWSF use, then the PWSF shall be brought into compliance with such revised guidelines within the time period provided by the FCC or if no time period is stated, then within sixty (60) days of the effective date of such guidelines.

C. If at any time during the term of the permit the Town has reasonable evidence that the Permittee or personal wireless service carrier is not in compliance with FCC Guidelines, and the Town provides notice of such, the Permittee or personal wireless service carrier so notified shall provide to the Town, within thirty (30) days after such notice, an analysis and determination of its compliance with FCC guidelines showing the data collected and status pursuant to FCC Guidelines. If on review, the Town finds that the PWSF does not meet FCC Guidelines, the Permittee or personal wireless service carrier shall have sixty (60) days from the date of the Town's finding of noncompliance to bring the PWSF into compliance. If compliance is not achieved in the sixty-day period, the conditional use permit may be revoked or modified by the Town.

D. The Permittee shall ensure that the PWSF does not cause localized interference with the reception of area television or radio broadcasts or to personal wireless services. If on review the Town finds that the PWSF interferes with such reception, and if such interference is not cured by the Permittee within sixty (60) days after notice from the Town, the Town may revoke or modify the conditional use permit.

Section 1207. Noise and Environmental Standards [564]

A. To the extent allowed by law, the following noise and environmental standards apply to consideration of a conditional use permit for a PWSF in addition to the monitoring requirements of this Article:

1 Roof-mounted or side-mounted equipment for a PWSF shall not generate noise in excess of fifty (50) decibels (dba) at ground level at the base of the facility closest to the antenna;

2 An environmental assessment is required by the National Environmental Policy Act (NEPA) for any PWSF prior to commencing operations where any of the following exist:

a. Wilderness area;

b. Wildlife preserve;

c. Endangered species;

d. Historical site;

e. Indian religious site;

f. Flood plain;

g. High intensity white lights in residential neighborhoods;

h. Excessive radiofrequency radiation exposure.

3 An environmental assessment which, at a minimum, conforms with FCC requirements shall be submitted to the Town for each PWSF where any of the above exists, and when the FCC requires such an environmental assessment to be submitted to the FCC. If the applicant has determined that an environmental assessment is not required pursuant to FCC rules, this Article and applicable state law and Town Code, a written certification to that effect must be submitted to the Town. If an applicant has not included an environmental assessment that the Town finds to be necessary under the National Environmental Policy Act, the Town may prepare, or cause to be prepared, such an environmental assessment at the applicant's expense. The environmental assessment shall be amended or revised by the applicant within thirty (30) days after notice to do so from

the Town when modifications are made or occur on the PWSF. Failure to amend or revise shall constitute grounds for revocation of the conditional use permit.

B. Within ninety (90) days after the approval of the conditional use permit and annually from the date of approval of the permit, the Permittee shall submit existing and maximum future projected measurements of noise from the PWSF for the following:

1. Existing PWSF: Maximum noise radiation from the PWSF. These measurements shall be for the type of mounts specified in Subsection A of this section;

2. Existing PWSF plus cumulative: Maximum estimate of noise from the existing PWSF plus the maximum estimate of noise from the total addition of co-located PWSFs. These measurements shall be for the type of mounts specified in Subsection A of this section;

3. Certification, signed by an acoustical engineer, stating that noise measurements are accurate and meet Subsection A of this section.

Section 1208. Co-Location and Limitations [564]

A. A Permittee shall cooperate with other personal wireless service carriers in co-locating antennas and mounts provided the proposed co-locators have received a conditional use permit for the use at such site from the Town. A Permittee shall exercise good faith in co-locating other personal wireless service carriers and sharing the permitted site, provided such shared use does not give rise to a substantial technical level impairment of the ability to provide the permitted use (i.e., a significant interference in broadcast or reception capabilities). Applicants shall demonstrate a good faith effort to co-locating with other personal wireless service carriers, including but not limited to:

1. Contact with all other personal wireless service carriers operating in the Town;

2. Sharing information necessary to determine if co-location is feasible under the design configuration most accommodating to co-location;

In the event a dispute arises as to whether a Permittee has exercised good faith in accommodating other users, the Town may require a third party technical study at the expense of either or both the applicant and Permittee.

B. All applicants shall demonstrate reasonable efforts in developing a co-location alternative for their proposal.

C. Failure to comply with the co-location requirements of this Section may result in the denial of a permit request or revocation of an existing permit.

Section 1209. Submittal Requirements [564]

A. In addition to the information requested in the Town's conditional use permit application, the following items shall be required for a PWSF application:

1. A master site plan in accordance with Planning Commission rules and regulations showing the subject property and adjacent properties; all existing and proposed buildings on the subject property and their purpose; the specific placement of the PWSF antenna, mount and equipment cabinet; security barrier (if any), including type and extent and point of controlled entry on the site; fall zone; all proposed changes to the existing site, including grading, vegetation, roads, sidewalks and driveways;

2. A landscape plan showing specific placement of existing and proposed vegetation, trees, shrubs, identified by species and size of specimen at installation in accordance with Town landscape guidelines;

3. Photographs, diagrams, photosimulations and sight line representations as listed below:
    a. A diagram or map showing the viewshed of the proposed facility;
    b. Sight line representation;
    c. Existing (before condition) photographs illustrated by four (4) by six (6) inch color photograph(s) of what can currently be seen from any adjacent residential buildings or properties, private roads and rights of way adjacent to the site;
    d. Photosimulations of the proposed facility from each adjacent residential properties or buildings, private roads and public rights-of-way adjacent to the site (after condition photographs). Such photosimulations shall include, but not be limited to, each of the existing condition photographs with the proposed PWSF superimposed on it to show what will be seen from residential buildings, properties, private roads and rights of way adjacent to the site;
    e. Aerial photograph as required by the Planning Commission rules and regulations;
4. Siting elevations, or views at natural grade, from all directions (north, south, east, west) for a fifty-foot radius around the proposed PWSF plus from all existing rights of way and private roads that serve the subject property. Elevations shall be at one-quarter inch equals one foot scale and show the following:
    a. Antenna, mount, equipment cabinet;
    b. Security barrier. If the security barrier will block views of the PWSF, the barrier drawing shall be cut away to show the view behind the barrier;
    c. Any and all structures on the subject property, existing trees and shrubs at current height and proposed trees and shrubs at proposed height at time of installation;
    d. Grade changes or cuts and fills to be shown at original grade and new grade line;
5. Design submittals as follows:
    a. Equipment brochures for the PWSF such as manufacturer's specifications or trade journal reprints;
    b. Materials of the PWSF and security barrier, if any, specified by generic type and specific treatment, such as anodized aluminum, stained wood, painted fiberglass, etc.;
    c. Colors represented by samples or a color board showing actual colors proposed;
    d. Dimensions of all equipment specified for all three dimensions: height, width and breadth;

e. Appearance shown by at least two (2) photographic superimpositions of the PWSF within the site. The photographic superimpositions shall include the antenna, mount, equipment cabinet and security barrier, if any, for the total height, width and breadth. The submittal may also include, if required by the Town, a scaled three-dimensional model of the PWSF on the site;

6. Market and service maps as follows:

a. A map showing the service area of the proposed PWSF and the explanation of the need for that facility.

b. A map showing the locations and service areas of other PWSF sites operated by the applicant and those that are proposed by the applicant which are close enough to impact service within the Town or are within a two-mile radius of the limits of the Town;

7. Co-location submittals, including signed statements indicating:

a. The applicant agrees to allow for the potential co-location of additional PWSF(s) by other personal wireless services and carriers on the applicant's structure or facility or within the same site;

b. That the applicant agrees to remove the PWSF as required by this Article;

c. That the applicant has made a good faith effort to achieve co-location with other carriers and facilities as required in this Article, and if co-location is not feasible for this application for a substantial technical reason, a written statement of the reasons for the infeasibility;

8. A lease agreement with the owner or landholder shall also be submitted that:

a. Allows the landholder to enter into leases with other providers;

b. Specifies that if the carrier fails to remove the PWSF when required by this Article, the responsibility for removal falls upon the landholder; and

c. Allows entry by the Town and its agent for the purpose of inspection and compliance with Town Codes;

d. Consents to the terms of Section 1211 of this Article;

9 To the extent allowed by law, radiofrequency (RF) radiation performance submittals shall include in a form or study acceptable to Town staff the applicant's written statement of the existing and maximum future projected measurements of RF radiation from the proposed PWSF:

a. Existing or ambient: measurement of existing RF radiation;

b. Existing plus proposed PWSF: maximum estimate of RF radiation from the proposed PWSF plus the existing RF radiation environment. These measurements shall be for the conditions specified in the RF performance standards in this Article;

c. Existing plus proposed PWSF plus cumulative: maximum estimate of RF radiation from the proposed PWSF plus the maximum estimate of RF radiation from the total addition of co-located PWSF plus the existing RF radiation environment. These measurements shall be for the conditions specified in the RF performance standards in this Article;

d. Certification, signed by an RF engineer, stating that RF radiation measurements are accurate and meet FCC Guidelines as specified in the RF performance standards in this Article;

10 To the extent allowed by law, noise performance submittals shall include a statement of the existing and maximum future projected measurements of noise from the proposed PWSF measured in decibels (logarithmic scale, accounting for greater sensitivity at night) for the following:

a. Existing or ambient: the measurement of existing noise;

b. Existing plus proposed PWSF: maximum estimate of noise from the proposed PWSF plus the existing noise environment;

c. Existing plus proposed PWSF plus cumulative: maximum estimate of noise from the proposed PWSF plus the maximum estimate of noise from the total addition of co-located PWSFs plus the existing noise environment;

d. Certification signed by an acoustical engineer stating that noise measurements are accurate and meet the noise performance standards section of this Article;

11. To the extent allowed by law, environmental submittals shall include an environmental assessment if required in the environmental standards section of this ordinance. If the applicant determines that the environmental assessment is not required, certification to that effect shall be provided. The applicant shall also list location, type and amount of any materials proposed for use within the PWSF that are considered hazardous by the federal, state or town government.

B. In addition to the requirements of this Article, processing and consideration of a PWSF conditional use permit shall comply with the conditional use permit requirements specified in Article 11, Sections 1103~~1~~ et seq. of the Zoning Ordinance.

Section 1210. Technological Change and Periodic Review.

A. The Town recognizes that PWSFs and communication technologies in general are currently subject to rapid change. Innovations in such things as switching hardware and software, transmission/receiving equipment, communications protocols, and development of hybrid cable/wireless systems may result in reducing the impact of individual facilities and to render specific portions of this ordinance obsolete. Therefore, the Town may review this Article periodically and assess its provisions relative to current trends in the communications industry, innovations in communications technology, permit activity during the preceding years, and effectiveness in producing PWSFs that are compatible with the Town's residential character.

B. The Town may recommend updates to this Article that may include, but not be limited to the deletion, modification, or addition of allowed locations; allowed heights; site development requirements; administrative review possibilities; or permitting procedures.

C. When changes are made pursuant to Subsection B, the Town and Permittees agree in good faith to review and modify the stipulations and terms of such permits during their terms in order to reflect current technologies and then current laws and ordinances. If such modifications adversely and materially affect, either operationally or monetarily, Permittee's use of a PWSF, such modifications may not be made without a Permittee's consent. If such

modifications adversely affect the Town's regulations or this permit, such modifications may not be made without the Town's consent.

Section 1211. Permit Limitations and General Conditions. [564]

A. A conditional use permit shall expire five (5) years after the date of the permit approval. A Permittee wishing to continue the use at the end of the five-year period must apply for a conditional use permit renewal application to continue that use at least six months prior to its expiration. In ruling on the renewal the Planning Commission shall apply all then existing regulations affecting the application.

B. The conditional use permit shall become null, void and non-renewable if the permitted facility is not constructed and placed into use within one year of the date of permit approval, provided that the conditional use permit may be extended one time for six (6) months if construction has commenced before expiration of the initial year.

C. The permit shall expire and the Permittee must remove the PWSF if the use is discontinued for a period in excess of ninety (90) days in any three-hundred-sixty-five (365) day period. A Permittee shall notify the Town in writing at least thirty (30) days prior to abandonment or discontinuance of operation of the PWSF. Failure to give such notice shall be considered abandonment of the special use permit or amendment by the Permittee.

D. If the conditional use permit expires, terminates, is abandoned or revoked for any reason pursuant to this Article or the Town Code, if removal of the PWSF is required in this Article, or if the use is discontinued pursuant to this Article, the PWSF shall be removed as required herein. If the PWSF is not so removed, the Town may cause the facility to be removed and all expenses of removal shall be paid by the owner of the land where the facility is located. If not paid by the owner within thirty (30) days of notice by the Town, the Permittee agrees that the Town's costs shall constitute a lien upon the subject property upon its execution and filing with the county recorder's office. The term "remove" shall include but not be limited to the following:

   1 Removal of antenna, mount, equipment, equipment cabinet, security barrier from the site;

   2 Transportation of the antenna, mount, equipment, equipment cabinet or security barrier to a location off-site; if the location is within the Town limits, it is subject to approval by the Town.

   3 Restoration of the site of the PWSF to its natural condition, except that any landscaping and grading shall remain in finished condition.

E. A personal wireless service carrier, upon granting of a conditional use permit for a PWSF use, shall indemnify, protect and hold harmless the Town, its officers and agents, from and against any and all liabilities, losses, damages, demands, claims and costs, including court costs and attorney fees (collectively "liabilities") incurred by the Town arising directly or indirectly from 1) the PWSF use as contemplated herein and in the use permit; and 2) the installation and operation of the PWSF permitted thereby, including without limitation, any and all liabilities arising from emission by the PWSF of electromagnetic fields or other energy waves or emissions. The personal wireless service carrier's compliance with this Section is an express condition of the conditional use permit and is binding on any and all of

personal wireless service carrier's successors and assigns. The requirements of this section shall survive the termination of any such permit.

F. The Permittee shall maintain the PWSF to standards that are imposed by the Town at the time of granting of a permit. Such maintenance shall include, but shall not be limited to, maintenance of the paint, structural integrity and landscaping. If the Permittee fails to maintain the facility, the Town may undertake the maintenance at the expense of the Permittee or terminate or revoke the permit, at its sole option. If such maintenance expense is not paid by the owner within thirty (30) days of notice by the Town, the Permittee agrees that the Town's costs shall constitute a lien upon the subject property upon its execution and filing with the county recorder's office.

G. A conditional use permit granted to a Permittee is specific to the owner and personal wireless service carrier and may not be assigned, provided however that the personal wireless service carrier may assign its interest in the permit to any subsidiary or other affiliate of the personal wireless service carrier. In the event of such assignment, the assignee shall re-execute the conditional use permit within thirty (30) days of the effective date of the assignment or the permit shall automatically expire. Permittee shall notify the Town of any change in ownership or operation of the PWSF at least ninety (90) days prior to such change taking place for approval by the Town, which approval shall not be unreasonably withheld.

H. In its consideration of applications herein, and in addition to criteria provided in this article, Article 11 (Sections 1103 et seq) of the Zoning Ordinance and within the authority granted by law, the Town may also consider and prescribe limitations on the locations and numbers of special use permits which may be granted pursuant to this article.

I. Where the Planning Commission finds that strict compliance with the requirements of this Article may result in extraordinary hardship or are needed to ensure the Town's compliance with Federal or state law, the Planning Commission may modify such requirements only upon a showing of noncompliance with applicable law or extraordinary hardship so that substantial justice may be done and the public interest secured. Hardship as used herein shall include, but not be limited to, a finding that special circumstances applicable to the property, including its size, shape, topography, location or surroundings, will deprive such property of privileges enjoyed by other property in the same classification in the same zoning district through the strict application of the zoning ordinance. In granting such modifications, the Planning Commission may require such conditions as will, in its judgment, secure substantially the objectives of the standards or requirements so varied and modified.

J. Any violation of the terms of this Article or the conditional use permit may result in revocation by the Town of the conditional use permit. Acceptance of any portion of the conditional use permit is acceptance of the entire conditional use permit and the terms of this Article.

K. Within ninety (90) days after issuance of the FCC operational permit, the personal wireless service carrier shall provide a copy of such permit to the Town and register the PWSF, providing information and data as may be requested by the town. Any change in the permit or registration data shall be filed with the Town within thirty (30) days after the change is made. The personal wireless service carrier shall submit to the Town a copy of is FCC Form

600 prior to the Town's approval of final inspection of a building permit for the PWSF or portion thereof.

L. The Town and its agents are authorized to enter on the subject property and PWSF site for the purpose of inspection and determining compliance with this Article and the provisions of the special use permit or amendment thereto.

Section 1212. Applicability

The requirements of this ordinance apply to all new PWSFs and modification of any existing PWSFs.

FOOTNOTES

437 Ordinance #437 - 02/13/97
455 Ordinance #455 - 02/26/98
511 Ordinance #511 – 07/26/2001
564 Ordinance #564 – 11/03/2005

Article XIII. ENFORCEMENT [470]

Section 1301. Duties:

It shall be the duty of the Building Inspector to enforce this Ordinance. The Building Inspector shall receive applications required by the Ordinance, issue permits and furnish the prescribed certificates. He shall examine premises for which permits have been issued, and shall make necessary inspections to see that the provisions of this Ordinance are complied with. He shall, when requested by the Mayor, or when the interests of the municipality so require, make investigations in connection with matters referred to in this Ordinance and render written reports on the same. For the purpose of enforcing compliance with law, he shall issue such notices or orders as may be necessary.

Section 1302. Inspections:

Inspections shall be made by the Building Inspector or a duly appointed assistant.

Section 1303. Rules:

For carrying into effect its provisions, the Building Inspector may adopt rules consistent with this Ordinances.

Section 1304. Records:

1. The Building Inspector shall keep careful and comprehensive records of applications, or permits issued, or certificates issued, of inspections made, of reports rendered, and of notices or orders issued. He shall retain on file copies of all papers in connection with building work so long as any part of the building or structure to which they relate may be in existence.

2. All such records shall be open to public inspection at reasonable hours, but shall not be removed from the office of the Building Inspector.

Section 1305. Reports:

The Building Inspector shall make a report to the Mayor once each month, or more often if requested including statement of permits and certificates issued and orders promulgated.

FOOTNOTES

470 Ordinance #-470- 1/14/99

Article XIV. VIOLATION AND PENALTY [564]

Section 1401.[76]

Any person, firm or corporation whether as principal, owner, agent, tenant, or otherwise who violates, disobeys, omits, neglects or refuses to comply with, or who resists the enforcement of any of the provisions of this Ordinance shall, upon conviction, be punished by a fine of not more than two thousand five hundred dollars ($2,500.00) or by imprisonment in a designated place of confinement for a term not exceeding six (6) months or by both fine and imprisonment. Each day that a violation is permitted to exist shall constitute a separate offense.

Section 1402.

In case any building or structure is constructed, reconstructed, altered, repaired, converted, or maintained, or any building, structure or land is used in violation of this Ordinance, the Town or any owner or tenant of real property in the same contiguous zoning district as the building or structure in question, in addition to other remedies, may institute any appropriate action or proceedings (1) to prevent the unlawful construction, reconstruction, alteration, repair, conversion, maintenance, or use; (2) to prevent the occupancy of the building, structure or land; (3) to prevent any illegal act, conduct, business or use in or about the premises; or, (4) to restrain, correct or abate the violation. When any such action is instituted by an owner or tenant, notice of such action shall be served upon the municipality at the time suit is begun, by serving a copy of the complaint on the chief executive officer of the municipality, no such action may be maintained until such notice has been given.

In any such action or proceeding, the court with jurisdiction thereof has the power and in its discretion may issue a restraining order, or a preliminary injunction, as well as a permanent injunction, upon such terms and under such conditions as will do justice and enforce the purposes of this Ordinance. If a permanent injunction is decreed in any such action or proceedings, the court in its decree may, in its discretion, allow the plaintiff a reasonable sum of money for the services of the plaintiff's attorney. This allowance shall be a part of the costs of the litigation assessed against the defendant, and may be recovered as such.

FOOTNOTE:

76 Ordinance #249 - 11/9/78
564 Ordinance #564 – 11/03/2005

Article XV. CERTIFICATES OF OCCUPANCY

Section 1501. Certificates of Occupancy for a Building:

No premises or building shall be occupied except after issuance of a Certificate of Occupancy. The application for a Building Permit shall constitute the application for a Certificate of Occupancy.

No Certificate of Occupancy shall be issued until all onsite and offsite construction and improvements have been inspected and approved by the Chief Building Inspector or Town Engineer, as the case may be, except that a temporary Certificate of Occupancy may be issued for any model home in a subdivision provided the same shall not allow occupancy as a dwelling; and except that the Town Manager may issue a temporary Certificate of Occupancy for a period not exceeding three months on such conditions as will adequately protect against the failure to complete all onsite and offsite construction improvements; and except that a Certificate of Occupancy may be issued by the Town Manager for a period not exceeding one year where the only work to be performed is that of alteration of an existing building.

Section 1502. Certificate of Occupancy for Land:

Certificate of Occupancy for the use of vacant land or the change in the character of the use of land as herein provided, shall be applied for before any such land shall be occupied or used, and a Certificate of Occupancy shall be issued within three (3) days after the application has been made, provided such use is in conformity with the provisions of these regulations.

Section 1503.

Certificate of Occupancy shall state that the building or proposed use of a building or land complies with all the building and health laws and ordinances and with the provisions of these regulations. A record of all certificates shall be kept on file in the office of the Chief Building Inspector and copies shall be furnished, on request, to any person having a proprietary or tenancy interest in the building affected. No fee shall be charged for a Certificate of Occupancy.

Article XVI. HOME OCCUPATION [566]

Section 1601. Purpose
The purpose of the home occupation provision is to restrict business activity to home occupations which are compatible with the residential character of the neighborhood.

Section 1602. General
Home occupations shall be permitted in all residential districts subject to the regulations for home occupations set forth in this article.

Section 1603. Regulations for home occupations

1. A business license from the town shall first be obtained, as per section 4-3-1 license required, of the town code;

2. A home occupation shall be conducted only in fully enclosed structures;

3. A home occupation shall clearly be an accessory use to the existing residential use and not change the residential character of the site and/or neighborhood.

4. renting or use of residential properties as a commercial venue for weddings, luncheons, dinners, auctions, sales or similar events, is prohibited;

5. A home occupation may have a name plate affixed to the house of not more than 144 square inches. No other exterior sign or display shall be allowed;

6. No goods shall be sold and delivered to the customer on the premises except those prepared on the premises;

7. All parking associated with the home occupation shall be on site;

8. Hours of operation shall be limited to no earlier than 7am and no later than 10pm for activity which is visible or audible off the property;

9. No storage of materials shall be visible from off the property;

10. Emission of odor, dust, vibration, smoke, heat, or pollutants beyond any boundary of the lot on which the use is conducted, or at a level exceeding that of ambient conditions, is prohibited; and

11. The residential site shall not be used as a dispatch area to centrally manage a business which entails employees reporting to the site to receive work assignments, equipment, or materials.

FOOTNOTE:
564 Boundaries of Districts, was repealed by Ordinance Number 564, and moved to Article III, Section 303
566 Ordinance #566 – 01/12/2006

Article XVII. ASSISTED LIVING HOME [564] [567]

Section 1701. Assisted Living Home, subject to the following provisions:

A. Distribution of Uses. No assisted living home shall be located on a lot within one thousand three hundred and twenty (1,320) feet, measured by a straight line in any direction, from the lot line of another assisted living home located within the Town of Paradise Valley or any other adjacent jurisdiction.

B. Occupancy. The number of residents at such home shall be limited by applicable state laws, including any minimum square footage requirement per person, but in no event shall the number of residents exceed ten (10), not including staff.

C. Licensure. Such home shall be licensed or certified by the State of Arizona, and satisfactory evidence thereof shall be on file with the Town. In the event that the State of Arizona revokes or terminates the license or certification to operate such a home, the person operating the home shall immediately cease operations and inform the Town of such revocation or termination.

D. Administrative Review. Such home shall be reviewed and approved by the Planning Department Director, or designee, for building code and land use compliance prior to the use commencing.

E. Code compliance. Such home shall comply with all applicable Town codes, including building codes, fire safety regulations, zoning and subdivision codes.

F. Compatibility. Such home and its premises shall be maintained in a clean, well-kept condition that is consistent in materials and design style with homes in the surrounding or adjacent neighborhood.

G. Threat to Community. Such home shall not house any person whose tenancy would constitute a direct threat to the health or safety of other individuals or would result in substantial physical damage to the property of others.

H. All parking by staff associated with such home shall be on site.

FOOTNOTE:

564 Ordinance #564 – 11/03/2005**(**Interpretation, Purpose and Conflict, was repealed by Ordinance Number 564, and moved to Article I, Section 103)

567 Ordinance #567 – 11/17/2005

Article XVIII. REPEALED [564]

Note: This Article, Amendments, was repealed by Ordinance Number 564, and moved to Sections 306 through 310 of Article III, Districts, Boundaries, and Amendments.

Article XIX. REPEALED [564]

Note: This Article, Violation and Penalty, was repealed by Ordinance Number 564, and moved to Article XIV, Violation and Penalty.

Article XX. REPEAL, VOID PARTS, SAVING CLAUSE, EFFECTIVE DATE

Section 2001.

All Ordinances or parts of Ordinances in conflict herewith are hereby repealed.

Section 2002.

The invalidity of any section of the Ordinance shall not affect the validity of the remainder of said section or the remainder of this Ordinance.

Section 2003.

This Ordinance shall be in full force and effect from and after its passage, approval and publications, as required by law.

Section 2004.

The repeal of the Ordinances or parts thereof specified in Section 2001 of this article shall not (1) affect suits pending or rights existing immediately prior to the effective date of this Ordinance; (2) impair, avoid, or affect any grant or conveyance made or right acquired or cause of action now existing under any such repealed ordinance or amendment thereto; or, (3) affect or impair the validity of any bond or other obligation issued or sold in constituting a valid obligation of the issuing authority immediately prior to the effective date of this Ordinance.

Article XXI. REPEALED [564]

Note: This Article, Cluster Plans, was repealed by Ordinance Number 564, and moved to Article IX, Cluster Plans.

Article XXII. HILLSIDE DEVELOPMENT REGULATIONS [110 112 181 193 194 409 425 533 558 654580]

Section 2200. INTRODUCTION

As valuable scenic resources, Camelback Mountain, Mummy Mountain and the Phoenix Mountains provide a permanent visual presence that exemplify what is unique about Paradise Valley. They define the location and character of the Town, shape our sense of place and contribute to the Town's identity. These land forms, their foothills, and other areas over a 10% slope, offer a desirable setting visible to the entire metropolitan area and an intrinsic aesthetic value to the Town; therefore they require unique standards resulting from the characteristics of hillside terrain.

Section 2201. PURPOSE

This article exists to establish provisions to: a) regulate the intensity of development; b) preserve and protect the hillside environment; c) provide for the safety and welfare of the Town and its residents; and d) establish rules and procedures for review by the Hillside Building Committee of hillside development, building and construction plans through the implementation of the following:

1. Require building massing to adapt to the natural hillside topography thereby reducing the scarring effects of roads, drives, building pads and cut and fill slopes.

2. Encourage all improvements to be designed and constructed in a manner that minimizes the impact of development from viewpoints on the valley floor and adjacent slopes.

3. Prevent unnecessary grading or stripping of vegetation, preserve drainage patterns, protect the public from natural hazards of storm water runoff and erosion, and require re-vegetation in order to maintain the natural landscape environment.

4. Preserve visual open space, unique natural features, wildlife habitats and retain the integrity and natural states of the identified dominant peaks and ridges.

5. Provide development and construction practices and methods to ensure greater fire protection in hillside development areas.

6. Require limited and efficient use of exterior lighting to maintain minimal night-time lighting levels and preservation of the dark sky.

This Article endeavors to enhance design quality so that the resulting development maintains the essential natural characteristic and context of the hillside consistent with the goals and policies of the Town's General Plan.

<u>Section 2202</u>. IMPLEMENTATION

The provisions of this Article shall apply to all land within a Hillside Development Area as denoted on **FIGURE 2 – HILLSIDE DEVELOPMENT AREA** and to all lands where the natural terrain under the building pad has a slope of ten percent (10%) or greater (see example below), whether shown in Figure 2 or not. However, a 10% or greater slope, in an area not denoted on Figure 2, created by a natural wash on land that would otherwise not be classified as hillside land, shall be exempt from the hillside regulations. Hillside lands are also subject to special provisions relating to lot split and subdivision development as set forth in the subdivision code. If there is a conflict between the Hillside Development provisions and another section of this Ordinance or the Town Code, these provisions shall prevail.

FIGURE 1 –10% SLOPE

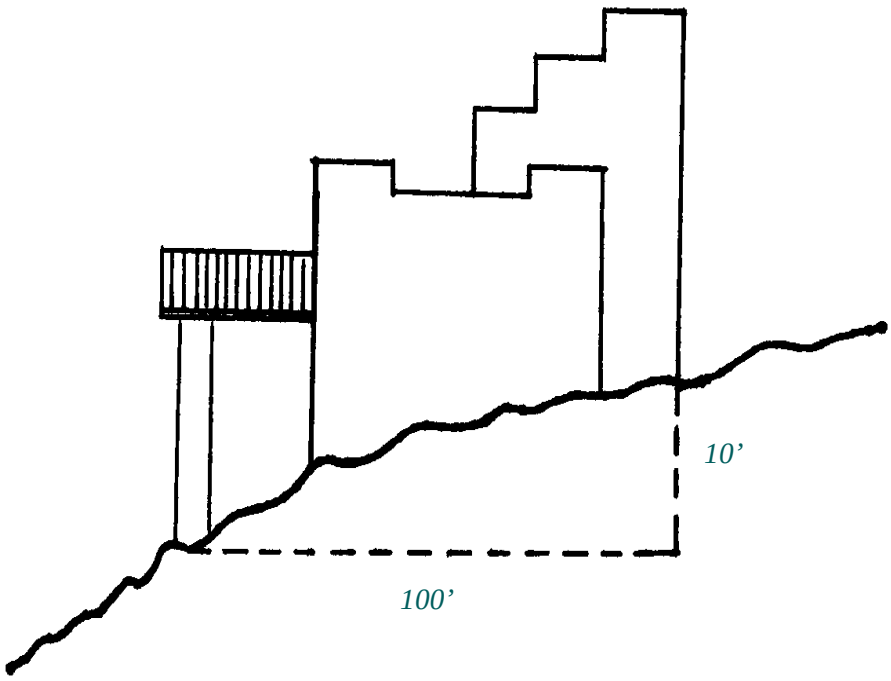


FIGURE 2 – HILLSIDE DEVELOPMENT AREA

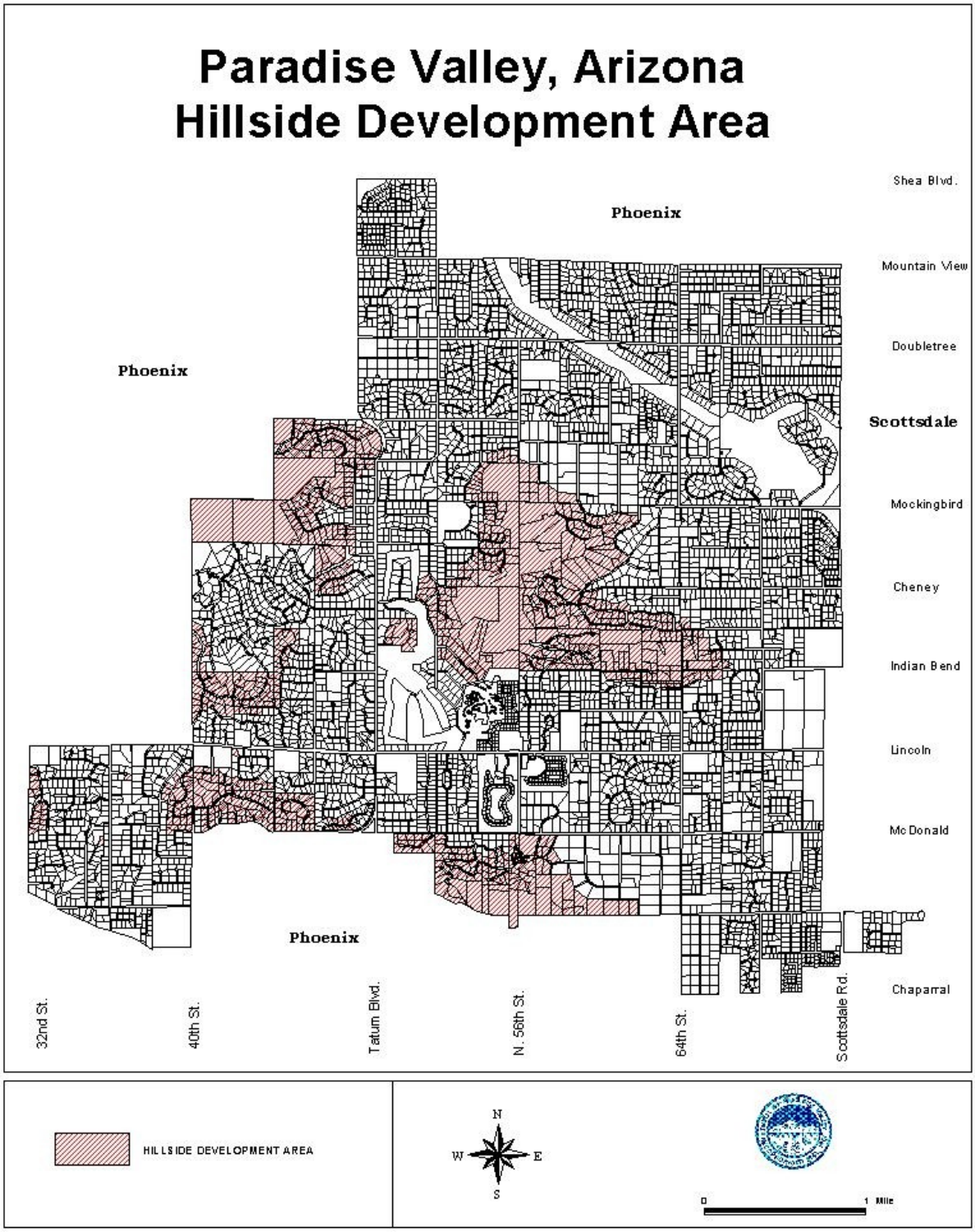
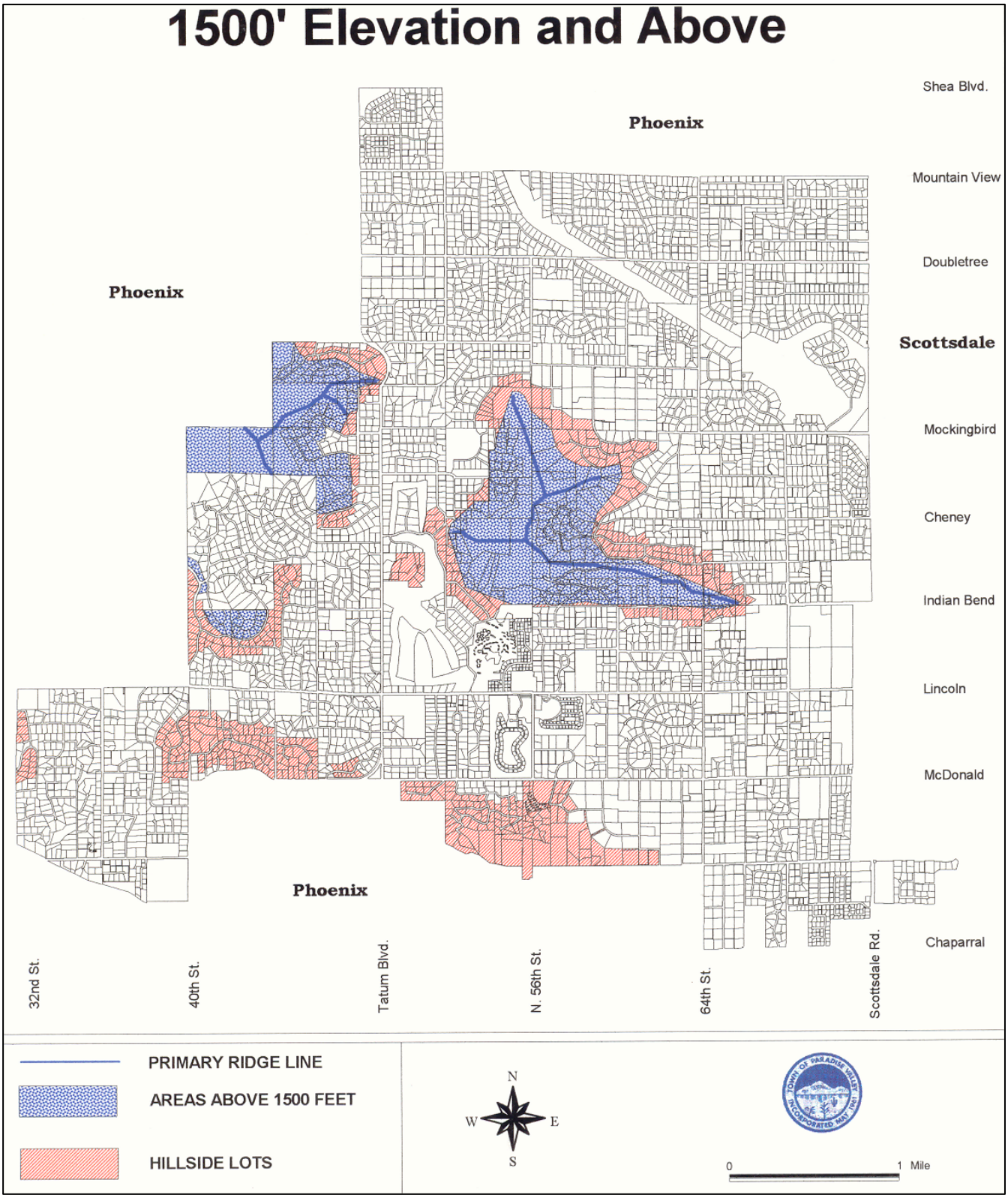


FIGURE 3 – PRIMARY RIDGE LINE DESIGNATION



Section 2203 **HILLSIDE DEFINITIONS.** Where definitions are not defined in this section, the definitions in Article II shall control. For purposes of this Article, the terms contained in the Article shall have the following meanings:

Acre - 43,560 square feet as measured on the horizontal plane.

Alter the Mountain Top Ridge Line –Any Development on the Primary Ridge Line shown on **FIGURE 3** that disturbs or alters the natural mountain top profile.

Applicant – The person or entity desiring to improve or otherwise engage in any Development of property in the Hillside Development Area, including the owner of the property and any agents acting on behalf of the owner.

Building Pad – The total area under roof of all structures proposed for the property.

Building Pad Slope - The percent of slope measured at right angles to the natural contours along a line passing through the center of the proposed building and terminating at the ends of the disturbed area limits of the building site.

Building Site - That portion of the lot or parcel, excluding driveways, upon which a building and appurtenances are to be placed or are already existing, including but not limited to; adequate areas for parking, turnaround areas not separated by driveways, sewage disposal, clearance, and proper drainage which conforms to the requirements of the provisions of this Article and the Uniform Building Code.

Code - The Code of Ordinances of the Town of Paradise Valley, Arizona in effect as of the date of these Regulations and as may be amended.

Commission - The Planning and Zoning Commission of the Town of Paradise Valley.

Committee - The Hillside Building Committee of the Town of Paradise Valley.

Conservation - Retention or acquisition of land for the purpose of preservation in a natural state.

Conservation Easement - A permanent open space easement granted to the Town or to a public land trust to prohibit development of property including roads and utilities and to retain and preserve the land for the scenic enjoyment of the general public.

Council - The Town Council of the Town of Paradise Valley.

Cut - The land surface which is shaped through the removal of soil, rock, or other materials.

Development - Any grading, excavation or construction.
Disturbed Area - That area of natural ground excluding the footprint of the residence that has been or is proposed to be altered through grading, cut and fill, removal of natural vegetation, placement of material, trenching, or by any means that causes a change in the undisturbed natural surface of the land or natural vegetation.

Fill - The deposit of soil, rock, or other materials placed by man.

Finished Grade - The final grade and elevation of the ground surface after grading is completed.

Footprint - That area of the residence measured from the outside walls (excluding any overhanging portions) which includes indoor uses such as attached garage, carports, utility room, laundry, etc., but excludes outdoor uses such as patios and breezeways.

Grading - Any excavating, or filling or combination thereof, including the conditions resulting from any excavation or fill.

Hillside Development Area - Those areas marked in **FIGURE 2** and to all lands where the natural terrain under the building pad has a slope of ten percent (10%) or greater, whether shown in FIGURE 2 or not. However, a 10% or greater slope, in an area not denoted on Figure 2, created by a natural wash on land that otherwise would not be classified as hillside land shall be exempt from the hillside regulations.

Hillside Wash – Any creek, stream, wash, arroyo, channel or other body of water having historical banks and with a flow rate equal to or greater than 2 cubic feet per second based on a 100-year storm event.

Lot - A parcel of land occupied or intended for occupancy by one main building, together with any accessory buildings including the open spaces required of the Hillside Regulations and having adequate frontage on a public or private street.

Natural Features, Significant - Include washes, Significant Vegetation, and Significant Rock Outcroppings provided these features are in their undisturbed natural state.

Natural Grade - The undisturbed natural surface of the land, including washes.

Primary Ridge Line - That line running from the highest point along the mountain top downward along a divide to the 1500 foot mean sea level contour line as shown on **FIGURE 3**.

Retaining Wall - A wall or terraced combination of walls, including negative edge pools, used solely to retain more than eighteen inches (18") of material or water but not to support or to provide a foundation or wall for a building.

Raw Spill Slope – An area created by causing or allowing earth or other material to fall, flow or run down the slope, thereby creating a change in the natural appearance and topography.

Rock Outcroppings, Significant - Any surface rock or group formation of rocks covering an area of 200 square feet or larger or any surface rock formation with a height greater than ten feet from the surrounding grade.

Sheet Flow – A shallow and wide overland flow of water.

Subterranean - That space which lies totally underground, and which cannot be seen from outside the exterior perimeter of the structure on the same horizontal plane which originates at that point where the building intersects the ground.

Town - The Town of Paradise Valley.

Vegetation, Significant - A single tree or cactus having a height greater than 15 feet or three or more trees or cacti, located within a radius of 15 feet, each having a height greater than 12 feet.

View Fencing (View Fence) – Fencing that is constructed in such a manner as to achieve 80% overall openness.

Section 2204 HILLSIDE BUILDING COMMITTEE.

A. The Hillside Building Committee as established in Chapter 2 of the Town Code shall review all new applications submitted to the Town for new home Development and related construction within a Hillside Development Area. No building permit shall be issued for such application until approved by the Committee and then such issuance shall only be in accordance with the plans and specifications approved by the Committee.

B. The Hillside Building Committee may review applications for additions to existing structures in accordance with Section 2207 (VII)(A) of this Ordinance.

C. The Hillside Building Committee may review applications for accessory construction (e.g. fences, retaining walls, pools etc.) if the Town Engineer in consultation with a member of the Hillside Committee determines that the proposed construction: (i) creates a significant visual impact; or (ii) proposes an additional disturbance area.

D. The Hillside Building Committee approval process is a two stages process:

1. A Conceptual Plan Review Meeting.
2. A Formal Hillside Building Committee Meeting.

Section 2205 REVIEW AND DEVELOPMENT PROCESS. The Hillside Building Committee shall review Development plans, as outlined in Section 2204, prior to the Community Development Department review and the issuance of a building, grading or other Development permit. The review and development process consists of up to four stages, depending upon the nature and scope of the proposed Development:

I. Concept Plan Review Meeting: The Applicant, along with their architect and engineer shall submit a completed application and the required fees, to the Town Engineer, at the time they request a concept plan review meeting (pre-hillside meeting) with the Hillside Building Committee. The purpose of this meeting is to discuss, review, and give suggestions and guidance to the Applicant regarding the proposed development including: the location of the building pad and accessory uses; how these relate to Significant Natural Features; the preservation of existing vegetation; grading concepts and their adaptation to the natural hillside topography; and how the requirements

pursuant to these hillside regulations and purpose statement will guide the proposed Development.

II. Formal Hillside Committee Review Meeting: At this stage, in addition to those materials previously submitted, the Applicant shall submit all materials outlined in Section 2206 (II) to the Town Engineer. The Hillside Building Committee shall then review the submittal for compliance with the goals, purposes, and specific criteria of this ordinance and either approve, approve with stipulations or changes, or deny the submittal.

III. Building Permit Review: The final construction plans submitted to the Town Community Development Department for review and approval shall comply with the final approval of the Hillside Building Committee. Any variation from Chapter 70 of the Uniform Building Code must be accompanied by a soils engineering report from a testing laboratory or geological engineer approved by the Town Engineer. No site preparation or construction shall commence until the Town has issued a grading or building permit.

A. The plans for any Development in the Hillside Development Area, must be approved by the Town and appropriate legal permit(s) issued before any clearing and grubbing, grading, bulldozing, blasting, or movement of earth is commenced. If Development does not commence within twelve months after securing such approval from the Hillside Building Committee, no construction shall occur until such plans have been resubmitted and re-approved or if such is appropriate based upon circumstances outside the control of the Applicant, a one-time six (6) month extension may be granted by the Town Engineer.

B. When a grading permit is required under provisions of these Regulations, the Applicant shall first provide the Town with a form of financial assurance, acceptable to the Town Attorney, which places the Town in an assured position to do or to contract to be done the necessary work to cover, restore and landscape exposed fills and cuts to blend with the surrounding natural terrain. The minimum acceptable assurance shall be in a dollar amount equal to the number of total cubic yards of cut and fill multiplied by 25, or in such greater amount as deemed appropriate by the Town. In the event that construction has not commenced within six months from the date of issuance of the grading or building permit, the plan approval and permit shall expire. Twelve months after the date of the last inspection, such assurance shall be forfeited to the Town in such amount necessary for the purpose of restoration of the construction site to its original condition and all authorized permits shall be revoked and become void.

IV. Issuance of Certificate of Occupancy: Prior to the issuance of any Certificate of Occupancy for any building constructed pursuant to these Regulations, the applicant shall obtain from the Town Engineer and the Town Building Inspector certification of compliance with this Article.

Section 2206 DOCUMENTARY REQUIREMENTS AND CERTIFICATION [558 580]

I. CONCEPT PLAN REVIEW MEETING. The applicant shall submit the following:

A. Notification Letters. At least three (3) weeks prior to the scheduled conceptual Hillside Building Committee meeting the applicant shall submit to the Town a neighbor notification letter complete with address labels, with appropriate postage, for all property owners within 500 feet of the perimeter of the subject property. This notification letter shall include the following information; a) type of proposed development (addition, remodel, new construction), b) the scheduled hearing date and time, c) that the letter is only as a courtesy notification and that their attendance at the meeting is not required. d) the purpose of the meeting, and e) the goals of the meeting.

B. Seven (7) copies of a preliminary site plan that includes, but is not limited to, the building footprint, driveway, swimming pool, and accessory use locations along with topographic information for the Lot.

C. A 3-dimensional representation of the general massing of all proposed structures (e.g. a mass model, a 3-D rendering or a computer generated model in relation to topography – not a detail model).

D. A recent aerial photo of the site (less than 3 years old), with topography, lot lines, and the building footprint superimposed on it, and identification of significant natural features as well as adjacent lots and structures within 100 feet of the perimeter of the subject property (minimum 24”X 36”).

E. Preliminary calculations on land disturbance and cut and fill methods.

II. FORMAL HILLSIDE COMMITTEE REVIEW MEETING. All plans submitted to the Town for review shall be stamped and sealed by the appropriate registered or licensed professional (e.g. civil engineer, land surveyor, geologist, architect). All plans shall be reviewed by the Hillside Building Committee. In addition, once the plans have been approved by the Committee the applicant shall submit final plans, in accordance with the Hillside Building Committee’s approved plans, to the Community Development Department for building permits. Plan review fees for each such submittal shall be paid at the time of the submittal of such plans in the amount specified in the Town of Paradise Valley fee schedule, as such may be amended from time to time. The following plans and material shall be required:

A. Notification Letters. At least three (3) weeks prior to the scheduled Formal Hillside Building Committee Meeting the applicant shall submit to the Town a neighbor notification letter complete with address labels, with appropriate postage, for all property owners within 500 feet of the perimeter of the subject property. This notification letter shall include the following information; a) type of proposed development (addition, remodel, new construction), b) the scheduled hearing date and time, c) that the letter is only as a courtesy notification and that

their attendance at the meeting is not required, d) the purpose of the meeting, and e) the goals of the meeting.

B. Seismic Refraction Survey. All proposed cuts shall require a seismic refraction survey, performed by a registered geologist. If the geological report or seismic refraction survey indicates fractured or unstable rock, then the proposed location of the building site (or appurtenances) shall be changed to a stable location unless the unstable condition(s) can be mitigated by an engineered design that creates a stable location and complies with the provisions of Article XXII and other Articles of this Zoning Ordinance. The geological report and results of the seismic refraction survey shall be submitted to the Town.

C. A detailed site plan (minimum 24" X 36"), sealed by a registered engineer or land surveyor, with topographic information for the entire lot including under the footprint of the building. This site plan shall depict: the limits of disturbance; the building envelope including the building footprint, driveway(s), swimming pools, mechanical equipment, sanitary sewer or septic systems; location, size and type of mechanical screen walls and pool barrier fencing; length and height of retaining walls; all accessory buildings; and significant natural features.

D. Photographs of the site looking out from the property in all directions and of the property from several different views.

F. A detailed grading and drainage plan (minimum 24" X 36"), sealed by a registered engineer, with topographic information for the entire lot. This plan shall show proposed finished contours at 1 foot intervals within a perimeter 20 feet from the building, a maximum 5 foot intervals elsewhere, and shall show existing and proposed contours**.** This plan shall show limits of excavation and fill; slope of cut and fill; total cubic yards of excavation and fill; method of concealment for each fill or exposed cut; and the calculations for amount of disturbance for the total development. This plan shall show original drainage pattern (natural course) and proposed changes. If any structures or culverts are involved, it will be necessary to include an estimate of peak flows for a 100 year frequency storm to establish drainage facility cross-sections. Sheet flow diverted from its original drainage pattern shall be returned to its natural course before leaving the property.

G. A detailed landscape plan that includes, but is not limited to the following: the building envelope; building footprint; all accessory structures and locations; significant natural features; plant materials list with type, quantity and size; plant location; location and species of salvaged plant materials; and methods for revegetation of all disturbed areas. Native desert vegetation shall be identified and preserved to the maximum extent reasonably possible in the landscape plan.

H. Cross sections at a scale equal to or greater than the site plan scale at three or more locations perpendicular to the contours through the building site shall be clearly shown on the topographic map.

I. A detailed outdoor lighting plan indicating the proposed luminaire locations on the building and on the site (if applicable); the type of illuminating devices including; the manufacture's catalog cut sheets and drawings; and photometrics that describe the illuminating devices; the fixtures, lamps, lumens and wattages, supports, the aiming angles, and other devices.

J. A Study Model: Including all proposed improvements, at not less than (1/16) inch = (1) foot showing the relationship of all proposed improvements to the contours of the lot. The model must accurately represent the massing of all structures and roof forms as well as the following:

1. All windows, exterior doors and skylights.

2. The model shall include enough of the property to visually relate the proposed structure and accessory uses to the natural terrain.

3. The Applicant's name, architect's name, builder's name, lot number, scale, and north arrow.

K. An accurate oblique view architectural rendering in color or a computer generated 3-dimensional picture shall be submitted showing the appearance of the building, lot, landscaping, and skyline. The rendering or computer generated picture, and the model may remain in the custody of the Town Engineer until a Certificate of Occupancy is issued or until released by the Town Engineer.

L. Exterior Material Samples: Include samples of all colors, materials, and material specifications mounted on rigid board with all materials identified with the manufacture's name, color, and LRV number where applicable. Material samples or color specifications are required for all exterior materials and finishes including but not limited to:

- Roof
- Metal
- Hardscape
- Stone
- View fencing
- Wall color and texture (8½" x 11" sample size)
- Masonry
- Glass
- Driveway and terrace paving
- Garage doors

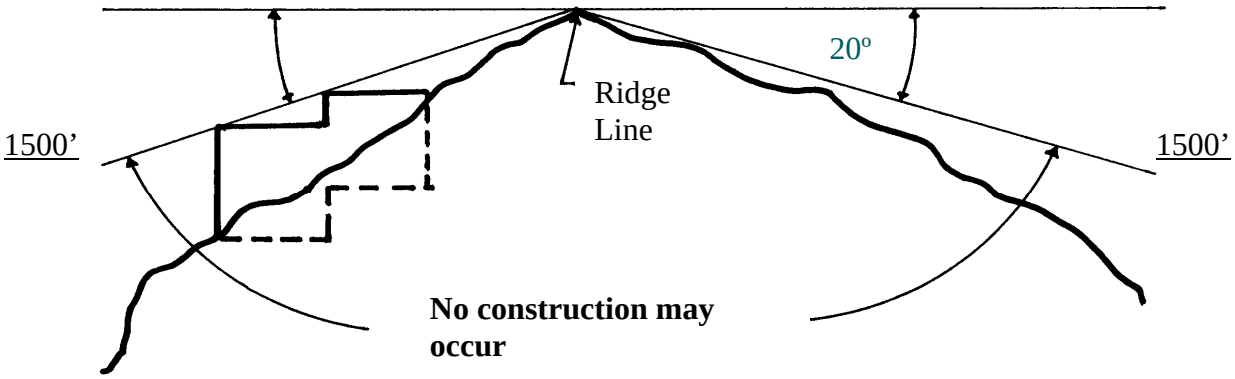
M. The Applicant shall install a marker to designate the location of the house at the major building corners. The markers should be at least 3 feet in height with a colored ribbon at the top of the marker. The applicant shall install markers at least two (2) weeks prior to the Formal Hillside Committee meeting and remove immediately following the formal committee meeting.

Section 2207 DEVELOPMENT STANDARDS [558 654]

I. MOUNTAIN PROFILE INVIOLATE

A. At and above an elevation of 1500 feet mean sea level, no Development shall occur which will Alter the Mountain Top Ridge Lines as shown on **FIGURE 3** . A model must be submitted pursuant to Section 2206(II)(J) showing compliance with this paragraph together with complete plans showing the appearance of the mountain top profile, as part of the submittal for the Formal Hillside Committee Review. Further, no structure may extend above a plane that originates on the primary ridge line and angles downward from the primary ridge line by twenty degrees (See **FIGURE 4).**

FIGURE 4 – RIDGE LINE TWENTY DEGREE DELINEATION



II. ARCHITECTURAL STANDARDS.

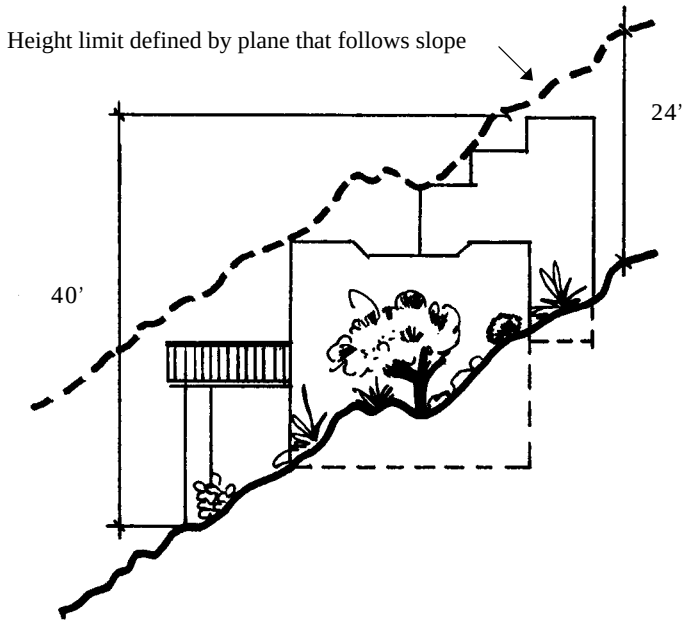
A. For development within the Hillside Development Areas, the height of structures shall be determined by the following four (4) sub-sections and not by the zoning district regulations that apply to lots or parcels outside the Hillside Development Area.

1. The height of a building or structure is limited to a twenty-four (24) foot imaginary plane that parallels the existing pre-development natural grade, as measured vertically from any point under the building (see **FIGURE 5**). The subterranean portion of the structure is not included in the total height calculation provided that at least half (½) of the volume of the subterranean portion of the structure is below natural grade.

2. In the case where the natural grade has been cut and is not restored back against the building, no exposed face in any vertical plane shall exceed a twenty-four (24') foot height measured from the lowest, finished grade.

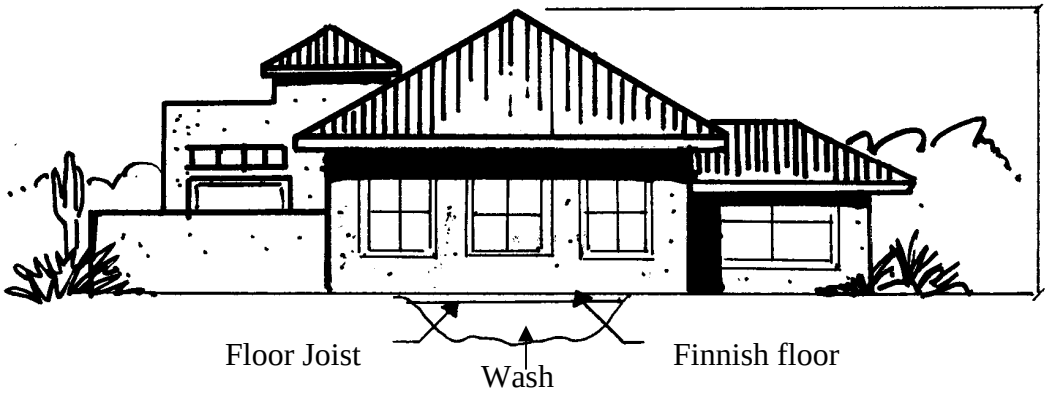
3. The maximum overall height of the building or structure, including chimneys and accessory buildings, shall not exceed forty (40) feet from the highest point of the building to natural grade at the lowest point adjacent to the building structure or column (see **FIGURE 5**).

FIGURE 5 – BUILDING HEIGHT IN HILLSIDE



4. Where a building spans a wash the maximum height of twenty-four (24') feet shall be measured vertically from that point where the visible structure and the side of the wash intersect. See-**FIGURE 6.**

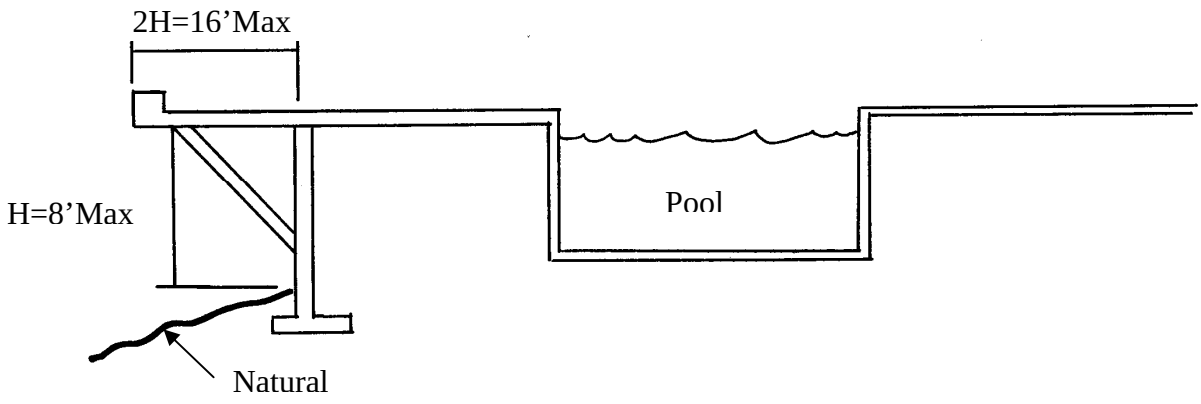
FIGURE 6 – BUILDING HEIGHT WITH A WASH CROSS SECTION



B. Structures employing the use of a cantilever may extend the cantilever a horizontal distance twice the height of the support. The maximum vertical height of the support shall be eight (8) feet. One-half the area underneath the

cantilevered element shall be calculated as disturbed area. (See **FIGURE 7** below).

FIGURE 7 - HEIGHT FOR A CANTILEVERED ELEMENT



C. All of the setback requirements of the underlying zoning district shall apply in the Hillside Development Area (see Article X, Section 1001, Table 1001).

D. Materials used for exterior surfaces such as structures, walls, roofs and fences shall blend with the surrounding natural setting and avoid high contrasts. There shall be no paint or material colors used which have a LRV (Light Reflecting Value) greater than thirty-eight (38) percent. Limited use of contrasting accent colors (in excess of 38% LRV) for small elements such as doors and window mullions may be allowed upon explicit approval of the Hillside Building Committee.

E. All electrical service equipment and subpanels and all mechanical equipment including, but not limited to, air conditioning, evaporative cooling, and antennas greater than 24" in diameter shall not be allowed on the roof. Solar panels may be allowed if they are integrated into the building design and hidden from view when viewed from the same or a lower elevation and approved by the Hillside Building Committee. All mechanical, electrical, and natural gas equipment along with pool equipment and antennas shall be screened in such a manner that they are not visible from outside the property when viewed from the same or a lower elevation.

F. Mirror surfaces or reflective treatment that changes or enhances ordinary glass into a mirror surface is prohibited. Permanently reflective metallic surfaces shall be prohibited.

G. The building design should minimize the reflection of daytime glare from glass and the emission of light from within the structure during evening hours.

H. Shake shingle roofs are prohibited. Existing shake shingle roofs on residential structures may be allowed only until such time that it is determined, during the

course of normal maintenance, that a new roof (re-roof) is necessary and/or the extent of maintenance or repair work requires a building permit from the Town.

III. LAND DISTURBANCE STANDARDS.

A. The limits of construction and proposed disturbed areas shall be clearly staked in the field, with visible roping, prior to and during construction and shall conform to the approved individual site analysis plan. No disturbance shall be permitted beyond the areas designated as the limits of disturbance both during and after construction. If land disturbance in violation of this ordinance occurs, the illegally-disturbed area(s) shall be restored to its natural grade and revegetated with plant material of the same species, size, and at a similar density present prior to the illegal disturbance.

B. All disturbed land that is not otherwise used for approved development shall be restored to the natural grade and revegetated with plant material as listed in the Town of Paradise Valley landscape guidelines or pursuant to a landscape plan approved by the Town.

C. All buildings, structures, roads, and drives shall, to the fullest extent practicable, follow and utilize the natural contours of the land to minimize disturbance. The maximum height of any cut used to establish a building site shall not exceed 30 feet.

D. All surplus excavated material shall be removed from the lot prior to the issuance of the Certificate of Occupancy.

E. After final grading, not more than 5% of the lot shall be steeper than the natural grade of the lot.

F. The total disturbed area shall not exceed the allowed percentage of the lot area as shown in **TABLE 1** below.

G. Grading within street rights-of-way or tracts of land for private roads is exempt from the disturbance calculations. Any roadway grading beyond the limits of the dedicated rights-of-way or private road tracts shall be placed in slope easements and included within the calculations for land disturbance limitations.

H. A legally pre-existing disturbed area may be excluded from disturbed area calculations when the applicant has committed to comply with the following restoration conditions:

1. the restored area shall follow original natural contours.

2. the restoration shall be treated with an aging agent approved by the Town Engineer and planted with indigenous desert material.

3. the restoration process shall be sealed by a landscape architect and/or a registered engineer or architect.

I. The livable portion of the main residence including garage and livable portions of detached accessory buildings shall not be counted as disturbed area provided that all buildings are within the required setbacks and do not exceed the building height limitations as specified in Section 2207 (II) (A) of this Ordinance.

TABLE 1 – Slope Category / Lot Disturbance Limitations

Bldg. Site Slope	% Allowable Land Disturbance	Bldg. Site Slope	% Allowable Land Disturbance	Bldg. Site Slope	% Allowable Land Disturbance
10%	60.0	41%	9.90	72%	6.80
11%	53.66	42%	9.80	73%	6.70
12%	47.94	43%	9.70	74%	6.60
13%	42.81	44%	9.60	75%	6.50
14%	38.21	45%	9.50	76%	6.40
15%	34.11	46%	9.40	77%	6.30
16%	30.48	47%	9.30	78%	6.20
17%	27.27	48%	9.20	79%	6.10
18%	24.46	49%	9.10	80%	6.00
19%	22.01	50%	9.00	81%	5.90
20%	19.88	51%	8.90	82%	5.80
21%	18.04	52%	8.80	83%	5.70
22%	16.48	53%	8.70	84%	5.60
23%	15.16	54%	8.60	85%	5.50
24%	14.05	55%	8.50	86%	5.40
25%	13.13	56%	8.40	87%	5.30
26%	12.37	57%	8.30	88%	5.20
27%	11.76	58%	8.20	89%	5.10
28%	11.28	59%	8.10	90%	5.00
29%	10.90	60%	8.00	91%	4.90
30%	10.62	61%	7.90	92%	4.80
31%	10.41	62%	7.80	93%	4.70
32%	10.25	63%	7.70	94%	4.60
33%	10.15	64%	7.60	95%	4.50
34%	10.08	65%	7.50	96%	4.40
35%	10.04	66%	7.40	97%	4.30
36%	10.02	67%	7.30	98%	4.20
37%	10.01	68%	7.20	99%	4.10
38%	10.00	69%	7.10	100%	4.00
39%	10.00	70%	7.00		
40%	10.00	71%	6.90		

IV. DRIVEWAYS [558]

A. Driveways that serve a new single residence shall be: (1) a minimum of 12 feet wide; (2) surfaced with paving brick, textured integral colored concrete (i.e. stamped or exposed aggregate etc.) or other similar decorative paving materials specifically colored to blend with the existing natural color of the site; (3) designed with an overall grade that does not exceed 30%; (4) constructed in full conformance with the Fire Code; and (5) developed only as specifically approved by the Hillside Building Committee. The driveway shall be included in the calculations for land disturbance limitations at a ratio of 50% of the total disturbed area of the driveway, if the driveway is constructed at a grade plus or minus 6 inches from natural grade. Driveways with cut and fill in excess of 6 inches from natural grade shall be charged with 75% of the total disturbed area of driveway surface.

B. Driveways that serve an existing home undergoing renovation, remodel, or an addition shall be included in the calculations for land disturbance limitations subject to the following conditions:

1. Existing driveways reconstructed with paving bricks, textured integral colored concrete (e.g. stamped or exposed aggregate etc.) or other similar decorative paving materials, specifically colored to blend with the existing natural color of the site, shall be excluded from the land disturbance calculations.

2. Existing driveways surfaced with paving bricks, textured integral colored concrete (e.g. stamped or exposed aggregate) or other similar decorative paving materials, specifically colored to blend with the existing natural color of the site, shall be excluded from the land disturbance calculations.

3. Existing asphalt or uncolored concrete driveways not reconstructed with paving bricks or textured integral colored concrete (e.g. stamped or exposed aggregate etc.) shall be calculated as disturbed area at a ratio of 150% of the total disturbed area of the driveway.

C. The minimum standard turning radius for a driveway is 40 feet; except that a minimum 25 foot radius may be used provided all structures are protected with an approved fire extinguishing system.

D. Any street or driveway cut greater than 8 feet shall not have a length greater than 100 feet.

E. A twenty (20) foot by thirty (30) foot driveway apron may be required by the Fire Marshall or the Building Official at or near the garage, with no more than a 5% grade, to serve as a staging platform to fight a fire.

F. The maximum height, measured vertically, of any cut used to establish a street or driveway shall not exceed 30 feet.

V. GRADING AND DRAINAGE STANDARDS.

A. There shall be no clearing, grubbing, grading, importing or stockpiling of fill material on, or to, any site prior to approval of such Development by the Hillside Building Committee and approval of a grading plan by the Town Engineer, unless such clearing, grubbing, or grading, is required by the Town for public safety purposes.

B. The maximum depth of fill shall not exceed 8 feet except beneath the footprint of the main residence. All exposed disturbed area fill shall be contained behind retaining walls or covered with a natural rock veneer and treated with an aging agent and landscaped with indigenous plant material.

C. Rock veneered spill slopes may be allowed provided that they are approved by the Hillside Building Committee, and:

1. The vertical height of the spill slope does not exceed the vertical height of the exposed cut with the base of the spill slope engineered for stability and keyed into the mountain or supported by a retaining wall.

2. The spill slope does not exceed a one to one slope.

3. Retaining walls used to limit the height of the spill slope are color treated or veneered to blend in with the surrounding natural colors.

D. Raw spill slopes are prohibited. Any violation will be subject to a stop work order until the spill slope is removed, restored to its natural grade, revegetated and approved by the Town.

E. A hillside wash shall not be diverted, relocated or moved from its present position to another location, however, a hillside wash may be bridged by a structure so long as such structure does not impede the flow of the hillside wash.

F. Earth contiguous to the structure shall contact that structure at an angle approximating that of the natural grade.

VI. WALLS AND FENCES. [558]

A. Curbs less than18 inches above finished grade are not considered walls.

B. No more than 300 total linear feet of wall shall be visible from any point on the property line.

C. Walls that are otherwise permissible in Article XXIV are prohibited in the Hillside Development Area. Retaining walls, pool barriers, walls used to screen mechanical equipment, driveway columns and entry gates, and tennis/sport court

fencing are allowed provided that they are of minimum lengths and heights, as further specified below, and are approved by the Hillside Building Committee.

1. Retaining Walls:

   a. The maximum length of any continuous retaining wall shall not be more than 100 linear feet. The maximum height of any retaining wall shall not be more than 8 feet. The height of a retaining wall is measured from the low side of natural grade when retaining fill slopes and from finished grade when retaining cut slopes to the top of the wall; whether the top is retaining earth or not.

   b. Retaining walls shall be used for the purpose of containing fill material or for minimizing cut or fill slopes. The retaining wall may only extend six (6) inches above the material it is retaining.

   c. A terraced combination of retaining walls shall be measured as a single retaining wall provided the combined walls are: 1) no more than eight (8) feet total vertical height; 2) terraced with a minimum distance between of four (4) feet and a maximum separation of eight (8) feet; and 3) contain appropriate vegetation between the walls so as to soften the visual impact of the combined walls (see **FIGURE 8**).

   d. When a safety fence, on top of a retaining wall, is required by code it shall be a view fence and shall be painted to blend with surrounding natural colors.

   e. Where retaining walls are provided they shall be color treated, textured, or veneered to blend in with the surrounding natural colors and textures of the native rock and soils at the site.

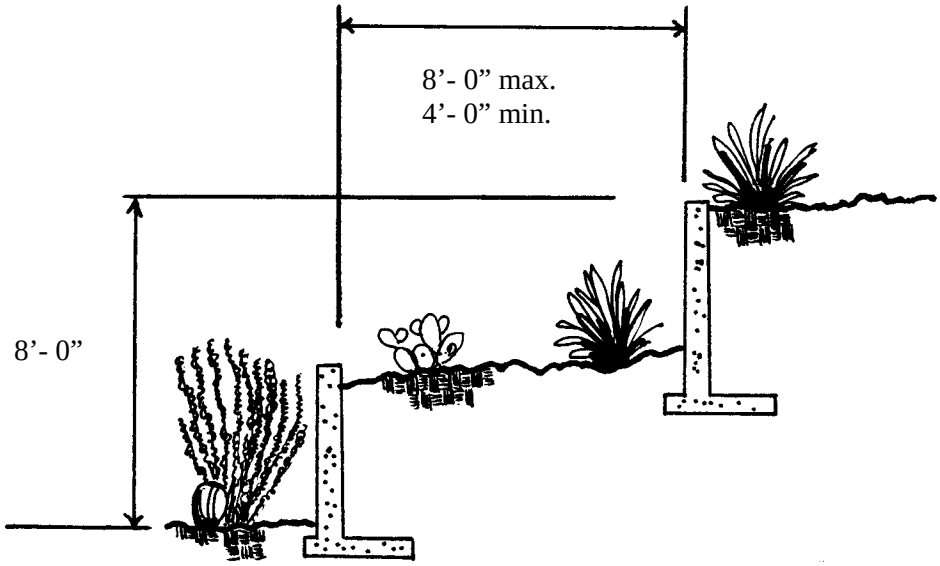
2. Pool Barriers: Shall be view fencing. Open view fencing is not calculated in the 300 feet maximum allowable wall.

3. Screen Walls: These walls may be solid walls provided they are of minimum height and length needed to screen the mechanical equipment or windows of interior bathroom areas, and shall not exceed six (6) feet in height. Screen walls over 6 feet in height may be allowed, at the discretion of the Hillside Building Committee, to properly screen the mechanical equipment or windows of interior bathroom areas; provided, 1) such walls meet the allowable setbacks and height of an accessory structure, and 2) screening area surrounded by screen walls is calculated as part of the allowable floor area.

4. Tennis/Sport Courts: Fences surrounding a tennis court or sport court shall be: (i) no greater than 10 feet in height as measured from the playing surface, (ii) set within the disturbable area of the Lot, and (iii) colored to blend in with the surrounding area.

5. Driveway Columns and Entry Gates may be located ten (10) feet or more from the property line. The columns and gate are limited to six (6) feet in height and the columns may be a maximum size of two (2) feet by two (2) feet. Electrically controlled gates must be equipped with an approved key switch located as far as possible from the right-of-way.

FIGURE 8 –TERRACED VERTICAL RETAINING WALLS



VII. ACCESSORY STRUCTURES AND ADDITIONS TO EXISTING STRUCTURES.[558]

A. The Hillside Building Committee may review applications for the proposed accessory structures and additions to existing structures if the Town Engineer in consultation with a member of the Hillside Building Committee determines that the proposed accessory structures or addition: (i) exceeds or increases the building height of the main residence; (ii) increases the existing building footprint by more than 1,000 square feet or more than 50% of the original building square footage; (iii) creates an additional disturbance area; (iv) increases site walls; (v) proposes a significant addition of exterior lighting; or (vi) creates a significant adverse visual impact.

B. The Hillside Building Committee may combine the Concept Plan Review Meeting and the Formal Hillside Committee Review Meeting for applications conforming with the criteria set forth in Subsection VII (A).

C. If no new disturbed area is required and the proposed accessory structure or addition meets all other hillside requirements including allowable disturbed area, a permit for an accessory structure, or an addition to hillside building may be obtained without requirements for, disturbed area calculations or any other specific requirements as designated by the Town Engineer.

D. Any proposed accessory structure or improvements to existing hillside structures which require additional disturbed area shall be accompanied by calculations of prior disturbed area to determine if the entire site is within the allowed limits for hillside construction. When the disturbed area equals that allowed, no further construction involving additional disturbed area will be permitted.

E. Accessory buildings and structures shall not occupy more than one-half of the total ground area of the main building. No accessory building or structure shall exceed the height specified in Table 1001B or elsewhere in this ordinance.

VIII. SEWERS AND UTILITIES.

A. Grading for septic systems, evapotranspiration systems, and alternative systems shall be included in the calculations for land disturbance limitations unless:

1. The disturbed area is brought back to original natural grade contours, treated with an approved aging agent and planted to blend with surrounding natural growth,

2. Special landscape plans for evapotranspiration systems shall be submitted to the Town Engineer. Plans shall show the appropriate vegetation and supplemental irrigation systems approved by the Town Engineer.

B. Grading for utility lines, including water and sewer lines and lateral lines, electric, gas, telephone and cable services, shall be included within the calculations for land disturbance limitations unless:

1. Trenches are placed under a driveway, under paving or in other areas already counted as disturbed, or

2. Trenches and related disturbed areas are restored to appear as original ground, color treated and planted to blend with surrounding natural growth.

IX. FIRE PROTECTION.

A. Washes must be maintained as easements as described in Section 8-7 of the Town Code and other applicable codes to minimize the risk and spread of fire.

B. Grasses known to be highly flammable, such as fountain grass, *Pennisetum setaceum*, and buffel grass, *Pennisetum ciliare* are not allowed in a Hillside Development Area.

Section 2208 OUTDOOR LIGHTING [558]

A. Purpose: The intent of these lighting requirements is to preserve the low light level conditions that are inherently characteristic of the desert. The objective is to allow only the quantity and level of lighting necessary for safety, security and the enjoyment of outdoor living while protecting against direct glare and excessive lighting; protecting the ability to view the night sky; and preventing light trespass.

B. Definitions: For the purposes of this section, exterior lighting is defined and regulated by the following definitions and categories:

1. Footcandle (fc) - A unit of illuminance of equal to 1 lm/ft² (lumen / sq. ft.) or 10.76 lx (lux).

2. Fully Shielded (Full Cut-Off) - A fixture shielded with an opaque material so that light rays emitted by the fixture are projected only below a horizontal plane running through the lowest point on the fixture where light is emitted.

3. Lumens – The Standard International (SI) unit of luminous flux.

4. Luminaire (Light Fixture) - A complete lighting unit consisting of a lamp or lamps and ballast(s) (when applicable) together with the parts designed to distribute the light, position and protect the lamps, to connect the lamps to the power supply.

5. Opaque - Impervious to the passage of light.

6. Partially Shielded (Partial Cut-Off) - A fixture that allows light rays to be emitted up and down and shielded with an opaque material in such a manner to prevent the bulb from being seen.

7. Safety Lighting - Low-level lighting used to illuminate vehicular and pedestrian circulation.

8. Security Lighting - Lighting that is fully shielded that is intended to provide bright illumination during emergency situations only.

9. Spill Light - The amount of light that illuminates beyond the range or primary area that the fixture is intended to light.

10. Translucent – A material through which light can pass but the light source cannot be seen.

11. Trespass Lighting - Spill light that encroaches onto neighboring properties.

12. Visual Enjoyment Lighting - Lighting intended to illuminate outdoor living areas.

C. Design Standards:

1. All building mounted light fixtures shall be fully shielded. Recessed lights in exterior soffits, eaves, or ceilings shall have a 45°cutoff. At the main entry of the primary structure, a maximum of two (2) translucent fixtures may be permitted as long as the total lumens, per fixture, do not exceed a

maximum of 750 lumens. All other entrances, excluding garage doors, shall be limited to no more than one (1) fixture.

2. All fixtures, unless otherwise allowed, shall be directed downward and properly aimed on the targeted areas to maximize their effectiveness and minimize the total number of lighting fixtures.

3. Building mounted lighting must be directed downward away from adjacent lots, streets, undisturbed areas, and open spaces, and may not be used to light walls or building elements for decorative purposes.

4. There shall be no lighting permitted in areas identified as “undisturbed areas” of the property pursuant to the plans submitted under Section 2207 III.A.

5. The maximum lighting intensity shall not exceed 0.25 footcandle when measured at the property line.

6. A repetitive line up of lights along driveways or walkways accessing public streets shall not be allowed. Some random lighting of driveways or walkways accessing public streets may be allowed by the Hillside Building Committee. Driveway lights must be located on the "downhill" side and aimed toward the "uphill" side, must be fully shielded from below and only light the driveway surface. Driveway and walkway lights shall not exceed a maximum of 0.25fc at any point beyond 10 feet from the fixture.

7. Each lighting or illuminating device shall be set back from the nearest property line a minimum of ten (10) feet or a distance equal to or greater than the height of the device above natural or excavated grade, whichever is greater. As an exception a lighted entry marker may be placed on each side of the driveway entrance. The entry marker shall not be placed within the Town right-of-way or private road areas and the total height of the marker and light shall not exceed four (4) feet above finished grade adjacent to the driveway. The light source shall not exceed the equivalent projected brightness of 250 lumens.

D. <u>Luminaire (Light Fixture)</u> All luminaires shall be subject to the following limitations:

1. Shall not exceed 750 lumens when attached to a structure and confined to the immediate vicinity of a building entrance or outdoor living area of the residence.

2. Shall not exceed 250 lumens for all other uses.

3. Shall not exceed 150 lumens for landscape up-lighting.
4. Motion sensor/detector light fixtures are permitted for security lighting. Security lighting must be controlled separately from all other lighting.

Security lights must be on timers that regulate their operation time to a maximum of 10 minutes and limited to lamps with a maximum of 750 lumens.

5. Rope lighting shall not exceed 3.6 watts per lineal foot for an incandescent rope light.

E. Mounting Exterior fixtures shall be mounted:

1. In the ground or on a post not to exceed 36 inches above the ground. When exterior fixtures are affixed to existing trees, the height of the fixture shall not exceed 8 feet above the finished grade.

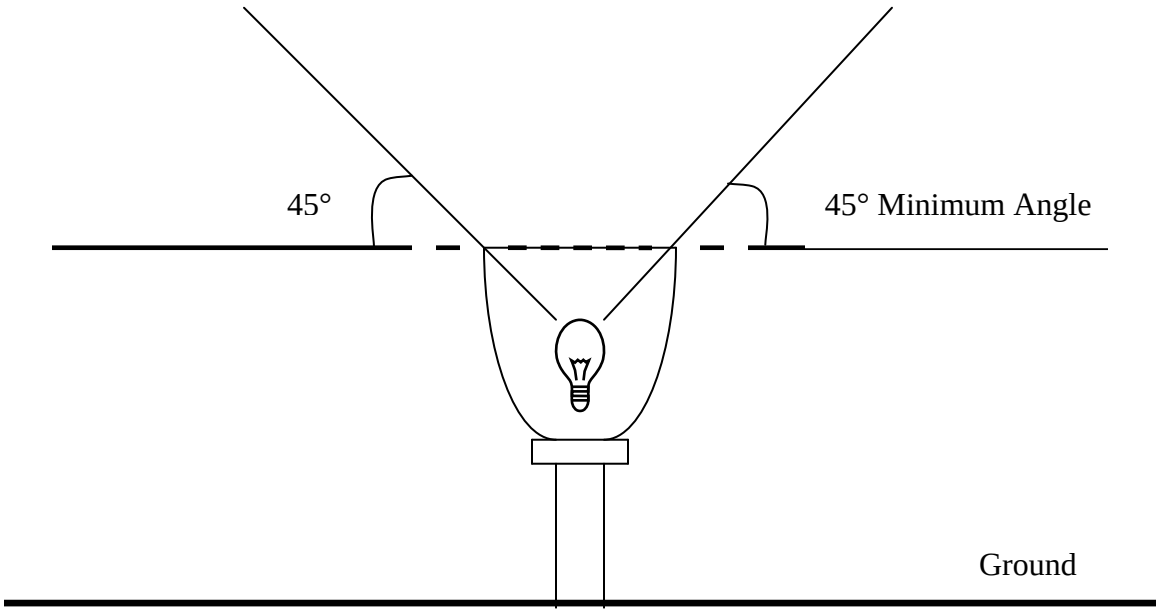
2. In or on a building wall not to exceed 8 feet above finished grade and shielded in such a manner as to avoid creating concentrated light (hot spots) on the structures to which they are mounted. Security lighting may be mounted on the structure to a height of not more than twelve (12) feet.

F. Landscape Up-lighting:

1. The number of fixtures is limited to one fixture per 1000 square feet of allowable disturbed area.

2. The lamp must be recessed to provide a minimum 45° cut-off from the vertical plane.

FIGURE 9 - TYPICAL UPLIGHT WITH 45° CUT-OFF



G. Prohibitions In addition to the limitations noted above, the following lights or lighting effects are strictly prohibited:

1. Colored lamps or bulbs and string and unshielded rope lights; except that temporary holiday lighting shall be permitted between November 15th and January 15th.

2. Tennis court and sport court lighting.

3. Any temporary lighting that violates the provisions of this lighting section.

4. Exterior lights, except security lighting, that illuminate the adjoining mountainside such that the mountainside is visible from off the property between sunset and sunrise.

H. Amendments:

1. Should the applicant desire to substitute outdoor light fixtures or lamps after a permit has been issued, the applicant must submit all changes to the Town Engineer for approval, with adequate information to assure compliance with this ordinance.

Section 2209. DENSITY and SUBDIVISIONS / LOT SPLIT STANDARDS

A. The maximum number of lots into which Hillside Development Area land may be subdivided shall be the sum of the number of lots allowed in each slope category of land as shown by the following **TABLE 2 – Density/Slope Category**.

B. Slope shall be calculated using a minimum of 3 slope lines per acre. The slope lines shall be perpendicular to the slope and at equal distances across the lot.

C. Each of the resulting lots shall meet the minimum lot size requirements based upon the average lot slope shown on **TABLE 2.**

D. Building envelopes shall be conceptually indicated on preliminary plats and accurately shown on final plats.

E. The subdivider shall demonstrate by sketches, engineering drawings, charts or other means that roads, public or private, and driveway access and placement of residential structure will conform, for each lot, to current hillside development regulations and without the need for a variance.

F. All subdivision development and lot split applications shall comply with the Hillside Development Requirements as outlined in the Town of Paradise Valley Subdivision Ordinance and Article XXII of this Ordinance.

TABLE 2 – Density / Slope Category

Average Lot Slope %	Min. Lot Size Acres	Min. Lot Size –Sq. Ft.	Average Lot Slope %	Min. Lot Size Acres	Min. Lot Size – Sq. Ft.
10%	1	43,560	41%	6.8	296,208
11%	1.01	43,996	42%	7.6	331,056
12%	1.02	44,431	43%	8.4	365,904
13%	1.04	45,302	44%	9.2	400,752
14%	1.06	46,174	45%	10	435,600
15%	1.08	47,045	46%	11	479,160
16%	1.1	47,916	47%	12	522,720
17%	1.2	52,272	48%	13	566,280
18%	1.3	56,628	49%	14	609,840
19%	1.4	60,984	50%	15	653,400
20%	1.55	67,518	51%	16	696,960
21%	1.6	69,696	52%	17	740,520
22%	1.7	74,052	53%	18	784,080
23%	1.8	78,408	54%	19	827,640
24%	1.9	82,764	55%	20	871,200
25%	2	87,120	56%	21	914,760
26%	2.2	95,832	57%	22	958,320
27%	2.4	104,544	58%	23	1,001,880
28%	2.6	113,256	59%	24	1,045,440
29%	2.8	121,968	60%	25	1,089,000
30%	3	130,680	61%	26	1,132,560
31%	3.2	139,392	62%	27	1,176,120
32%	3.4	148,104	63%	28	1,219,680
33%	3.6	156,816	64%	29	1,263,240
34%	3.8	165,528	65%	30	1,306,800
35%	4	174,240	66%	32	1,393,920
36%	4.4	191,664	67%	34	1,481,040
37%	4.8	209,088	68%	36	1,568,160
38%	5.2	226,512	69%	38	1,655,280
39%	5.6	243,936	70%	40	1,742,400
40%	6	261,360			

FOOTNOTE:

110 Ordinance # 220 – 7/12/84
112 Ordinance #221 – 9/24/84
181 Ordinance # 305 – 11/9/89
193 Ordinance # 320 – 2/28/91
194 Ordinance # 321 – 2/28/91
206 Ordinance # 338 – 3/26/92
382 Ordinance # 382 – 12/01/94
409 Ordinance #409 - 7/13/95
425 Ordinance # 425 – 9/12/96
533 Ordinance # 533 – 10/09/03
558 Ordinance # 558 – 06/09/05
580 Ordinance # 580 – 10/26/2006
654 Ordinance #654 – 03/13/2014

Article XXIII. NONCONFORMANCE [179 379 493 564]

Section 2301. Definitions.

For the purposes of this article, the following definitions shall apply:

A. "Legal Nonconformity" means any use, structure, sign, or lot of record which, when it was created, lawfully existed under then applicable local zoning ordinances, but which was subsequently rendered nonconforming due to as a result of modification of the applicable zoning ordinance or other circumstances that were not self-created.

B. "Nonconforming Use" means an activity involving land, structures, or signs for purposes which were legally established under the terms of the zoning ordinance existing at the time of such establishment**,** but which is not now permitted as a use in the zoning district in which it is located.

C. "Nonconforming Structure" means a structure legally erected under the terms of the zoning ordinance existing at the time such structure was erected which does not now fully comply with present dimension standards such as, but not limited to, height and setbacks (includes walls).

D. "Nonconforming Sign" means a sign legally established under the terms of the zoning ordinance existing at the time of such establishment, but which is not now in full compliance with the provisions of the Zoning Ordinance.

E. "Nonconforming Lot of Record" or "Nonconforming Lot" means any validly recorded lot which at the time it was recorded fully complied with the then applicable laws and ordinances, but which does not fully comply with the lot requirements of the Paradise Valley Town code relating to minimum lot area, lot width, or access.

Section 2302. Nonconforming Uses; Continuing Nonconformity; and Abandonment.

A Nonconforming Use may be continued only in its current form, provided that:

A. No building or lot in or on which a Nonconforming Use is abandoned for a continuous period of twelve (12) months, or is superceded by a conforming use shall again be devoted to any prohibited use.

B. No structural alterations that would expand the square footage, height, setbacks, or footprint of the original buildings or structures shall be allowed.

C. No Nonconforming Use shall be extended, added to or enlarged.

D. A Nonconforming Use shall be deemed "abandoned" when such use is suspended as evidenced by the cessation of activities or conditions which constitute the nonconforming status of the use.

Section 2303. Abatement

If the Town Building official determines that a nonconformity is a danger to the public health, safety or welfare, such nonconformity shall be abated in accordance with the terms of Article 8-5 of the Town Code.

Section 2304. Maintenance

Any Nonconforming Structure or Nonconforming Sign may be maintained. Maintenance means the normal upkeep and minor repairs, made necessary by wear and tear or deterioration provided the cost thereof in any 36 month period does not exceed 30 percent of the current full cash value of the structure, as established by the records of the Maricopa County Assessor, or in the case of a sign, as established by the Town.

Section 2305 Use of Nonconforming Lot and Merger Limitation**.**

A. Use: A Nonconforming Lot of Record may be used for any principal use permitted in the zone in which it is located, provided that any new structure proposed to be built upon each lot shall conform in all other respects to the terms of this Zoning Code.
B. Merger: A Nonconforming lot may be merged with a contiguous lot. Upon the merger of two or more nonconforming lots into one lot, the nonconforming lots shall be deemed abandoned and all subsequent use of the new lot shall conform in all respects to the provision of the Zoning Code.
C. Adjustments: Lot line adjustments to two adjoining Nonconforming Lots may be made provided the square footage of both adjusted lots remains approximately the same and no additional nonconformity is created.

Section 2306 Change in Use:

A Nonconforming Use may be changed to another Nonconforming Use only if the Board of Adjustment determines that the new use is not a more intense use. The factors to be considered by the Board of Adjustment shall include, but not be limited to:

1. increased traffic
2. increased parking
3. more on-site employees
4. change in hours of operation
5. increased noise
6. greater light
7. increased dust
8. increased building size
9. larger vehicles on the site.

Section 2307 Structural Alterations or Additions to Nonconforming Structures

Structural alternations, refurbishing, or remodeling of existing Nonconforming Structures shall not result in an increase in any existing encroachment over current setbacks or result in an increase in the height of the reconstructed, refurbished, or remodeled structure over the actual height of the nonconforming portion of the existing structure or result in an increase in any other nonconforming aspect. Permissible alterations or additions to Nonconforming Structures shall vary based upon whether the alteration or addition is for a structural demolition or a new addition, as provided for below:

A. Structural Demolitions: When permits are approved for structural remodels, alterations, or repairs (excluding such nonstructural cosmetic items as painting, flooring, cabinets, or appliances), covered by a single or multiple building permits issued within a thirty ix (36) month period that together covers work which exceeds fifty (50) percent of the original square footage of an existing Nonconforming Structure, such Nonconforming Structure shall be made to conform to the requirements for new structures. For the purposes of this section, the term “Square Footage” means the aggregate of the area of all floors in a structure, whether at or above established grade, measured between the exterior faces of the exterior walls of the structure.

B. New additions: All new additions to the existing Nonconforming Structure shall be in compliance with all current Zoning Code provisions.

Section 2308 Pools and Spas

Nothing herein shall prohibit the addition or remodeling of a pool or spa adjacent to a Nonconforming Structure.

Section 2309. Reconstruction of Nonconforming Structure Due to Damage by Natural Causes.

Any Nonconforming Structure damaged by natural occurrences, such as, but not limited to, fire, flood, wind, and lightning, may be reconstructed and used as before with the following limitations and conditions:

A. Permits to reconstruct or demolish the Nonconforming Structure must be secured from the Town within twelve (12) months of the occurrence.

B. The reconstruction of the Nonconforming Structure shall be permitted provided that the rebuilt structure shall have the same setbacks, height, footprint, and square footage as existed at the time of the natural occurrence. Should changes or additions be proposed for the portion of the Nonconforming Structure

to be rebuilt, then the entire portion to be rebuilt shall conform to the current code.

Section 2310 Removal:

Any Nonconforming Structure or Nonconforming Sign which is damaged or destroyed and which cannot meet the terms of Section 2309 shall be removed from the lot within 90 days of the occurrence.

Section 2311 Nonconforming Signs

A. A Nonconforming Sign shall not be changed, expanded, or altered in any manner which would increase the degree of its nonconformity, or be structurally or aesthetically altered, or moved in whole or in part to any other location where it would remain nonconforming. With respect to a Nonconforming Sign on a property containing a Nonconforming Use, a change in the name of the entity owning or operating the Nonconforming Use shall be permitted so long as all other restrictions within this section are met.

B. Any Nonconforming Sign, the use of which as a sign is discontinued for a period of ninety (90) consecutive days, regardless of any intent to resume or not to abandon such use, shall be presumed to be abandoned and shall not be reestablished except in full compliance with the Paradise Valley Zoning Ordinance. A nonconforming sign that remains for a period of ninety (90) consecutive days without copy, or that no longer advertises a current use of the property on which it is located, shall be deemed discontinued and abandoned as noted above.

C. Any period of discontinuance caused by government actions, strikes, fire, flood, wind, explosion, or other calamity or act of God, without any contributing fault by the nonconforming user shall not be considered in calculating the length of discontinuance for the purposes of this subsection.

D. No sign which is an accessory to a Nonconforming Use shall continue after such principal use shall have ceased or terminated, unless such sign shall thereafter conform to all requirements of the Zoning Code.

Section 2312. Limitation

Nothing in this article shall be construed as authorization for an approval of the continuance of a nonconformity, which was in violation of the zoning ordinance in effect at the time the property, became subject to the provisions of the Paradise Valley Zoning Ordinance.

Section 2313 Variance Requests

Nothing contained herein shall prohibit the owner of a Nonconforming Use or Structure from applying to the Board of Adjustment for a variance where the strict application of the terms of this Article would cause an undue hardship.

FOOTNOTES

179 Ordinance #303 – 9/28/89
379 Ordinance #379 – 10/13/94
493 Ordinance #493 – 9/13/2001
564 Ordinance #564 – 11/03/2005

Article XXIV. WALLS AND FENCES [121 133 135 171 306 325 Repealed and Replaced by 534 559 654]

Section 2401. Intent:

The Town of Paradise Valley encourages visual openness and the preservation of the natural environment. Walls and fences are inconsistent with this intent, but may be desired by residents for safety, noise abatement, and/or security. When walls and fences are necessary, the Town requires that such walls and fences meet the criteria set forth in this Article.

Section 2402. Definitions:

Wall - A wall or fence (including gates) is a freestanding, upright structure, other than plant material, constructed of barriers to enclose, divide, delineate, screen, retain water or earth, or protect an area. The term wall shall include all fences, except a view fence as defined below.

View Fence – A view fence (including gates) is a free-standing, upright structure, constructed with openings between the materials used for construction of the fence, where the openings represent at least 80 percent of the total fence surface area.

Meandering Wall – A meandering wall is a free-standing, upright structure providing significant variations in setback. Meandering walls may consist of curvilinear, square, rectangular, triangular, or freeform design patterns and shall meet the criteria set forth in Tables 2404 A and B in addition to other criteria specified in this article.

Section 2403. Wall Finishes: [654]

Any wall visible from adjoining properties, adjacent rights-of-way, and/or open space areas shall consist of finished materials such as stucco, brick, stone, metal, rails, wood, or tile.

a. Walls Adjacent to Rights-of-Way and Open Spaces.

When such wall is adjacent to or visible from a right-of-way and/or open space area, it shall complement the architectural character of the main house, and shall have a finish texture, color, and material on the exterior side that is compatible with the primary building on-site, or as determined by the Town. The minimum standard for a wall finish shall be stucco and paint.

b. Walls Adjacent to Adjoining Properties.

When such wall is adjacent to an adjoining property, the wall shall be finished on the exterior side, compatible with the architectural character of the neighboring house. The minimum standard for a wall finish shall be stucco and paint.

EXCEPTIONS:

1. The side of the wall facing the adjoining property may be finished with such materials and colors as agreed upon by the property owner and adjoining property owner.

2. If the owner of adjoining property grants no reasonable access to the applicant to finish the side of the wall facing the adjoining property, the applicant will be relieved of any obligation to improve that side of the property wall.

Section 2404. Height and Setback Regulations: 135 171 559 654

a. Height Regulations

1. In General.

The height of walls and view fences shall be measured vertically from the finished grade on the exterior side of the wall or view fence. Raising the finished grade by placing fill solely for the purpose of adding additional height to a wall or view fence is prohibited. If a wall or view fence is placed on a berm, the height shall be measured vertically from the base of the berm.

2. Adjoining Local, Collector, and Minor Arterial Streets.

The maximum height of a wall and view fence, including the berm, adjoining a local, collector, and minor street shall not exceed six (6) feet, further provided that no portion of the wall or view fence located between the ten- (10) foot and forty- (40) foot front yard setback shall exceed three (3) feet, except for entry gates and columns as permitted under Section 2413. See Table 2404A for additional criteria.

3. Adjoining Major Arterial Streets.

The maximum height of a wall and view fence, including the berm, adjoining a major arterial street shall not exceed eight (8) feet. The maximum exposed vertical wall or view fence element from the exterior side of the property shall be no more than six (6) feet, except for a single entry gate and columns as permitted under Section 2413. See Table 2404A for additional criteria.

4. Adjoining Non-Residential Properties Other Than Along A Right-Of-Way

The maximum height of a wall and view fence, including the berm, between a residential property and an adjoining non-residential property, other than a right-of-way, shall not exceed eight (8) feet. When such a wall is adjoining or visible from a right-of-way and/or open space area, it shall complement the architectural character of the main house, and shall have a finish texture, color, and material on both sides compatible with the primary building on-site, or as determined by the town. See Table 2404A for additional criteria.

b. Setbacks Regulations

1. In General.

Setbacks for a wall or view fence will vary depending on whether it is a) adjoining a right-of-way or other property; b) adjoining a major arterial or other street classification; c) located in the front yard or other sides of the lot; d) considered a wall or a view fence; or e) meandering and based on the amount of meander utilized in the wall's construction. Walls or view fences not adjoining a public or private right-of-way may be built at or on the property lines with no setback requirement. See Table 2404A and B for additional criteria.

2. Adjoining Local, Collector, and Minor Arterial Streets.

Walls or view fences located in the front yard of a lot adjoining local, collector, or minor arterial streets that exceed three (3) feet in height shall be setback at least forty (40) feet from the right-of-way property line. Walls or view fences located in the front yard of a lot adjoining local, collector, or minor arterial streets that are three (3) feet in height or less shall be setback at least ten (10) feet from the right-of-way property line, except for the area allotted to an entry gate, as permitted under Section 2413, may be greater than the three foot height limitation. Walls located in the side or rear yard of a lot adjoining local, collector, or minor arterial streets, three (3) feet in height or less, shall be setback at least ten (10) feet from the right-of-way property line. Walls located in the rear or side yard of a lot adjoining local, collector, or minor arterial streets that exceed (3) three feet in height, shall be setback at least twenty (20) feet from the right-of-way property line; however, a view fence may be constructed at a ten (10) foot setback, or a meandering wall may be constructed at an average fifteen (15) foot setback, provided they meet the criteria set forth in this article and Table 2404A. See Table 2404A for additional criteria.

3. Adjoining Major Arterial Streets.

Walls exceeding three (3) feet in height that adjoin major arterial streets shall be setback at least twenty (20) feet from the right-of-way property line; however, a view fence may be constructed at a ten (10) foot setback or a meandering wall may be constructed at an average fifteen (15) foot setback provided they meet the criteria set forth in this article

and Table 2404 A. Walls three (3) feet in height or less may be constructed at the ten (10) foot setback. See Table 2404A for additional criteria.

c. Additional Criteria for Meandering Walls.

Meandering walls shall maintain an average setback of not less than fifteen (15) feet, said average to be determined by comparing the area between the ten (10) and the fifteen (15) foot setback area (noted as Area "A" on Figures 2404-A through -C) with the area encroaching between the fifteen (15) and the twenty (20) foot setback area (noted as Area "B" on Figures 2404-A through –C) such that the area located between the ten (10) and the fifteen (15) foot setback area shall be equal to or less than the area located between the fifteen (15) and twenty (20) foot setback area. Walls that have no significant meander and that are configured to meet the criteria set forth herein solely for the purpose of moving to a fifteen (15) foot setback are impermissible. See Tables 2404A and 2404B for additional criteria.

Table 2404A summarizes many of the regulations relating to height and setback regulations for walls, meandering walls, and view fences; and sets forth additional criteria related to these structures. Table 2404B sets forth additional criteria for meandering walls.

TABLE 2404A – ALL RESIDENTIAL DISTRICTS SETBACK AND HEIGHT REGULATIONS FOR WALLS / VIEW FENCES

FRONT YARD ALONG RIGHTS-OF-WAY			
STREET TYPE	**TYPE OF WALL OR FENCE**	**SETBACK FROM PROPERTY LINE, FEET**	**MAXIMUM HEIGHT, FEET**
Major	View Fence	10, Minimum	**8, including berm
	Meandering Wall	15, Average	**8, including berm
	All Others	20, Minimum	**8, including berm
	Any	10, Minimum	3
Local, Collector, Minor	Any	10, Minimum	3
	Any	*40, Minimum	6
SIDE OR REAR YARD ALONG RIGHTS-OF-WAY			
Major	View Fence	10, Minimum	**8, including berm
	Meandering Wall	15, Average	**8, including berm
	All Others	20, Minimum	**8, including berm
	Any	10, Minimum	3
Local, Collector, Minor	View Fence	10, Minimum	6
	Meandering Wall	15, Average	6
	All Others	20, Minimum	6
	Any	10, Minimum	3
SIDE OR REAR YARD INTERIOR (not along any right-of-way)			
Not applicable	Any	None Required	6
SIDE OR REAR YARD INTERIOR (adjoining non-residential property other than a right-of-way)			
Not applicable	Any	None Required	**8, including berm

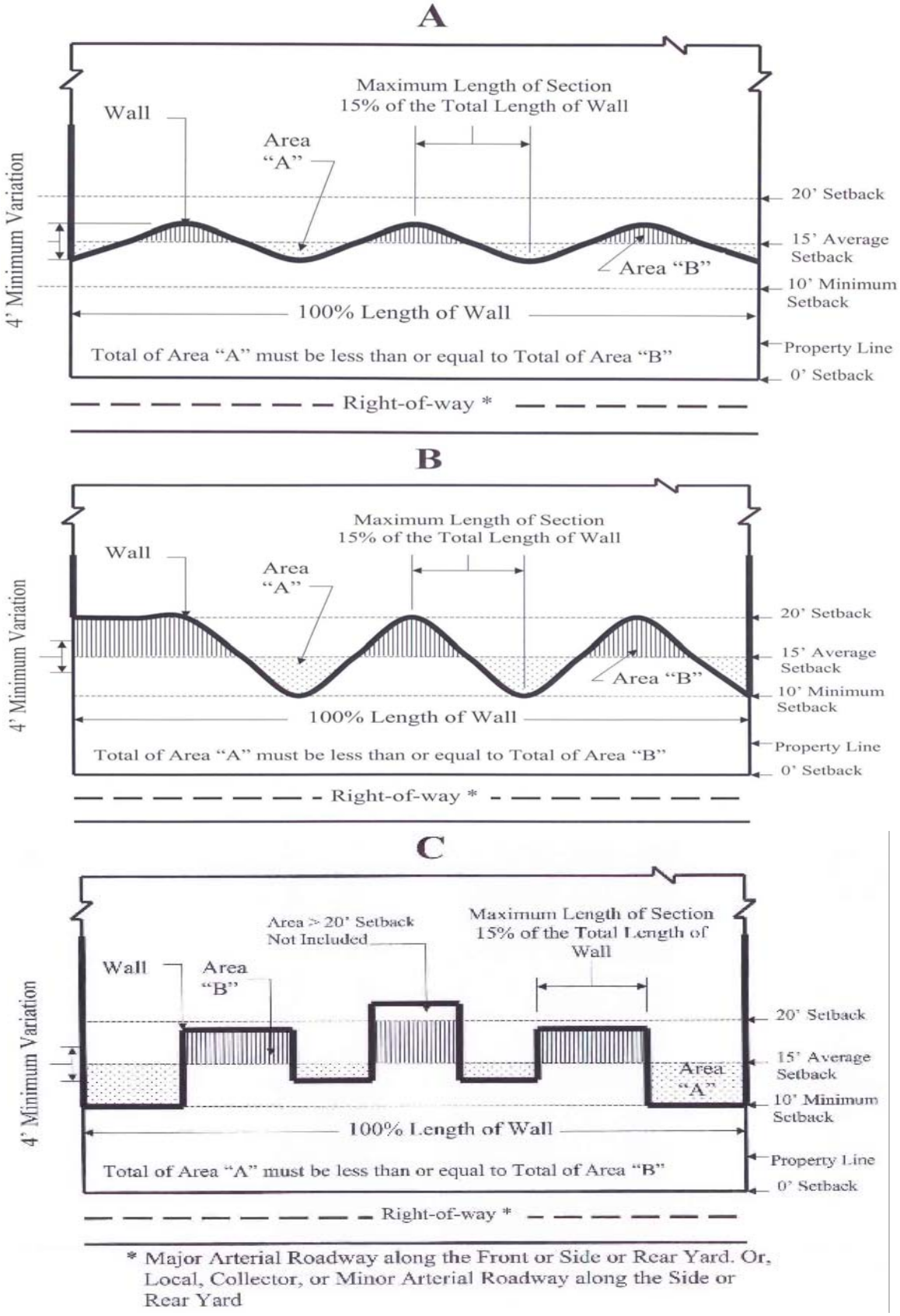
* In R-18A Zoning Districts, the front yard setback along local, collector, or minor streets is minimum 35 feet.
In R-10 Zoning Districts, the front yard setback along local, collector, or minor streets is minimum 20 feet, or as shown on the recorded plat, or as existing at the time of annexation. The setbacks shown on the recorded plat take precedence. If there are no setbacks shown on the recorded plat, the applicant shall choose a setback of 20 feet or a setback as existing at time of annexation. Reference Table 2404A for R-10 Zoning District side and rear yard setbacks.

** Refer to Section 2404(a) for details

TABLE 2404B – ADDITIONAL MEANDERING WALLS CRITERIA

Minimum setback from property line	10 feet
Minimum variation offset from average setback	4 feet
Maximum length of any single section meandering between the 10’ and 20’ setback	15% of total wall length
Maximum setback area allowed in determining meandering setback	20 feet

FIGURE 2404 – MEANDERING WALLS

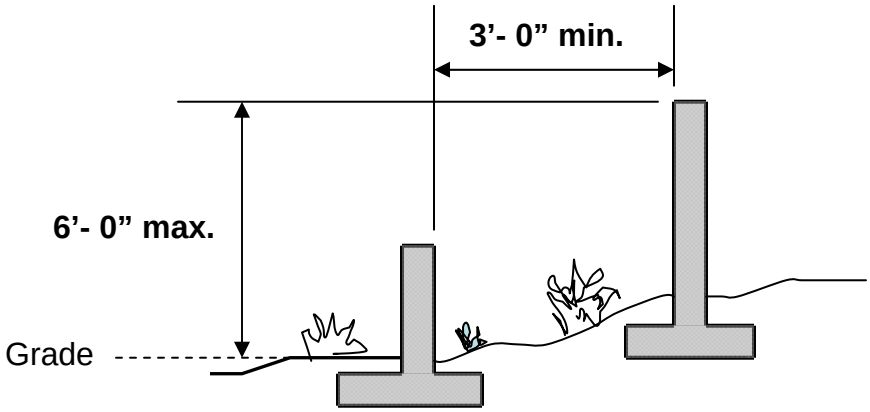


* Major Arterial Roadway along the Front or Side or Rear Yard. Or, Local, Collector, or Minor Arterial Roadway along the Side or Rear Yard

Section 2405 Stacking: [654]

Stacking of no more than two (2) walls on any single lot may be permitted, provided there shall be a minimum of 3 foot separation between the walls, and the space between the walls shall include appropriate and adequate vegetation to substantially minimize the visual impact of the combined walls. The landscaped area shall be maintained at all times in conformance with the Town's Landscape Guidelines. (see Figure 2405). The combined fence wall height shall not exceed six (6) feet. This stacking requirement applies only to walls adjoining rights-of-way and/or stacked walls that are visible from off the property.

FIGURE 2405 –STACKING OF WALLS



Section 2406. Landscaping:

Each property owner shall be responsible for landscaping the land located between the edge of road pavement, including any unpaved right-of-way, and the wall or fence. The landscaped area shall be maintained at all times in conformance with the Town's Landscape Guidelines.

Section 2407. Retaining Walls: [171 654]

a. Retaining walls shall only be used for the purpose of containing fill material or for minimizing cut or fill slopes.

b. The maximum height of any retaining wall shall not be more than six (6) feet. The height of a retaining wall is measured from the low side of natural grade to the top of the wall whether the top is retaining earth or not.

c. A terraced combination of retaining walls may be allowed and shall be measured as a single retaining wall; however, the combined walls shall be: 1) no more than eight (8) feet total vertical height; 2) terraced with a minimum distance of ten (10) feet and a maximum separation of fifteen (15) feet; and 3) contain appropriate vegetation between the walls so as to soften the visual impact of the combined walls (see Figure 2407).

d. When a safety fence, on top of a retaining wall, is required by code, it shall be a view fence (80% open), shall be finished to blend with surrounding natural colors, and shall be the minimum height required by the Town Code. The building code requires a safety fence only when there is a walking surface at the upper level.

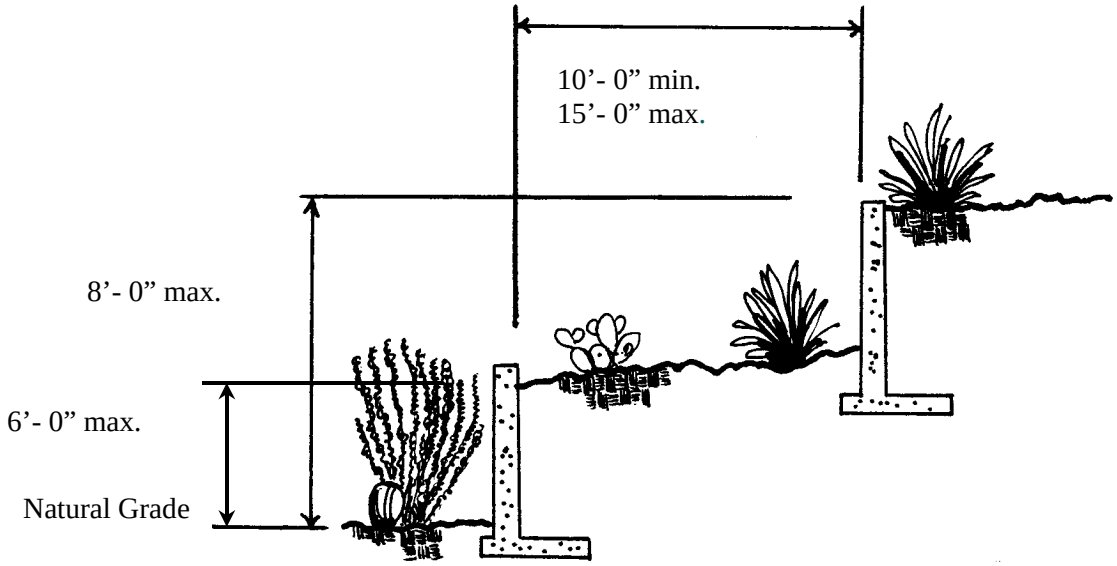
e. Where retaining walls are provided, they shall meet all of the requirements of Section 2403 – Material and Texture of this Article.

f. Where retaining walls are provided, they shall meet the setback requirements of Section 2404, Height and Setback Regulations, unless deemed necessary by the Town Engineer and the Community Development Director to prevent erosion. Placing fill solely for the purpose of obtaining a decreased wall setback shall be prohibited.

g. Fence walls may be located on top of the retaining material provided:

1. View fences placed on top of the retaining wall fill shall maintain a minimum separation of five (5) feet from the top of the retaining wall; and
2. All other fence walls placed on top of the retaining wall fill shall maintain a minimum separation of ten (10) feet from the top of the retaining wall; and
3. The combined walls shall be measured as one single wall and shall be not exceed a total vertical height of eight (8) feet, measured from the low side of natural grade to the top of the wall. Exceptions may apply to pool barriers (the pool barrier must be a view fence when the combined height exceeds 8 feet);
4. These separation requirements apply to any single lot and do not apply to adjoining walls on neighboring properties; and
5. Placing fill solely for the purpose of obtaining an increased wall height shall be prohibited.

FIGURE 2407 –TERRACED VERTICAL RETAINING WALLS



Section 2408. Subdivision Walls and View Fences. [559]

a. New subdivision walls and view fences that are not pre-existing (as defined below) and are constructed after January 2004, shall conform to the provisions of this article.

b. Pre-existing subdivision walls or view fences are subdivision perimeter walls or view fences located within forty (40) feet of the exterior property line of a platted subdivision or lot split that may, and typically do, run in general alignment with the property line along a public or private road and that are constructed before January 2004. A pre-existing subdivision perimeter wall or view fence need not extend the entire length of the perimeter to be considered a perimeter wall or view fence.

c. The terms of Section 6-3-12 of the Paradise Valley Town Code shall apply in all areas.

d. Location, height, setback, and design of subdivision perimeter walls or view fences shall be part of the approved final plat.

Section 2409. Corner Vision:

Refer to Section 8-1-13 of Chapter 8 – Safety, Health, Sanitation and Nuisance – of the Town Code for the corner vision criteria.

Section 2410. Mechanical Equipment Screening: 559

Mechanical equipment shall be fully screened from view. Walls may be used to screen mechanical equipment. Such walls shall:

a. Be of a minimum height and length needed to screen the mechanical equipment;

b. Have a maximum height of no more than six (6) feet. Screen walls over 6 feet in height may be allowed to properly screen the mechanical equipment, provided:

   i. Such walls meet the allowable setbacks and height of an accessory structure, and
   ii. Screening area surrounded by screen walls is calculated as part of the allowable floor area;

c. Have an architectural texture, color, and material compatible with the primary building on-site;

d. Meet setback requirements as shown in Table 2404A.

Section 2411. Courtyard: [654]

A courtyard is a private landscaped outdoor living space adjoining the main house and enclosed by walls and / or portions of the main house. A courtyard may be constructed to enclose an outdoor living space, provided:

a. The courtyard walls shall meet all setback and height requirements for the building to which they are attached.

b. If any portion of the courtyard wall exceeds six (6) feet in height, the area enclosed by the courtyard walls shall be included in the calculation of the maximum 25% Floor Area Ratio (FAR) set forth in the Zoning Ordinance for residential properties. Accessory structures such as a fireplace, fountain, or doorway into the courtyard may exceed six (6) feet in height without causing the courtyard area to be included in the 25% FAR, as long as there are no more than two accessory structures located in the courtyard wall and the horizontal length of the accessory structures equal no more than 25% of the lineal feet of the total courtyard wall.

c. The courtyard walls shall be an integral part of the design of and have an architectural texture, color, and material compatible with the main building or house on-site.

d. If a main house is designed in such a way that a courtyard is formed by the house itself on more than three sides, the courtyard area shall be included in the calculation of the maximum 25% FAR.

e. When a courtyard is not included in the 25% FAR calculation, all accessory structures located in the courtyard must comply with the accessory structure setback and height requirements outlined in Article X, Table 1001B of the zoning ordinance.

Section 2412. Wing Wall:

A wing wall is an architectural feature attached to the main house that extends beyond the exterior facades of the main house. The wing wall shall:

a. Meet all setback and height requirements for the main house;

b. Have an architectural texture, color, and material compatible with the main house on-site;

c. Not enclose any area.

Section 2413. Driveway Columns and Entry Gates: [654]

An increase in the height of the entry gates and associated columns at the driveway and pedestrian entrances may be permitted, provided:

a. Columns and entry gates located between the ten- (10) foot and the forty- (40) foot front yard setback may be allowed to exceed the three-foot maximum height, but in no event shall the height of the gate and its associated columns exceed six (6) feet. A transition maybe made from the top of the column to the three (3)-foot high wall, but the length of the horizontal transition shall not exceed the difference in the vertical height between the wall and the column or gate, whichever is greater.

b. Columns and entry gates at and beyond the forty- (40) foot front yard setback may be allowed to exceed the six-foot maximum height, but in no event shall the height of the gate and its associated columns exceed eight (8) feet. A transition may be made from the top of the column to the six (6)-foot high wall, but the length of the horizontal transition shall not exceed the difference in the vertical height between the wall and the column or gate, whichever is greater.

c. Reference Table 2404A for R-18A Zoning District and R-10 Zoning District front yard setback requirements.

Section 2414. Tennis Courts [564a]

Refer to Section 502(9), Tennis Courts, of Article V, (R-43), and Section 402(8), Tennis Courts, of Article IV, (R-175) Single-Family Residential District of the Zoning Ordinance for regulations relating to tennis courts. If the use of a tennis court is discontinued, the tennis court wall or fence shall be removed or brought into conformity with the provisions of this Article.

Section 2415. Nonconformity: [559]

a. Wall and View Fence Height and Location.

With the exception of pre-existing subdivision walls and view fences, as defined in Section 2408 (b), any wall or view fence that is non-conforming due to its height or location within a required setback area shall be made to conform to the requirements of this Article when:

1. Approvals are granted for lot splits and subdivisions;

2. Permits are issued for a new house; or

3. Permits are issued for structural additions, or remodels, alterations, or repairs of an existing house, covered by a single or multiple building permits within a thirty six (36) month period that together involves structural addition of or demolition of more than fifty (50) percent of the original square footage of the main house.

4. Permits are issued for alterations, repair, or additions to such wall or view fence, covered by a single or multiple building permits within a thirty six (36) month period that together involves structural addition of or demolition of more than fifty (50) percent of the lineal feet of the wall or view fence.

b. Wall Finish.

With the exception of pre-existing subdivision walls, as defined in Section 2408 (b), any non-conforming wall that is not finished on the side of the wall visible from any right-of-way or open space area shall be made to conform to the requirements of this Article when:

1. Approvals are granted for lot splits and subdivisions;

2. Permits are issued for a new house;

3. Permits are issued for structural additions, or remodels, alterations, or repairs of an existing house:

   i. covered by a single or multiple building permits within a thirty six (36) month period that together involves structural addition of or demolition of more than fifty (50) percent of the original square footage of the main house; or

   ii. the cost of which, computed on the basis of accumulated costs over any consecutive twenty four (24) month period, exceeds $150,000; or

4. Permits are issued for alterations or additions to such wall.

c. Side or Rear Wall Connections.

Side or rear wall or view fence connections to existing non-conforming walls and view fences and pre-existing subdivision walls and view fences may be placed within the twenty (20) foot setback area.

Section 2416 Prohibited Walls and Fences [654]

The following materials shall be prohibited in the construction or use with fences and walls as defined herein:

1. Razor wire;

2. Barbed wire;

3. Post and chain fences that are visible from off the property and/or are adjoining rights-of-way shall be prohibited, with the exception of a chain and associated posts which may only be used across a driveway.

FOOTNOTE:

121 Ordinance # 231 – 7/25/85
133 Ordinance # 249 – 9/25/86
135 Ordinance # 251 – 9/25/86
171 Ordinance # 296 – 3/9/89
306 Ordinance # 306 – 12/21/89
325 Ordinance #325 - 10/29/91
508 Ordinance # 508 – 10/26/00
534 Ordinance# 534 – 01/22/04
559 Ordinance # 559 – 06/09/05
564a Corrected for Scrivener's Error in Ordinance #564 (Reorganization of Zoning Code)
654 Ordinance #654 – 03/13/2014

Article XXV. SIGNS [170 388 564]

Section 2501. Definitions:

The definitions in Section 201 of the Zoning Ordinance of the Town of Paradise Valley control.

Section 2502. Signs Prohibited on Public Property:

Signs in the right-of-way, or upon public property must be temporary and must comply with the limitations of Table XXV-1. Signs must not be placed or mounted on utility or traffic control structures.

Section 2503. Removal of Prohibited Signs:

Any sign which is placed, posted or affixed contrary to the provisions of Section 2502 may be removed by the Police Department or Street Department. The person responsible for the illegal sign is liable to the Town for the cost of removing it.

Section 2504. Public Signs:

The following signs are not subject to the provisions of this Article:

Directional and informational
Traffic control
Hazard or warning
Underground utility locator
Public bulletin boards
Town community buildings

Section 2505. Limitations on other Signs, Both Non-Commercial and Commercial:

All signs must be placed, posted or affixed on private property only as allowed in Table XXV-1.

Section 2506. Lighting: [388]

A. Lighting shall not be flashing, intermittent or scintillating; shall not be moving, animated or create noise in any manner.

B. Back lighting of freestanding letters mounted on a wall shall be limited to 100 lumens per square foot of sign area and the letters shall be fabricated so that the light source cannot be seen from off the property.

C. Indirect lighting of signs shall be limited to two (2) seventy-five (75) watt incandescent bulbs per sign. If the sign is double faced, the same type and amount of lighting may be used on each side. The seventy-five (75) watt incandescent bulbs shall be limited to seven hundred fifty (750) lumens per bulb, and shall be completely shielded from view at the nearest property line, and shall not exceed 0.75 foot candles of projected illumination measured at the nearest property line.

D. Signs that are internally illuminated shall not exceed 0.75 foot candles of projected brightness measured at the nearest property line.

Section 2507. Audible Signs:

Signs shall not include public address capability nor any other means of producing speech or music.

Section 2508. Permits Required:

Prior to erection all temporary signs must receive a permit issued by the Town.

Section 2509. Duration:

All temporary signs must be removed each day no later than sunset.

Section 2510. Banner Signs: [200]

Banner signs may be exhibited only on properties currently subject to a Special Use Permit, in compliance with the following terms:

1. Size: Maximum three feet in height, and no longer than ten feet.

2. Faces: Banner signs may be two sided.

3. Setback: Banner signs shall be set back at least ten (10) feet from all property lines and must be placed so that they do not block traffic vision to or from the driveway. Compliance with Zoning Ordinance Section 1022 regarding corner vision at intersection is required.

4. Lighting: Banner signs shall not be separately lighted or illuminated. If existing approved landscape lighting provides illumination of the banner without alteration of the existing lights, it shall not be considered a violation of this section.

5. Quantity: Banner signs shall be limited to no more than one at a time.

6. Permits: Prior to placing a banner sign a permit must be obtained from the Town Zoning Administrator. Days during which banner signs must be displaced shall be specified in the permit.

7. Duration: The grantee of a special use permit may display a banner sign for 60 days each year. The duration of each display is the choice of each grantee provided the total number of days does not exceed 60. If a banner sign is displayed for more than 7 consecutive days another banner sign shall not be displayed until 14 days have elapsed.

8. Interior Banners:
Interior banners not visible from off the subject property may be utilized without compliance with the terms of this Section and are exempt from this Ordinance.

9. Fees: There shall be no fee for the first 48 hours of display of a banner sign each calendar year by each grantee. (A permit is required.) For each permit issued after the first 48 hours the fee shall be $25.00

FOOTNOTES:

170 Ordinance # 295 – 2/9/89
200 Ordinance # 328 – 12/19/91
388 Ordinance # 388 – 1/12/95
564 Ordinance # 564 – 11/03/2005

TABLE XXV-1

CATEGORY	CONTENT	MAXIMUM AREA	SET BACK	ILLUMINATION	PLAN REQUIRED[3]	QUANTITY	MAXIMUM Height
Residential	Name & Title	144 square inches		None	No	1	3 feet
Residential	Any	3 square feet each		None	No	6	3 feet
Subdivision	Name/ Logo Only	2 square feet per lot or 30 square feet, whichever is less, aggregate	25 feet	Internal, Indirect	Yes	2	3 feet
Subdivision	Premises [1] for sale	36 square feet, aggregate	25 feet	None	Yes	2	8 feet
Non-Residential	SUP[2]	SUP[2]	SUP[2]	SUP[2]	Yes	SUP[2]	SUP[2]

1. Must be removed when eighty per cent of the lots in the subdivision are sold (closed), or after the expiration of one year from the date first erected, whichever event occurs first.

2. Content, Maximum Area, Setback, Illumination, Quantity, and Height as approved by Special Use Permit or other Town action.

3. If a plan must be submitted, the plan must include the exact specifications of the sign, including dimensions, materials, method of illumination, number and location. The plan must be approved by the Town Council.

SPECIAL USE PERMIT GUIDELINES

TABLE OF CONTENTS

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Section 1 General Purpose

The following guidelines should not be construed as an ordinance. These guidelines are a result of joint discussions between the Town Planning Commission and Town Council to provide a generally-accepted vision of appropriate site, bulk, density, perimeter, parking, sign, lighting, and other related standards during the review of a new or amended Special Use Permit for a non-residential development in the Town of Paradise Valley. The nature of the request, the architecture of the development, the unique characteristics of the site, among other factors; may merit less or more restrictive standards as determined during a complete review of each individual request. It should be noted that meeting all the guidelines listed below does not obligate the Town to grant a Special Use Permit or amendment thereto. These guidelines supplement the regulations as set forth in Article XI, Additional Use Regulations and Special Uses, of the Town Zoning Ordinance.

Section 2 Lighting

The following lighting guidelines shall apply to all non-residential properties requiring a Special Use Permit.

a. **Outdoor lighting shall be permitted so long as:**

   i. the light emitting element is shielded so that no beam of light extends above a horizontal plane placed at the lowest level of any exposed portion of the light emitting element; and

   ii. the light emitting element and reflecting device of all lighting or illumination units is hooded or shielded so that it is not visible from any adjacent lot or real property; and

   iii. such outdoor lighting or illuminating units do not direct light, either directly or through a reflecting device, upon any adjacent real property.

   iv. uplighting shall be permitted so long as no light emitting device is greater than 25 watts or emits more than 250 lumens.

b. Outdoor **pole** lighting shall be permitted **subject to the provisions of subsection A.8.a of this section** so long as:

   i. the height of such lights or illumination does not exceed **16** feet measured from the natural ground level; and

ii. **Each lighting or illuminating device shall be set back from the nearest property line a distance equal to or greater than the height of the device above natural ground level.**

c. **Outdoor light levels, measured in foot candles in accordance with Illuminating Engineering Society of North America (IESNA) standards, shall not exceed the following levels in the locations specified:**

i. **parking lots – 1.6.**

ii. **entrance roadways, interior driveways and drop off areas – 5.0.**

iii. **adjacent to service buildings and loading docks – 5.0.**

iv. **in conjunction with architectural lighting adjacent to all other structures – 3.0.**

v. **outdoor pool decks and function areas – 5.0.**

vi. **outdoor dining areas – 10.0.**

d. **No outdoor lighting shall be permitted within any setback area adjacent to a residential property unless:**

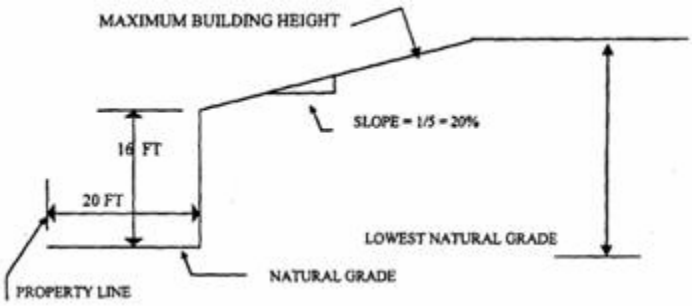
i. **the lighting measured at the property line does not exceed 0.5 foot candles; and**

ii. **all light emitting elements are less than three (3) feet in height.**

Section 3 <u>Open Space Criteria</u>

The following Open Space Criteria shall apply to all non-residential properties requiring a Special Use Permit. To maintain view corridors around the perimeter of a property, building heights shall be limited around property lines. No building shall penetrate an imaginary plane beginning at 16 feet above the natural grade and 20 feet from exterior property lines, which plane slopes upward at a ratio of one foot vertically for each five feet horizontally measured perpendicular to the nearest property line, as illustrated in Figure 3-1. This limitation shall apply until the maximum allowable height is reached. All height measurements shall commence at the ground elevation at the 20-foot beginning line. Building height measurements shall be taken from the high points of the structure to the closest point on the 20-foot beginning line perpendicular to that portion of the structure. Notwithstanding the foregoing, no structure shall be located closer to an exterior property line than as otherwise permitted for that use.

Figure 3-1



Section 4 <u>Resorts</u>

1. Site Standards

   a. ***Except for properties that have existing special use permits for resort uses****, the minimum site area shall be 20 acres which shall not be bisected by any public right-of-way*.

   b. **Except for properties that have existing special use permits for resort uses, the site shall have primary access from and frontage of at least 300 feet on a Major or Minor Arterial as designated in the Paradise Valley General Plan**.

   c. **Principal structures shall be those containing guest units or those containing guest registration areas, facility administrative offices and accessory uses. Principal structures with guest units also may contain permitted accessory uses**.

   d. **Accessory structures shall be those containing accessory uses**.

   e. **Service structures shall include those structures used for support and maintenance of the resort**.

   f. **All parking on a site shall be at the surface or underground**.

   g. **No individual retail business, office or business service shall occupy more than 2000 square feet. Entrances to any retail business, office or business service shall be from within a principal or accessory structure.**

2. Bulk and Density Standards

   a. Maximum building height:

      i. *Principal Structures* - ***36*** *feet*

      ii. **Accessory structures - 24 feet**

      iii. *Service structures - 18 feet*

      iv. **Towers and other architectural features may exceed maximum building heights, subject to special use permit or major amendment approval**.

      v. **To maintain view corridors around the perimeter of a property, building heights shall be limited around property lines in accordance with the Open Space Criteria per Section 3 of the Special Use Permit Guidelines.**

   b. Lot coverage

      i. *Total of all structures* - **25***%*

      ii. *Total of all impervious surfaces including building footprints - 60%*

      iii. *Open space, which shall consist of land and water areas retained for active or passive recreation purposes or essentially undeveloped areas retained for resource protection or preservation purposes, a minimum of* ***40****%*

   c. *Maximum density of guest units –* **1 unit for each 4000** *sq. feet of site area*

3. Perimeter Standards

   a. Minimum distance from exterior property lines where the adjacent use is residential:

      i. *Principal structures* - ***100*** *feet*

      ii. *Accessory structure* - ***60*** *feet*

      iii. **Service structure - 100 feet**

      iv. *Outdoor game courts and swimming pools* **which are generally available to all guests** *- 200 feet*

      v. *Parking lots and interior drives, excluding exterior points of access* **–60** *feet*

      vi. **Any portion of an equestrian facility, including structures, barns, stalls and corrals - 200 feet**

   b. Minimum distance from exterior property lines where the adjacent use is other than residential **or is adjacent to a public street:**

      i. *Principal structures - 100 feet*

      ii. *Accessory structure* - **40** *feet*

      iii. **Service structure – 65 feet**

      iv. *Outdoor game courts and swimming pools* ***which are generally available to all guests*** *- 65 feet*

      v. *Parking lots and interior drives, excluding exterior points of access - 40 feet.*

   c. **There shall be a 40 foot wide landscaped area adjacent to an exterior property line where it abuts residentially zoned property**.

   d. **There shall be a minimum 30 foot wide landscaped area where an exterior property line abuts a public or private local or collector street and a 50 foot wide landscaped area where an exterior property line abuts a Major or Minor Arterial**.

   e. The provisions of Chapter XXIV, Walls, and Fences, of the Town's Zoning Ordinance shall apply.

4. Parking and Circulation

   a. **On site parking shall be provided as follows**:

      i. **For each guest unit - 1.2 spaces**.

      ii. **For each dwelling unit - 2.0 spaces**.

      iii. **For each 50 square feet of net dining area in restaurants - 1.0 space**.

      iv. **For each two seats or equivalent area in meeting rooms, auditoriums or group assembly areas - 1.0 space**.

      v. **For each 300 square feet of net sales areas in retail establishments – 1.0 space**.

vi. **For each 300 square feet of net occupied space in office and service establishments - 1.0 space**.

b. **These requirements may be modified in conjunction with special use permit or major amendment approval based on information documenting overlapping usage of on-site facilities by guests or visitors and as contained in an approved traffic and parking analysis**.

c. *All parking and driveway areas shall be located so as to prevent lights from shining onto adjacent residential property*.

d. All parking areas and driveways located within 200 feet of adjacent residentially zoned property shall be screened with a minimum three foot high, solid, decorative wall or a landscaped berm providing equivalent screening or a combination of both.

e. *Landscaped islands shall be provided every 100 feet within surface parking areas.* **Shade tree planters shall be provided between every four stalls**.

f. **No loading, truck parking, trash containers or outdoor storage area shall be located within 100 feet of adjacent residentially zoned property. All such areas shall provide visual and noise screening to minimize impacts on adjacent residential property**.

5. Signs

a. **An identification sign may be located at each entrance to the resort from a Major or Minor arterial street. The maximum height shall be 8 feet and the maximum sign area shall be 40 square feet, aggregate.**

b. **On entrances from all other streets, the maximum height shall be 4 feet and the maximum area shall be 32 square feet, aggregate.**

c. **All signs shall be only backlit or indirectly illuminated according to the standards in Article XXV, Signs, of the Town's Zoning Ordinance.**

d. **No moving or animated signs shall be permitted. Changeable copy is permitted within the allowable sign area.**

e. **Traffic and directional signs within the site shall not exceed 12 square feet in area, aggregate, and shall not exceed 5 feet in height**.

f. **A sign, mounted on an exterior wall of any structure shall contain only structure identification as necessary for emergency access.**

6. Lighting as per Section 2 of the Special Use Permit Guidelines

Section 5 <u>Medical Office</u>

1. Bulk and Density Standards

   a. Maximum building height

   i. *Principal Structures* – **30** *feet*

   ii. **Accessory structures – 24 feet**

   iii. **Service structures – 18 feet**

   iv. **Towers and other architectural features may exceed maximum building heights, subject to special use permit or major amendment approval**.

   v. **To maintain view corridors around the perimeter of a property, building heights shall be limited around property lines in accordance with the Open Space Criteria per Section 3 of the Special Use Permit Guidelines.**

   b. **Maximum lot coverage for all buildings - 25%**

   c. **Minimum lot area - 5 acres**

2. Perimeter Standards

   a. **Building setback when property is adjoining residentially zoned property – 60 feet**

   b. **Building setback when property is adjoining a public street - 40 feet**

   c. **Parking lots and internal driveways shall be set back a minimum of 60 feet from adjoining residential zoned property**

   d. **Parking lots shall be shielded with a minimum 3 foot high wall or landscaped berm providing equivalent screening or a combination of both so that no vehicle lights shall shine onto adjacent residential property**.

   e. **Parking lots adjoining public streets shall be screened with a minimum three foot high, solid, decorative wall or a landscaped berm providing equivalent screening or a combination of both**.

   f. **There shall be a 40 foot wide landscaped area adjacent to an exterior property line where it abuts residentially zoned property**.

   g. **There shall be a minimum 30 foot wide landscaped area where an exterior property line abuts a public or private local or collector street and a 50 foot wide landscaped area where an exterior property line abuts a Major or Minor Arterial**.

3. **Parking**

   a. **On-site parking shall be provided as follows**:

   i. **Medical offices - 1 space for each 200 square feet of interior floor area**.

   ii. **Outpatient surgical facilities - 1 space for each 2 employees plus 1 space for each surgical room**.

iii. **Medical laboratories - 1 space for each 2 employees**.

iv. **Physical therapy facilities - 1 space for each 1.5 employees**.

v. **Pharmacy – 1 space for each 300 square feet of interior area.**

b. **These requirements may be modified in conjunction with special use permit or major amendment approval based on information documenting overlapping usage of on-site facilities by staff and visitors and as contained in an approved traffic and parking analysis**.

4. Signage

In addition to the provisions of Chapter XXV, Signs, of the Town's Zoning Ordinance, the following regulations shall apply:

a. **One ground sign that is no higher than 8 feet and no larger than 40 square feet in area shall be permitted at each principal entrance to the property**.

b. **No moving or animated signs shall be permitted**.

c. **Traffic and directional signs within the site shall not exceed 12 square feet in area or five feet in height**.

5. Lighting

Lighting as per Section 2 of the Special Use Permit Guidelines

Section 6 <u>Religious Facility, Private School, Non-Profit Organization, Public/Quasi Public</u>

1. Bulk and Density Standards

   a. *Maximum building height of principal building – 35 feet*

   b. **Maximum building height for all other structures - 24 feet**

   c. **Maximum lot coverage for all buildings - 25%**

   d. **Minimum lot area - 5 acres**

   e. **Towers and other architectural features may exceed building maximum heights subject to special use permit or major amendment approval**.

   f. **To maintain view corridors around the perimeter of a property, building heights shall be limited around property lines in accordance with the Open Space Criteria per Section 3 of the Special Use Permit Guidelines.**

2. Perimeter Standards

   a. **Building setback when property is adjoining residentially zoned property – 60 feet**

   b. **Building setback when property is adjoining a public street - 40 feet**

   c. **Parking lots and internal driveways shall be set back a minimum of 60 feet from adjacent residentially zoned property**.

   d. **Parking lots shall be shielded with a minimum 3 foot high wall or a landscaped berm providing equivalent screening or a combination of both so that no vehicle lights shall shine onto adjacent residentially zoned property**.

   e. **Parking lots adjoining public streets shall be shielded by a minimum 3 foot high wall or landscaped berm providing equivalent screening or a combination of both**.

   f. **There shall be a 40 foot wide landscaped area adjacent to an exterior property line where it abuts residentially zoned property**.

   g. **There shall be a minimum 30 foot wide landscaped area where an exterior property line abuts a public or private local or collector street and a 50 foot wide landscaped area where an exterior property line abuts a Major or Minor Arterial**.

3. Parking

   a. On-site parking shall be provided as follows:

      i. **Places of assembly - 1 space for each 3 seats or for each 54 inches of total pew length**

      ii. **Classrooms - 1 space for each classroom**

      iii. **Administrative offices - 1 space for each 300 square feet of net interior floor area**

      iv. **Professional offices - 1 space for each 300 square feet of net interior floor area**

b. **These requirements may be modified in conjunction with special use permit or major amendment approval based on information documenting overlapping usage of on-site facilities by employees or visitors and as contained in an approved traffic and parking analysis**.

4. Signage

In addition to the provisions of Chapter XXV, Signs, of the Town's Zoning Ordinance, the following regulations shall apply:

a. **One ground sign no higher than 8 feet and no larger than 32 square feet in area shall be permitted at each principal entrance to the property**.

b. **No moving or animated signs shall be permitted**.

c. **Changeable message panels shall be permitted**.

d. **Traffic and directional signs within the site shall not exceed 12 square feet in area and five feet in height**.

5. Lighting

Lighting as per Section 2 of the Special Use Permit Guidelines

Section 7 <u>Country Club and Golf Course</u>

1. Bulk and Density Standards

   a. **Uses may be conducted indoors or outdoors**.

   b. **Structures associated with the facility shall not exceed one story or 24 feet in height**

   c. **Lot coverage of all structures on a site shall not exceed 20% excluding outdoor game courts and swimming pools, and shall not exceed 30% including outdoor game courts and swimming pools**.

   d. **Minimum site area - 5 acres**

   e. **To maintain view corridors around the perimeter of a property, building heights shall be limited around property lines in accordance with the Open Space Criteria per Section 3 of the Special Use Permit Guidelines.**

2. Perimeter Standards

   a. **No tee or hole within any golf course or driving range shall be closer than 100 feet from the principal structure on any residentially zoned land**.

   b. **No portion of any outdoor game court or swimming pool and decking shall be closer than 150 feet from the property line of any residential zoned land**.

   c. **Building setback when property is adjoining residentially zoned property – 40 feet.**

   d. **Building setback when property is adjoining a public street – 40 feet.**

   e. **Parking lots and internal driveways shall be set back a minimum of 60 feet from adjacent residentially zoned property.**

   f. **Parking lots shall be shielded with a minimum 3 foot high wall or a landscaped berm providing equivalent screening or a combination of both so that no vehicle lights shall shine onto adjacent residentially zoned property.**

   g. **Parking lots adjoining public streets shall be shielded by a minimum 3 foot high wall or landscaped berm providing equivalent screening or a combination of both.**

   h. **There shall be a 40 foot wide landscaped area adjacent to an exterior property line where it abuts residentially zoned property**.

   i. **There shall be a minimum 30 foot wide landscaped area where an exterior property line abuts a public or private local or collector street and a 50 foot wide landscaped area where an exterior property line abuts a Major or Minor Arterial**.

3. Parking

   a. On-site parking shall be provided as follows:

      i. employees - 1 space per employee.

      ii. per golf course hole - 2 spaces.

iii. **per driving range station tee area - 2 spaces.**

iv. **putting or chipping green - 1 space per 500 square feet.**

v. **tennis, racquetball or handball - 3 spaces per court.**

vi. **swimming pool - 1 space per 60 square feet of deck area.**

vii. **dining areas and bar - 1 space per 50 square feet of dining area.**

viii. retail sales area - 1 space per 300 square feet of gross sales area.

ix. **exercise room - 1 space per 150 square feet of gross area.**

x. **event hall - 1 space per 50 square feet of assembly area or 1 space per 2 fixed or portable seats.**

b. **These requirements may be modified in conjunction with special use permit or major amendment approval based on information documenting overlapping usage of on-site facilities by guests or visitors and as contained in an approved traffic analysis**.

4. Signage

In addition to the provisions of Chapter XXV, Signs, of the Town's Zoning Ordinance, the following regulations shall apply:

a. **One ground sign which shall be no higher than 8 feet and no larger than 40 square feet in area shall be permitted at each principal entrance to the property**.

b. **No moving or animated signs shall be permitted**.

c. **Changeable message panels shall be permitted**.

d. **Traffic and directional signs within the site shall not exceed 12 square feet in area or five feet in height**.

5. Lighting

Lighting as per Section 2 of the Special Use Permit Guidelines

Section 8 <u>Guardhouse, Gatehouse, and Access Control Gates</u>

1. Bulk, density and design standards

    a. **The appearance of the guardhouses, gatehouses, and access control gates and related improvements shall be architecturally and aesthetically compatible with adjacent buildings, structures and landscaping**.

    b. **There shall be a turnaround provided outside a guardhouse, gatehouse, or access control gate which shall meet Town standards for cul-de-sacs**.

    c. **An access control gate shall be set back a minimum of 150 feet from the centerline of the nearest intersecting street providing access to the facility**.

    d. Guardhouses and gatehouses shall be no higher than **16** feet in height.

    e. No guardhouse or gatehouse shall exceed **250** square feet in area.

    f. No **access control gate** shall be higher than **8** feet.

    g. **Pedestrian and non-motorized vehicle access shall be provided adjacent to roadway access.**

2. Signage

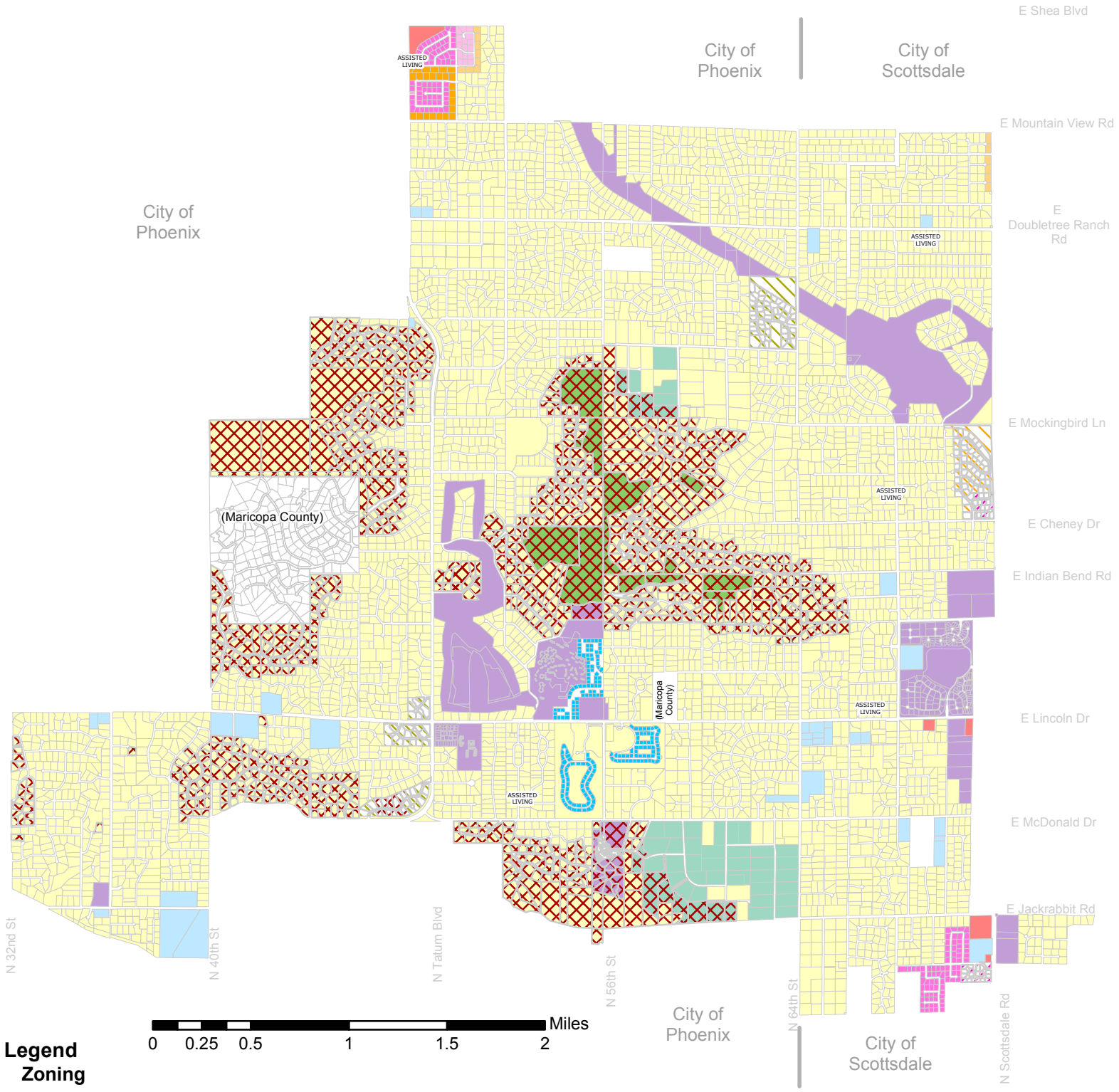
    a. **One wall sign, not to exceed 6 feet in height or 6 square feet in area shall be permitted.**

    b. **Ground signs, not to exceed 4 feet in height or 2 square feet each in area shall be permitted**.

3. Lighting

Lighting as per Section 2 of the Special Use Permit Guidelines

Town of Paradise Valley, AZ
Zoning Map



Legend
Zoning

- R-175
- R-43
- R-43CP
- R-35
- R-35CP
- R-35A
- R-18
- R-18A
- R-10
- R-18CP
- SUP-P Special Use Permit- Public
- OSP- Open Space Preserve
- SUP-R Special Use Permit- Resort
- SUP-O Special Use Permit- Medical
- Hillside
- Public School

Revised 04/24/13 15.30

Ticket#1888

TOWN OF PARADISE VALLEY
ORDINANCES

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
001	Establish Time of Regular Town Council Meeting	06/08/61
002	Building Height, etc. Regulating & Restricting	05/24/61
003	Building Moving, etc. Regulating, Erecting, etc.	05/24/61
004	Annexation - Gross Point Ned Curtis	05/25/61
005	Moving Buildings into Town, Restrictions	06/07/61
006	Area Adjacent to Grosse Point	06/27/61
007	Annexation - Dorothy Patter	06/27/61
008	Creating a Zoning Commission	08/10/61
009	Annexation - North Mummy Mountain	09/28/61
010	Zoning Regulating & Establishing	10/16/61
011	Annexation of Stanford Hills	10/02/61
012	Amend 302 of Zoning Ordinance 9 & 11	01/14/62
013	Amend 302 of Zoning Ordinance	01/31/62
014	Elections	01/31/62
015	Amend Zoning Ordinance re Guest Houses	07/31/62
016	Sub-division Regulation	09/27/62
017	Horses, etc.	09/27/62
018	Creating Civil Defense	11/29/62
019	Annexation - Graham	12/02/62
020	Public Service Franchise	05/23/63
021	40 mph Lincoln Drive	05/23/63
022	Annexation - Sunnyvale - P. Wegner	06/26/63
023	Annexation - Sandy Tatum	08/08/63
024	Uninterrupted Motor Vehicle Traffic	10/24/63
025	Change No. of Members of Board of Adjustment	12/05/63
026	Change Council Meetings - 2 each month	12/05/63
027	Adopting Town Code	02/13/64
028	Annexation - St. Barnabas	03/12/64
029	Amend Code re Prostitution, Trucks, etc.	03/12/64
030	Amend Zoning Ordinance - Utility Poles & Wires	07/14/64
031	Establish Police Court	09/24/64
032	Creating Office of Town Manager	12/17/64
033	40 mph on Certain Streets	02/11/65
034	Public Bids on Public Projects	03/11/65
035	Duties, etc. of Town Manager	03/25/65
036	Annexation - Clearwater Parkway	06/14/65
037	Speed - Palo Cristi, Stanford Drive	08/31/65
038	Creating Office of Vice Mayor	08/31/65

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
039	Prohibiting Impersonation of Peace Officers	12/16/65
040	Cluster Zoning	01/13/66
041	Amend CODE to Provide Speed Limits	01/27/66
042	Placing of Signs or Notices	05/26/66
043	Relating to Public Nuisances	06/23/66
044	Leash Law	10/27/66
045	Special Use - Churches	08/24/67
046	Weeds, Rubbish, etc.	07/11/68
047	Tennis, Mobile Homes, Boats, Trailers, etc.	01/09/69
048	Amend Building Code, Chapter 15	06/26/69
049	Establish Plumbing Code	06/26/69
050	Establish Electrical Code	06/26/69
051	Establish Mechanical Code	06/26/69
052	Annexation - Canceled	10/09/69
053	Annexation in lieu of Ordinance #52	10/30/69
054	Establish Sales Tax - Simon	07/09/70
055	Special Use - Resort Hotels	10/01/70
056	Crime Prevention - Signs	11/12/70
057	Sub-division Regulations	04/23/70
058	Abandonment of Streets, Alleys, etc.	04/23/70
059	Platting of Land for Sub-2, etc.	06/11/70
060	Sub-2, Regulating Amendments	07/23/70
061	Signing for Town Checks	12/17/70
062	Setting Speed Limits on Doubletree	02/11/71
063	Create Office of Acting Town Clerk	02/11/71
064	Amend Section 850, Ordinance 10	04/08/71
065	Mini Bikes	05/27/71
066	Amend Ord. 39, Private Guard & Patrol	10/28/71
067	Amend Ord. #10; Single-Family Res; Emergency	11/11/71
068	Amend Town Code Parking Emergency	12/02/71
069	Amend Ord. #10; Adequate Frontage; Emergency	12/16/71
070	Authorize & Est. No Passing Zones; Emergency	12/16/71
071	Amend Ord. #10 Add'l Use & Special Use; Emerg	12/16/71
072	Amend Ordinance #10; Permits	02/10/72
073	Establish Reserve Deputy Marshall	02/10/72
074	Sewer Easements; Emergency	06/29/72
075	Regulations Governing Platting; Emergency	10/12/72
076	Increase Building Permit Fees; Emergency	11/09/72
077	Amend Ord. #10; Increase Setbacks 60'; Emerg	05/24/73
078	Update Official Map	10/26/72
079	Certificates of Occupancy	05/10/73
080	Not Used	
081	Adopt Mountain Building Regulations; Emergency	05/10/73
082	Mountain Building Regulations - Original	08/13/73

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
083	Adopt Unified Fire Code	05/08/73
084	Rezone Mountain View Estates; Emergency	07/05/73
085	Reg. Construction in Flood Plains	12/27/73
086	Road Construction. Building Permit Fees	12/27/73
087	Adopt Town Code; Penalties; Emergency	03/04/74
088	Adopt Zoning, Emergency	03/04/74
089	Financial Disclosure, Emergency	08/22/74
090	Resort Hotels, Emergency	09/12/74
091	Annex Casa Blanca	10/24/74
092	Memorial Gardens	11/14/74
093	Adopt Standard Road Specs	12/19/74
094	Bldg. Design for Handicapped, Emergency	01/23/75
095	CATV	02/13/75
096	Lot Width	02/13/75
097	Road Standards, Amend Zoning	02/13/75
098	Providing Awards, Emergency	04/10/75
099	P & Z Time Limits	05/22/75
100	Annex Orange Valley	05/22/75
101	Lighting, Emergency	06/26/75
102	Tennis Courts	07/10/75
103	Security Guard Services, Emergency	08/14/75
104	Civil Defense, Emergency	08/14/75
105	Redefines Nonconforming Use, Emergency	08/14/75
106	Duties of Town Attorney	09/25/75
107	Owner of Abandoned Car, Liability	09/25/75
108	Annex Intersection, Clear, Parkway	10/23/75
109	Motor Vehicle on Private Property	12/10/75
110	Redefine "fr. yd."	01/08/76
111	Political Activity - Pers. Rules, Emergency	01/08/76
112	Sewer Hookup Fees, Emergency	01/08/76
113	Trespassing	02/12/76
114	Channelization - Indian Bend Wash	03/11/76
115	Amend #112, Sewer Hookup Fees	03/11/76
116	Amend Code - Public Bids, Emergency	03/11/76
117	Amending Town Code - P & Z and B of A	03/25/76
118	Subdivision Signs	05/27/76
119	Amend Zoning Ordinance - Resorts	06/10/76
120	Fences	06/24/76
121	Moncon. Use Variances	06/24/76
122	Town Clerk Seal, Emergency	07/22/76
123	Antennas	08/12/76
124	IBW Rules and Regulations	08/12/76
125	Bike Paths, Horses	08/12/76
126	Revises #123, Antennas	09/09/76

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
127	Swearing of Council Witness, Emergency	12/02/76
128	Home Security	12/02/76
129	Solicitation, Emergency	01/27/77
130	Paragraph P - Special Use, Emergency	02/24/77
131	No Discrimination Against Age, Emergency	03/10/77
132	Adopts UBC, UMC, etc., Emergency	03/24/77
133	Amends Mountain Building Regulations	04/14/77
134	Water Supply Adequacy	05/12/77
135	Cluster Re-zoning	05/12/77
136	Re-zone to R-18	06/09/77
137	Amend 2-7-4, Financial Disclosure	08/11/77
138	Amend Sec. 1409 Clean-up Building Permits	09/22/77
139	Annex City Island Doubletree & 60th St.	12/01/77
140	Noise Control	12/01/77
141	Sales Tax on Contracting	12/01/77
142	Annex La Posada	12/15/77
143	Maintaining Watercourses, Emergency	01/12/78
144	Amend Sales Tax on Contracting	02/23/78
145	Change General Election Day	04/13/78
146	Increase Fines for Misdemeanor	09/29/78
147	"For Sale" on Cars, Boats, Emergency	10/12/78
148	Rabies/Animal Control	10/26/78
149	Amend Zoning Ordinance Re: Penalties, Emergency	11/09/78
150	Open Meeting Law Compliance, Emergency	11/09/78
151	Hillside Roads, Max. Right-of-Way & Cut & Fill	04/26/79
152	Sales Tax on Solar Energy Devices	05/10/79
153	Officer's Duties, Planning Director	05/10/79
154	Amend Sec. 1007, Trailers, Trucks, etc.	05/24/79
155	Amend Zoning, S.U.P. Section	06/14/79
156	Amend Code, Article 8-1, Trash	08/09/79
157	Curfew, Juveniles	09/13/79
158	Annexation Paradise Hills Estates / Paradise Highland Estates	12/06/79
159	Collective Bargaining, Emergency	01/10/80
160	Annexation, Desert Fairways, Emergency	01/24/80
161	Subdivision Walls/Fences	02/28/80
162	New R-18 Zoning District	03/13/80
163	New R-35 Zoning District	03/13/80
164	Amend Article 5-6, Public Works Construction	04/10/80
165	Amend Sec. 1024 & 1101, Flood Hazard, Emergency	04/24/80
166	Amend Ord. 124, Indian Bend Wash, Emergency	04/24/80
167	Amend Sec. 1104 & 1806 Zoning, Application Fees	04/24/80
168	Annex Montana de Bonitas Casas	06/26/80
169	Amend Sec. 7-3-10, Vicious Animals, Licensing	06/26/80
170	Amend Sec. 4-2-5, Tax Collection	06/26/80

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
171	Amend Sec. 5-2-2, Plumbing Code	08/14/80
172A	Change Council Meeting Dates for October	09/11/80
172	Establish New R-43 Zoning District Annexed Area	09/11/80
173	Article 5-9, Abatement/Dangerous Buildings	10/16/80
174	Parking for Clinics	10/30/80
175	Sewer Tap Fees, Emergency	11/13/80
176	Amend Ord. 175, Sewer Tap Fees, Emergency	12/04/80
177	Annexation Morrison Property, Emergency	12/18/80
178	Flood Plain Regulations, Indian Bend Wash	04/23/81
179	Amend Sec. 6-3-11 Subdivision Signs	04/23/81
180	Amend Many Sections of Zoning Ordinance	04/23/81
181	Amend Ord. 175 & 176, Sewer Tap Fees, Emergency	05/14/81
182	Amend Code, New Chapter 15, Sewers, Emergency	06/11/81
183	Amend Chapter 6, Lot Splits, New Art. 6-9	06/25/81
184	Amend Sec. 3-2-6(f), Town Manager Spend & Bill	07/09/81
185	Amend Art. 6-9, Lot Splits	08/27/81
186	Change Date of October Council Meeting	09/10/81
187	Amend Art. 7-1, Prohibit Coyote Feeding	11/12/81
188	Amend Sec. 10-4-4, Solicitation	12/17/81
189	Annexation/Paradise Canyon, Emergency	01/14/82
190	Annexation/Lincoln Heights, Emergency	01/14/82
191	Annexation/P.V. Country Club Area, Emergency	01/28/82
192	Annexation/North 40th Street	02/11/82
193	Re-zoning Newly Annexed Areas	03/11/82
194	Amend Sec. 4-2-3A7, Tax Paid by Publishers	03/11/82
195	Amend Art. 11-2/Vehicles on Canals	03/25/82
196	Amend Zoning/Horses, Stables, etc.	05/27/82
197	Amend Art. 12-3, Juries	05/27/82
198	Annex Tatum Boulevard, Emergency	05/27/82
199	Amend Building Codes, Emergency	01/27/83
200	Amend Zoning, S.U.P. Commercial Resort	02/24/83
201	Amend Zoning, Microwave Antenna, etc.	03/24/83
202	Amend Chapter 11, Parking, Emergency	04/14/83
203	Amend Art. 9-3, Security Alarm System, Emergency	04/28/83
204	Amend Zoning, Prohibit Time Share	04/28/83
205	Amend Art. 4-2-5, Privilege Tax, Emergency	04/28/83
206	Annexation, Camelback Inn	05/26/83
207	Amend Code, Article 5-1, Right-of-Way,	08/11/83
208	Amend Code, Section 4-2-3, Privilege Tax	08/25/83
209	Amend Code 15-4-1, Raise Sewer Fee, Emergency	09/22/83
210	Amend Code, Chapter 3 & 12, Magistrates	11/10/83
211	Annexation, Mountain View & Indian Bend	11/18/83
212	Amend Code, Section 7-3, Animal Control	12/01/83
213	Amend Code Sect. 2-7, Financial Disclosure	12/01/83

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
214	Amend Article 11, Special Use for Country Club	01/26/84
215	Annexation, Paradise Valley Country Club	02/23/84
216	Amend Article 11, Section 1102, S.U.P.	04/26/84
217	Amend Zoning, Add Art. 23, New R-10 Districts	06/14/84
218	Annexation, Mountain Shadows West	06/14/84
219	Amend General Plan, Pavement Widths	07/12/84
220	Add New Sec. 2204 to Zoning, Slopes	07/12/84
221	Amend Code & Zoning, Adopt New Hillside Reg.	09/27/84
222	Amend Code, Chapter 9, Alarm Systems	09/27/84
223	Amend Code 5-1-3, Provide Adobe Building	12/06/84
224	Amend Code 6-3-2(A), Street Widths	12/06/84
225	Amend Zoning 2301-2-5, Area Restrict R-10	12/20/84
226	Amend Sec. 11-2-22 Code, Impound Vehicle	02/28/85
227	Annexation, Mountain Shadows East	03/14/85
228	Amend Sec. 1101 Zoning, SUP Review Committee	03/14/85
229	Amend Chapter 12, Magistrates	04/25/85
230	Amend Code, Sec. 15-4-1, Sewer User Fee	06/27/85
231	Amend Code & Zoning, Walls and Fences	07/25/85
232	Conditionally Rezone Area to R-35 Cluster Plan	10/24/85
233	Amend Zoning, Sec. 1003, Micro Antennas	11/14/85
234	Annexation, Invergordon - Jackrabbit Road	01/23/86
235	Amend Code 3-4-2, Discrimination, Harassment	01/23/86
236	Amend Code 2-5-4, Personnel Board	01/23/86
237	Amend Code 15-4-4, Delinquent Sewer Fees; Lien	01/23/86
238	Amend Code 10-3, Morals, Decency, etc.	01/23/86
239	Adopt Hillside Bldg Regulations as Amended	02/13/86
240	Amend Zoning 1024, Flood Plain & I.B.W.	03/27/86
241	Amend Regs, Encroachment Lines, I.B.W.	03/27/86
242	Repeal Art. 7, Commercial District (C-1)	04/10/86
243	Amend Encroachment Lines, I.B.W.	06/26/86
244	Rezoned R-35 Cluster, Valparaiso	06/26/86
245	Amend Code Art. 9-3-15, Automatic Dialers	06/26/86
246	Amend Code Art. 10-2, No Smoking Town Hall	07/24/86
247	Amend Code Art. 10-9, No Gambling	07/24/86
248	Amend Code Art. 5-5, Construction Right-of-Way	09/11/86
249	Amend Zoning Sec. 2406, Subdivision Per. Walls	09/25/86
250	Amend Code Art. 6-5 & 6-6, Info on Plats	09/25/86
251	Amend Art. 24, Sec. 2402, Walls & Fences Front Yard, Swimming Pool Walls Front Setback, Penalty	09/29/86
252	Extensive Amend Chapter 7, Animals & Leash Law	10/23/86
253	Amend Sec. 2-4-5, Agenda Council Meetings	11/13/86
254	Amend Sec. 15-3-1, Increase Sewer Tap Fee	11/13/86
255	Amend Sec. 9-3-11(B), Delete Notice of False Alarms made by Certified Mail	12/04/86

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
256	Amend Art. 4, Adding Bed Tax	02/01/87
257	Amend Chapter 15, Add Art. 15-5, Sanitary Sewer Extensions, Definitions, Cost	01/08/87
258	Amend Art. 5-5, Sec. 5-5-6, Placement Utilities Excavations, Construction, Right-of-Way	01/22/87
259	Amend Chapter 5, Adopt 1985 Uniform Building Codes, Plumbing, Mechanical, Electrical	02/12/87
260	Amend Code, Various Sections, Fee Schedules Board of Adjustment, Business License, Streets, Subdivisions, Alarm Companies, Soliciting, Sewers	02/12/87
261	Revise & Reform Regulations on Resorts	02/12/87
262	Amend Sec. 5-1, Add Sec. 5-1-9, Drainage Control Amend Chapter 6, Subdivisions, Retention/Detention	02/26/87
263	Amend Chapter 5, Adopt Storm Drain Manual	03/12/87
264	Amend Tax Code, Privilege License Tax	03/12/87
265	Amend Sec. 9-3-2, Include "Fire", Alarm System	04/09/87
266	Rezone Property Lincoln Drive, Mockingbird Lane, Sun Valley Resort, & Town Boundary to R-43 Cluster	04/09/87
267	Amend Chapter 8, Add Art. 8-2, No Smoking Public Places	05/14/87
268	Amend Sec. 7-1, Animal Control, Rabies Vaccine	07/09/87
269	Amend Chapter 4A, Tax Code, Increase Bed Tax	07/09/87
270	Add Art. 10-10, Escort Services	07/23/87
271	Annexation, Various Right-of-Way	08/27/87
272	Amend Chapter 11, Sec. 11-2-18 Presumptive Driver	08/27/87
273	Amend Chapter 9, Sec. 9-3-11 False Alarm Defined	08/27/87
274	Amend Art. 12-2, Add Sec. 12-2-4 Hearing Officers	09/24/87
275	Amend Code Chapter 1 & 11 re Trucks	12/17/87
276	Amend Code Chapter 8 & 10 re Safety, Health, Sanitation & Nuisance	12/17/87
277	Amend Sec. 5-1-8, Construction of Streets	01/28/88
278	Amend Zoning, Sec. 1024, Flood Plain, Repeal Ordinance 241, Use of Land Between Indian Bend Wash	02/25/88
279	Revoking Ordinances 232 & 244, Resolution 510 Rezone Land Between Scottsdale Road, Cheney Drive, 70th Street and Northern Avenue	02/25/88
280	Amend Tax Code, Privilege License Tax	03/24/88
281	Amend Sec. 5-1-8.A & 5-1-8.B Public Streets	04/14/88
282	Amend Sec. 5-1-6, Locks	05/12/88
283	Rezone Property Bounded by Invergordon to East & Mockingbird Lane to South to R-43 Cluster Cantatierra	05/26/88
284	Special Use Permit, Guardgates, Guardhouses Observation Booths	05/26/88
285	Rezone Land Between 62nd Place, Indian Bend Wash Invergordon & Mockingbird to R-43 Cluster, Cantatierra, Repealing Ordinance 283	06/23/88
286	Repealing Ordinance 219, Street Widths	07/14/88

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
287	Amend Art. 3-3, Add Sec. 3-3-9, Director of Community Development	07/14/88
288	Amend Zoning Height Regulations re Basements, Grades, Stables, Churches	09/29/88
289	Amend Sec. 9-3-6.D(2) & 9-3-15.B Audible Alarms Decrease Duration	10/13/88
290	Amend Sec. 301 Delete Non-Existing District	12/01/88
291	Amend Sec. 5-5-6, Utilities, Water & Sewers	01/12/89
292	Amend Art. 11, Sec. 1101, Special Use Permit, Art. 21, Sec. 2101, Cluster Plan	01/26/89
293	Amend Zoning Repealing Art. 14, Building Permits	02/09/89
294	Amend Chapter 5, Repeal Sec. 5-1-7 Right-of-Way Sec. 5-1-8 Public Streets, Sec. 5-1-9 Drainage Control, Add Art. 5-10 Building Permits	02/09/89
295	Extensive Amendments re Subdivisions, Signs, Resorts, Churches, Add Art. 25, Signs	02/09/89
296	Amend Sec. 2402 & 2405, Walls	03/09/89
297	Amend Art. 11-2, Sec. 11-2-18 Presumptive Operator	03/23/89
298	Adding R-175 Zoning District	04/13/89
299	Annex McDonald Drive, Tatum to 44th Street	
300	Amend Sec. 2-5-3.C Board of Adjustment Rules	07/27/89
301	Amend Chapter 8, Safety, Health, Sanitation & Nuisance, Violation Time from 30 to 15 Days	07/27/89
302	Amend Code Art. 1-10 & 10-6 Increase Penalty for Violations from $1000 to $2500	09/28/89
303	Amend Zoning Sec. 201 Non-Conforming Use, Add New Article 9, Nonconformance	10/26/89
304	Amend Zoning Sec. 1024 Flood Plain	11/09/89
305	Amend Code Adopt New Hillside Art. 22	11/09/89
306	Amend Zoning Art. 24 Add Sec. 2407 Walls	12/21/89
307	Amend Art. 5-10 Building Permits, Add Sec. 5-10-18 Walls	12/21/89
308	Rezone 9 Parcels from R-43 to R-175	03/22/90
309	Paradise Valley Cable Code, Repeal Chapter 14	03/22/90
310	Amend Chapter 6, Subdivisions, Art. 6-4H Utilities, Cable	04/12/90
311	Amend Zoning Repeal Sec. 1004 Airports	04/26/90
312	Amend Tax Code, Privilege License Tax 1990	06/14/90
313	Rezoning 8 Parcels from R-43 to R-175	06/14/90
314	Rezoning 2 Parcels from R-43 to R-175	06/28/90
315	Amend Code Chapter 15 Sanitary Sewer Fees	09/13/90
316	Amend Code Sec. 2-5-3 Board of Adjustment	11/08/90
317	Amend Code Chapter 7, Animal Control Licenses	09/27/90
318	Amend Chapter 5 Add Art. 5-11 Swimming Pools	12/06/90
319	Amend Zoning Swimming Pool Enclosures	02/28/91
320	Amend Zoning Sec. 2208 Hillside Height Cuts	02/28/91

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
	Limit & Bond Requirements	
321	Amend Zoning Sec. 2208.B Hillside Storage	02/28/91
322	Amend Code Art. 15-2 Sanitary Sewers, Design Construction, Inspection & Usage, Effluent	04/11/91
323	Amend Zoning Height & Density	06/13/91
324	Amend Code CPVC Pipe Automatic Fire Sprinklers	08/08/91
325	Amend Zoning Nonconforming Walls & Fences	10/29/91
326	Repeal Sec. 5-10-18 Nonconforming Walls	10/29/91
327	Deannexing Lot 488 of Hidden Village	12/05/91
328	Amend Zoning Add Banner Signs	12/19/91
329	Amend Zoning Sec. 1023 Brightness Outdoor Lights	01/09/92
330	Amend Regulations Resorts Size & Sign Content	01/09/92
331	Amend Code Location Utility Facilities Public ROW	02/13/92
332	Amend Code Sec. 11-2-22 Prohibit Parking, Impound	02/13/92
333	Annex El Chorro Lodge	02/13/92
334	Annex Colonia Miramonte	02/13/92
335	Amend Code Art. 6-4 Maintenance Private Streets	03/12/92
336	Authorize Mayor to Sign Development & Inducement Agreement to Annex Mountain Shadows Resort	03/12/92
337	Rezone Cheney Estates to R-35 Cluster	03/12/92
338	Amend Zoning Building Walls 40 Foot Setback	03/26/92
339	Annex Mountain Shadows	03/26/92
340	Not Used	
341	Reauthorize Ord. 336 Mayor to Sign Agreement	03/26/92
342	Amend Code Sec. 10-4-4 Limit Hours Solicitation	04/09/92
343	El Chorro Lodge R-43 Zoning Special Use Permit	04/23/92
344	Colonia Miramonte R-10 Zoning	04/23/92
345	Amend Zoning Definitions Jurisdiction, Finished Grade, Flood Plain, Height, Hillside, Regulations Governing Resorts	05/14/92
346	Amend Code No Smoking, Vending Machines	05/28/92
347	Re-zone Cheney Estates R-35 Cluster Plan	05/28/92
348	Re-zone Estates at Lincoln R-43 Cluster Plan	07/23/92
349	Amend Code, Financial Disclosures, Add Conflict of Interest	09/10/92
350	Re-zone Lincoln & Tatum R-43 Cluster Plan	09/24/92
351	Amend Code Subdivisions References to Assurances and Warranty of Title	09/24/92
352	Amend Code Prohibit Weapons in Town Buildings	10/08/92
353	Amend Code Traffic Transportation of Explosives	10/08/92
354	Amend Code Buildings Add Blasting, Penalty	10/08/92
355	Amend Code Minor Possessing Fire Arms without Written Parental Consent, Penalty	12/03/92
356	Amend Code Adopt 1991 Edition Building, Mechanical, Electrical, Plumbing, Fire Code, Emergency	04/08/93
357	Amend Code No Passing School Zones, Penalty	07/08/93

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
358	Amend Code Sewer Extensions Town Payment Schedule	07/08/93
359	Amend Code Trucks Add Dust Covers, Penalty	07/22/93
360	Amend Code Dust Control Construction and Parking Sites, Penalty	07/22/93
361	Amend Code Increase Bed Tax, Penalty	07/22/93
362	Amend Code Increase Retail Sales Tax, Penalty	07/22/93
363	Amend Code Increase Transaction Privilege Tax	08/26/93
364	Amend Code Public Bids Add Prequalification of Contractors	08/26/93
365	Re-zone Cypress Creek, from R-43 to Conditional R-35, Penalty	10/14/93
366	Re-zone Cypress Creek, from Conditional R-35 to R-35, Penalty	11/18/93
367	Reannex Lot 488 Hidden Village	02/24/94
368	Prohibit Mulberry & Olive Trees	02/24/94
369	Corner Vision Regulations to Town Code	02/24/94
370	Amend Code, 30-day Notice for Weeds	03/24/94
371	Adopt Church Regulations	03/24/94
372	Appoint Magistrates as Juvenile Hearing Officers	07/14/94
373	Amend Code, Section 5-10-1, Building Permits	07/28/94
374	Amend Zoning, Section 1023, Lighting	08/25/94
375	Amend Code, Section 6-3-13, Lighting Walls	08/25/94
376	Amend Zoning, Section 201, Measuring Height of Buildings	08/25/94
377	Amend General Plan, Chapter 5, Section B, Subsection 5, Repeal Ordinance #219	09/08/94
378	Amend Code, Chapter 10, Article 10-4, Graffiti	09/22/94
379	Amend Zoning, Add Articles V-A, R-35A, VI-A, R-18A, Setback Requirements; Article IX, Section 909, Rebuilding Nonconforming	10/13/94
380	Amend Code, Chapter 5-10-14, Improvements $50,000 to $150,000	10/13/94
381	Amend Zoning Section 1102(C) SUP	11/10/94
382	Amend Zoning 1102 and 2206 SUPREC, Hillside	12/01/94
383	1995 Tax Code Amendments	12/15/94
384	Amend Section 9-3-15A of Town Code Pertaining to Alarm Code	12/15/94
385	Amend Code Article 11-2, Add Section 11-2-23 Lighting of Barricades	12/15/94
386	Amend Code Article 11-2, Add Section 11-2-24 Parking of Taxicabs	12/15/94
387	Rezoning Monterey Ranch From R-43 to R-35 and R-18	01/12/95
388	Amend Zoning, Section 2506 Add Paragraphs B,C, & D, Pertaining to Lighting of Signs	01/12/95
389	Rezone Firebrand Ranch from R-35 to R-35A, and R-18 to R-18A	01/26/95
390	Rezone Mountain View Estates from R-35 to R-35A, and R-18 to R-18A	01/26/95
391	Rezone Arcadia Square II from R-18 to R-18A	01/26/95
392	Rezone Orange Valley Estates No. 3, Lots 76-116, from R-18 to R-18A	01/26/95
393	Rezone Grosse Pointe Two, Lots 10-17 from R-18 to R-18A	01/26/95
394	Rezone Quail Vista, Lots 1-8, from R-18 to R-18A	01/26/95
395	Amend Code Add Section 3-5-9, Contract Claims Hearing Officer/Procurement & Contract Dispute	02/23/95
396	Amend Code Add Section 8-1-15, Public Utility Walls Electrical Substations	02/09/95

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
397	Amend Code Add Section 12-3-3, Reimbursement for Jail Costs	02/23/95
398	TABLED – Amendments to Special Use Permits	
399	Amend Code, Article 10-8, Curfew Hours for Minors	02/23/95
400	TABLED – Massage Therapy	
401	Amend Code, Section 2-5-4, Add Section 2-5-5, Personnel Appeals Board	03/09/95
402	Amend Code, Section 12-2-1, Associate Presiding Magistrate	03/23/95
403	Amend Zoning Ordinance, Repeal Section 1806, Fees	03/23/95
404	Amend Zoning Ordinance, Repeal Section 1003, New Section 1003, Tall Structures & Antennas	05/25/95
405	Amend Zoning Ordinance, Article 6A, Section 605.2 Sideyard Setbacks in R-18A Districts	05/11/95
406	Amend Code, Chapter 6, Section 6-9-7, Lot Splits Approval	09/28/95
407	Amend Code, Chapter 13, Add Article 13-2, Private Organization for Fire Services	09/07/95
408	Not Used	
409	Amend Zoning Ordinance, Article 22, Section 2208H, Mountain Profile Inviolate	07/13/95
410	Amend Zoning Ordinance, Article 3, Re-zone Rezone NW Corner of Lincoln & Tatum	05/09/96
411	Amend Code, Chapter 4, Section 4-2-1, Returned Check Fee	09/07/95
412	Term Limits	10/26/95
413	Repeal Ordinance #412 Setting Term Limits	04/25/96
414	Amend Code, Chapter 2, Change Council Meeting Time to 7:00 pm	04/25/96
415	Exchange of Real Property Denton Lane	07/11/96
416	Amend Code, Chapter 11 Signs	06/13/96
417	Amend Code, Chapter 8 Community Enhancement	06/13/96
418	Amend Code, Chapter 8 Drainageways	06/13/96
419	Amend Code, Chapter 12 Hearing Officer	06/13/96
420	Amend Code, Chapter 8 Abatement of Nuisances	06/13/96
421	Not Used	
422	Amend Code, Chapter 3, Criminal History Records Check	06/13/96
423	Amend Code, Chapter 2, Subdivison/Zoning Applications Reconsideration Procedures	09/12/96
424	Amend Zoning, Article 11, Special Use Permits for Schools	07/25/96
425	Amend Zoning, Article 11, Section 1102, Article 22 Town Code, Chapter 2, SUPREC & Hillside Building	09/12/96
426	Amend Code, Chapter 11, Prohibiting Signs on Public Right-of-Way	09/26/96
427	Not Used	
428	Amend Code, Chapter 7, Animal Noise	11/14/96
429	Amend Code, Chapter 2, Planning Commission, Filing Complete Applications and Processing for Subdivisions	10/24/96
430	Amend Code, Chapter 5, Dedication of Right-of-Way Prior to Issuance of Permits & Approvals	12/05/96

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
431	Amend Zoning, Article 11, Special Use Permit	12/19/96
432	Amend Zoning, Articles 2,3,4,5,5-A,6,6-A,7 &10 Height, Lot Coverage, Setbacks, Stories, Yards	12/19/96
433	Amend Code, Chapter 2, Election Date	01/09/97
434	Amend Code, Chapter 4A, Tax Code 1996 Edition	02/13/97
435	Amend Code, Chapter 2, Notice of Meetings	01/09/97
436	Not Used	
437	Amend Zoning, New Article 12, Personal Wireless Service Facilities	02/13/97
438	Amend Code, Chapter 5, Right-of-way Permits	04/24/97
439	Amend Code, Chapter 5, ADA Guidelines	03/24/97
440	Amend General Plan, Passed and Adopted	05/22/97
441	Amend Code, Chapter 12, Pro Tem Magistrates	03/27/97
442	Amend Code, Chapter 11, Speed Limits	05/15/97
443	Not Used	
444	Amend Zoning, Article 10, Tall Structures	12/17/98
445	Not Used	
446	Amend Code, Chapter 3, Offices	11/23/97
447	Amend Code, Chapter 3, Purchasing	12/04/97
448	Amend Code, Chapter 5, Right-of-Way Landscaping	01/22/98
449	Amend Code, Chapter 3, Duties of the Clerk	01/08/98
450	Amend Code, Chapter 5, Clean Burning Fireplaces	12/18/97
451	Amend Code, Chapter 2, 4-Year Staggered Terms	12/18/97
452	Amend Code, Chapter 5, Right-of-Way Permits	02/12/98
453	Amend Code, Chapter 9, Disputes Involving Property in the Possession of the Police Department	12/18/97
454	Amend Code, Chapter 5, Grading & Dust Control	01/22/98
455	Amend Zoning, Article 12, Section 1201, Personal Wireless Service Facilities	02/26/98
456	Amend Code, Chapter 8, Corner Vision	01/22/98
457	Amend Code, Chapter 8 and 10, Graffiti	02/12/98
458	Establish R-87 Zoning District **DENIED**	
459	Amend Code, Chapter 5 & 6, Sewer Connections	03/12/98
460	Amend Code, Chapter 4A, Tax Code	07/23/98
461	Amend Code, Chapter 2, Hillside Building Committee to One-Year Term	06/04/98
462	Amend Code, Chapter 5 ROW Permits & Encroachments	07/09/98
463	Amend Code, Chapter 3 Signatories on Town Checks	06/25/98
464	Not Used	
465	Amend Code, Chapter 3, Increase Manager's Procurement Authority to $10,000	07/23/98
466	Amend Code, Repeal 2-5-4 Personnel Board and 13-2-25 Fire Protection Committee	08/27/98
467	Amend Code, Chapter 2 Personal Appeal Board	08/27/98
468	Amend Code, Chapter 8 Town Code Enforcement	08/27/98

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
	Committee Removed	
469	Amend Code, Add 11-3, Motorized Skateboards	09/24/98
470	Amend Zoning, Article 13, Records Retention	01/14/99
471	Amend Zoning, Article 23, Height and R10	01/14/99
472	Amend Tax Code, Increase Sales Tax to 1.4%	11/12/98
473	Amend Zoning, Article 11, Special Use Permits	12/17/98
474	Amend Zoning, Article 2, SUPREC Disbanded, Change Terms of Hillside Committee	12/17/98
475	Amend Code, Chapter 15, Sewer User Fees	11/12/98
476	Sewer Development Fees	12/03/98
477	Amend Zoning, Article 2, Private Road Standards	02/25/99
478	Amend Code, Chapters 5, 6, and 15, Sanitary Sewer Connections	01/14/99
479	Tax Code Amendments on Use Tax	01/28/99
480	Scrivener's Correction - Renumbering Go-Ped Ordinance	02/25/99
481	Amend Chapter 15, Sewer Fees	08/26/99
482	Amend Chapter 11, Traffic Fines	07/08/99
483	Amend Chapter 5 Blasting Operations	03/25/99
484	Amend Chapter 12, Court Fees	07/08/99
485	Open Space Criteria	12/16/99
486	Amend Code Chapter 2, Council Rules and Procedures	06/10/99
487	Amend Code Chapter 11, Parking Vehicles for Sale	06/10/99
488	Amend Code Chapter 3, Town Accountant Authority to Sign Checks	07/08/99
489	Amend Code Chapter 5, Uniform Building Codes/Swimming Pool Fences	09/09/99
490	Adopt 1999 Amendments to Town Tax Code	11/18/99
491	Amend Chapters 5 and 6, Blasting Permit and Fees	11/18/99
492	Amend Article 14, Section 14-5-1, 14-5-3 and 14-7-1.1, Cable Code	01/13/00
493	Article IX of the Zoning Ordinance - Nonconforming Uses and Structures	09/13/01
494	Amend Article 4 Section 2, Returned Check Fee	01/27/00
495	Amend Chapter 13, Fire Department	02/10/00
496	Amend Article 1-9, Penalties for Town Code Violations	03/09/00
497	Amend Chapter 15, Sewer Connection Fees	02/24/00
498	Amend Article 10, Section 10-11, Restriction of Helicopters	03/09/00
499	Amend Article 11-5, Parade and Procession Permits	03/09/00
500	Amend Article 5, Section 5-14, Drilling Permits	03/09/00
501	Amend Article 11, Section 11-6, Moving Structure Permits	03/09/00
502	Pending	
503	Amend Article 8, Section 8-3, Solid Waste Collection	05/11/00
504	Amend Article 11, Section 11-2-12, Processions	06/08/00
505	Rezoning Judson SUP to R-43 Single Family Residential	06/08/00
506	Amend Article 10, Section 10-6-2, Possession of Deadly Weapons	08/24/00
507	Pending	
508	Amend Zoning Article 24, Section 2403, Setbacks for Walls and Fences	10/26/00
509	Amend Article 13, Section 13-1-10, Adoption of Uniform Fire Code	11/16/00

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
510	Amend Article 12, Section 12-2, 12-3, Municipal Court Procedures	03/08/01
511	Amend Section 1204(3) Personal Wireless Service Facilities	07/26/01
512	Pending	
513	Amend Article 5-10-13, Article 6-3-8, Drainage Easements	06/28/01
514	Indemnification of Council, Judges, Committees and Board Members	07/26/01
515	Amend Article 5 Section 10 Building Demolition Permits	09/20/01
516	Adopt Appendix IV of Model City Tax Code	09/13/01
517	Amend Article 8 Safety, Health, and Sanitation	09/13/01
518	Amend Article 5 Section 5 Limiting Unnecessary Damage to Streets	09/13/01
519	Amend 2001 Tax Code	11/15/02
520	Amend Chapter 8, Article 7, §8-7-4 Violations, Civil & Criminal	01/24/02
521	Amend Chapter 5, Article 5, ROW Permits & Encroachments, § 5-5-3	7/11/02
522	Amend Chapter 10, Article 10-7 Control of Excessive Noise, §§ 10-7-2 & 10-7-5	02/14/02
523	Establish R-87 Zoning District **TABLED**	
524	Amend Article 5-5 ROW Permits & Encroachments	11/07/02
525	Deannexation of a Portion of Scottsdale Road ROW	11/07/02
526	Amending Chapter 13 Fire Code	03/27/03
527	Pending TABLED	
528	Pending TABLED	
529	Pending TABLED	
530	Adopt 2002 Municipal Tax Code Amendments	04/24/03
531	TABLED	
532	Amend Article 2 Section 5 Citizen Review Process	08/12/03
533	Repeal & Replace Article XXII Zoning Ordinance Hillside Development	10/0903
534	Amend Article II, IV, X, and Repeal & Replace XXIV Zoning Ordinance	01/22/04
535	Repeal and Replace Chapter 6 Subdivisions	10/09/03
536	Rezone Cameldale and Jokake Camelback to R-175	12/18/03
537	Void	
538	Amend Chapter 1 Article 3 Time Computation	01/22/04
539	Amend Chapter 3 Article 6 Rewards for Information on Crimes	02/12/04
540	Amend Chapter 6 Subdivisions – Water Service Impact Study	05/27/04
541	Amend Chapter 4A Tax Code – Increase Sales and Use Tax Rate	06/24/04
542	Amend Chapter 8 Adding Special Events on Private Property & ROW	07/08/04
543	Amend Chapter 5 Article 10 Building Permits When Required	07/08/04
544	Void	
545	Amend Effective Date of Ordinances 533 and 535	10/14/04
546	Amend Chapter 2 Initiative Referendum and Recall Elections	09/23/04
547	Amend Special Use Permit for La Posada Resort	11/04/04
548	Amending Zoning Article X Height and Area Regulations	03/10/05
549	Amend Chapter 8 Adding 8-9 Illicit Discharge and Connection	01/13/05
550	Amend Chapter 1 Article 9 Penalty	12/16/04
551	Amend Chapter 5 Article 1 Building Permit Expiration	01/27/05

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
552	Amend Chapter 5 Article 1 and Article 13 Hauling and Grading Fees	12/16/04
553	Amend Special Use Permit Phoenix Country Day School	03/24/05
554	Authorize Acquisition and Exchange of Real Property	03/10/05
555	Void	
556	Amend Chapter 13 Fire Department	04/14/05
557	Void	
558	Amend Article XXII Hillside Development Regulations	06/09/05
559	Amend Article XXIV Walls and Fences	06/09/05
560	Amend Chapter 10 Article 4 Residential Solicitation	05/12/05
561	Amend Chapter 10 Article 7 Construction and Related Activities	05/12/05
562	Amend Chapter 5 Building, International Building and Residential Code	06/23/05
563	Amend Chapter 13, Fire Department, International Fire Code	06/23/05
564	Amend Zoning Ordinance, Zoning Map, SUP Guidelines	11/03/05
565	Amend Article X Height and Other Regulations	10/27/05
566	Amend Zoning Article XVI Home Occupation	01/12/06
567	Amend Zoning Ordinance Adding Article XVII Assisted Living Home	11/17/05
568	Void	
569	Amend Chapter 5, Floodplain Administration	09/30/05
570	Amend Chapter 4 Business License	01/12/06
571	Amend Chapter 5 Building; Required Improvements	11/17/05
572	Amend Chapter 5 Building; Permits Required	11/17/05
573	Amend Chapter 8 Nuisance Noise	02/09/06
574	Amend Chapter 12 Municipal Court; Add Court Enhancement Fee	11/17/05
575	Amend Chapter 2 Pre-Application Review Process	02/09/06
576	Amend Chapter 3 Repeal Public Bids	02/23/06
577	Amend Chapter 5 Article 10 Building Permits – Plant Preservation	03/23/06
578	Amend Chapter 10 Residential Solicitation of Sales and Contributions	04/27/06
579	Amend Chapter 3 Duties of the Town Clerk	06/08/06
580	Reserved	
581	Amend Chapter 4a 2006 Amendments to the Tax Code	06/22/06
582	Amend Chapter 2-2-1 Selection of the Mayor	06/05/06
583	Amend Chapter 2 Administrative Relief; Administrative Review; Appeal	09/14/06
584	Amend Chapter 3 Administration; Authority to Sign Town Checks	09/14/06
585	Withdrawn	
586	Amend Chapter 4A 2007 Tax Code Amendments	12/07/06
587	Amend Chapter 5 Rename and Reorganize Building and Construction	02/22/07
588	Amend Chapter 5 Adopt 2006 International Building Codes	02/22/07
589	Amend Chapter 13 Adopt 2006 International Fire Code	02/22/07
590	Amend Chapter 5 Fuel Fired Generators	04/12/07
591	Annex 8444 Tatum Blvd Fire Station No. 1 Site	06/14/07
592	Pending	
593	Amend Chapter 13 Rename and Reorganize Fire Protection	05/10/07
594	Amend Chapter 5 Repeal Proof of Fire Protection Subscription	05/10/07
595	Approve Hermosa Inn Special Use Permit Amendment	06/14/07

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
596	Defeated (Amend terms of Mayor and Vice Mayor)	
597	Amend Chapter 11-2-30 Parking Restrictions	07/12/07
598	Amend Chapter 8 Adding 8-11 Air Quality and Fugitive Dust	12/20/07
599	Amend Chapter 3 Town Manager Procurement & Signature Authority	12/06/07
600	Amend Chapter 14 Cable Television System – Grant of License	12/20/07
601	Amend Chapters 5, 6, & 8 Watercourse Definition	02/28/08
602	Amend SUP for Unitarian Universalist Congregation of Phoenix	04/10/08
603	Adopt SUP for The Ritz-Carlton, Paradise Valley	04/10/08
604	Adopt 2008 Tax Code Amendments	04/24/08
605	Amend Article XI, Section 1103.2(C) Adding Conditional Use Permit	09/25/08
606	Amend Chapter 2 Direct Election of Mayor and Calling Election	01/22/09
607	Amend Section 10-7 Control of Excess Noise (Ambient Noise)	11/20/08
608	Amend Section 2-5-6 Hillside Building Committee	01/22/09
609	Amend Article XI Special Uses and Additional Use Regulations	10/22/09
610	Christ Church of the Ascension SUP Amendment	03/26/09
611	Pending	
612	Amend Section 5-1-2 and 5-2-2 Permit Expiration	06/11/09
613	Amend 12-3-5 Increase Court Enhancement Fee	06/11/09
614	Amend Section 3-3 Other Offices	07/09/09
615	Amend Section 2-1-4 Council Vacancies	09/10/09
616	Adopt 2009 Tax Code Amendments	10/08/09
617	Amend Article II Definitions Floor Area Ratio	12/03/09
618	Amend Chapters 4 and 9 Town Alarm Monitoring	11/19/09
619	Pending	
620	Amend Chapter 12 Public Safety Recover Fee 7 Prosecution Assessment	02/25/10
621	Amend Section 2-5-3 Administrative Relief	05/13/10
622	Pending	
623	Amend Chapters 2, 3, 4, 8, and 12 Administrative Structure Changes	05/27/10
624	Amend Chapter 4a Tax Code Increase Bed Tax to 3.4%	05/27/10
625	NewPath Networks SUP	07/08/10
626	Amend Chapter 13-3 Fireworks	11/18/10
627	Amend Chapter 4a Tax Code Increase Sales & Use Tax to 2.5%	05/12/11
628	Pending	
629	Amend Chapter 2 Hillside Building Committee Membership	10/21/10
630	Pending	
631	Amend Chapter 8 Special Events on Private Property and ROW	09/08/11
632	Amend Chapter 2 Repeal Duty to File Annual Conflict Statement	01/27/11
633	Amend Zoning Articles 2, 10, & 11 Medical Marijuana Dispensary	04/28/11
634	Withdrawn	
635	Amend Chapter 13 Licensed Fire Service Provider / Fire Service Fee	04/28/11
636	Lincoln Plaza Medical Center SUP Amendment	11/17/11
637	2011 Tax Code Amendments	11/17/11
638	Amend Chapter 2 Vice Mayor Term	10/13/11
639	Amend Chapter 2 Add Committee Attendance Requirements	10/27/11

ORDINANCE NUMBER	DESCRIPTION	DATE ADOPTED
640	Amend Chapter 2 Process for Filling Council Vacancies	01/12/12
641	Pending	
642	Pending	
643	Amend Chapter 2 Time Limits for Commission Action	03/08/12
644	Pending	
645	Pending	
646	Amend Chapter 2 Committee Member Removal	04/12/12
647	Pending	
648	Adopt 2012 International Building Codes	11/15/12
649	Camelback Golf Club SUP Amendment	06/07/12
650	Amend Chapter 13 Fire Protection Fee	05/10/12
651	Amend Chapter 4 and 9 Alarm Systems	06/28/12
652	Repeal Ordinance 606 Direct Election of the Mayor REJECTED BY VOTERS	
653	Mountain Shadows Resort Special Use Permit	04/18/13
654	Amend Article XXIV Walls and Fences	03/13/14
655	Amend Section 2-5-5 Personnel Appeals Board	09/27/12
656	Amend Zoning Ordinance Section 904 Golf Courses as Common Lands	11/15/12
657	Amend Zoning Ordinance Section 1102.3 SUP Submittal Requirements	11/15/12
658	Amend Zoning Ordinance Section 102.2b Medical SUP District	11/15/12
659	Amend Zoning Ordinance Section 1102.8 SUP Appeal Process	11/15/12
660	Tabled (Skateboards)	
661	Pending	
662	Pending	
663	Pending	
664	Pending	
665	Mountain Shadows Resort Special Use Permit Lot 68	04/18/13
666	Not Used	
667	Applewood Pet Resort Special Use Permit	03/14/12
668	Amend Chapter 2 Terms of Office for Mayor and Council	03/28/13
669	Amend Chapter 12 Terms of Judges	03/28/13
670	Temple Solel Special Use Permit	10/10/13
671	Amend Chapter 13 Fire Service Fee	12/19/13
672	Franciscan Renewal Center Special Use Permit	12/19/13
673	Pending	
674	Amend Chapter 12 Municipal Court Fees	03/27/14

TOWN OF PARADISE VALLEY
RESOLUTIONS

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0001	Health Services for Town	09/28/61
0002	Zoning Ordinance Declared Public Record	10/16/61
0003	Appointment of Zoning Commission	10/16/61
0004	Dissolve Scherer Heights, Whitewing Road	01/25/62
0005	Public Record Supplementary Zoning Map 1 and 2 (Stanford Hills and Mummy Mountain)	01/31/62
0006	Authorizing Town Clerk to Hold Election	01/31/62
0007	Designating Polling Place for Primary and General Election	02/21/62
0008	Change 61st Street to Whispering Hills Road	04/30/62
0009	Change 35th Street or Sharon Street to Homestead Lane	04/30/62
0010	Closing MacDonald Drive West of 36th Street, Stanford Hills	05/24/62
0011	Right-of-way Abandonment, Irv McMahon	05/24/62
0012	Appoint Ferguson, Brooks & Kelly as Town Engineers	07/31/62
0013	Appoint Committee to Study & Make Recommendations Underground Utility Lines	09/27/62
0014	Appoint Chairman of Committee Underground Utility Lines	09/27/62
0015	Appoint Committee to Study & Make Recommendation on Comprehensive Code	09/27/62
0016	Authorizing Town Engineer to Issue Permits	09/27/62
0017	Amend Resolution #16, Lesser Requirements for Improvement of Public Ways	10/25/62
0018	Limited Expenditures for Council Members	09/27/62
0019	Abandonment of Right-of-Way Northfield Estates II	03/28/63
0020	Retain Attorney John Madden to Represent Town	04/25/63
0021	Adopting Town Code	04/25/63
0022	Franchise Public Services, Electrical & Gas	07/02/63
0023	Objection to Real Estate Signs	07/12/63
0024	Change Council Meeting Dates for December	12/05/63
0025	Town Code & Zoning Ordinance, Subdivisions	02/13/64
0026	Urban Transportation	03/26/64
0027	Limited Expenditures for Council Members	04/09/64
0028	Zoning Property Adjacent to Scottsdale	05/28/64
0029	Establish Post Office	06/11/64
0030	Tentative Estimates ‘64-’65 Expenditures	07/09/64
0031	Final Resolution on Post Office	06/11/64
0032	Zoning Property Adjacent to Boundaries of Town	07/14/64
0033	Place for Police Court Sessions	09/24/64
0034	Authorizing Town Marshal to Interview for Deputy Marshal	09/24/64
0035	Adopting 1964-65 Budget	09/24/64

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0036	Final Place for Police Court Sessions	11/08/64
0037	Authorizing Town Marshal to Hire Deputy Marshal	11/12/64
0038	Altering Meeting Dates for November & December 1964	11/12/64
0039	Adopt Land Use Plan for Town	01/14/65
0039A	Abandonment of Cardinal Drive and Redwing Road	04/22/65
0040	Preservation of Camelback Mountain	05/28/65
0041	Authorizing Town Manager to Consent to Municipally Owned Utilities	06/03/65
0042	Authorizing Council to Hire Town Manager	05/22/65
0043	Tentative Budget for 1965-66	07/08/65
0044	Cross Walks 36th Street & Stanford Drive	08/31/65
0045	Arterial Motor Vehicle Fuel Tax Fund	08/31/65
0046	ARS 28-1502 Motor Vehicle Fuel Tax Fund for Road Improvements & Maintenance	08/31/65
0047	ARS 42-306(B) Public Works Reserve Fund	08/31/65
0048	Adoption of Final 1965-66 Budget	08/31/65
0049	Establishing Working Conditions & Fringe Benefits for Town's Employees	09/09/65
0050	Establishing Regulations & Expense Allowance for use of Private Vehicles by Officers & Employees of Town	09/09/65
0051	Creating Sergeant's Position	10/28/65
0052	Employment Acting Town Manager, Henry Penfield	01/13/66
0053	ARS 18-502 Roadway Abandonment	01/27/66
0054	ARS 28-627, 28-643 "Stop" Intersections at 68th & Jackrabbit and 69th & Jackrabbit	01/27/66
0055	Employment Sudbeck Engineer	03/14/66
0056	Employment Henry Penfield as Town Manager	04/28/66
0057	Employment Peter Wegner as Street Superintendent	05/26/66
0058	Employment Lester Naumann as Marshal	06/09/66
0059	ARS 35-325.03 and ARS 35-325.07 Inactive Funds	06/06/66
0060	Amend Resolution 49, Vacations	06/09/66
0061	Tentative Budget for 1966-67	06/23/66
0062	ARS 18-502 Invergordon Abandonment	06/23/66
0063	Retirement System	06/23/66
0064	Employment Peter Wegner as Street Superintendent	06/23/66
0065	Adoption of Final 1966-67 Budget	07/14/66
0066	ARS 42-306(B) Public Works Reserve Fund	07/14/66
0067	Roadway Abandonment	10/13/66
0068	ARS 28-627 & ARS 28-643 "Stop" Intersections	10/13/66
0069	Creating Maricopa Association of Governments (MAG)	01/26/67
0070	Appoint Carl Peachey as Police Justice	04/27/67
0071	ARS 28-627 & ARS 28-643 "Stop" Intersections 38th Place and 38th Street at Bethany Home	04/27/67
0072	ARS 18-502 Roadway Abandonment Wray	04/27/67

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0073	Tentative Budget for 1967-68	06/22/67
0074	ARS 42-306 Public Works Reserve Fund	06/22/67
0075	Amend Resolution 33 Provide Place for Police Court Sessions	02/28/68
0076	ARS 18-502 Roadway Abandonment Palo Cristi 4 Way Stop	03/14/68
0077	Employment James Palmatier as Deputy Marshal	01/23/69
0078	Employment John Phillips as Town Manager	04/10/69
0079	ARS 42-302 Adopting 1969-70 Expenditures	08/02/69
0080	Paving Joshua Tree & 58th Place	10/30/69
0081	ARS 18-507 Roadway Abandonment	11/13/69
0082	ARS 18-502 Roadway Abandonment	11/13/69
0083	Appointment Vivian E. Lawlor **(VOIDED)**	
0084	Activating Police Court	01/23/69
0085	Application for APS Underground Conversion at Ironwood Hills, Paradise Hills and Coronado Foothills Subdivisions	01/08/70
0086	Abandonment of Superstition Lane	02/26/70
0087	Appointing Depositories for 1970-71	05/14/70
0088	Appoint Gary Mikel as Deputy Marshal	06/15/70
0089	Appointing Lt. & Deputy Marshals **(CANCELLED)**	06/11/70
0090	Tentative Budget for 1970-71	07/09/70
0091	Appointing Lt. & Deputy Marshals	06/11/70
0092	Adoption of 1970-71 Budget	07/23/70
0093	Jurors Pay	07/23/70
0094	APS Underground Conversion at Vista Linda	09/24/70
0095	APS Underground Conversion at PV Country Estates	09/24/70
0096	Regulatory Signs “Stop”, “Yield-Slow Children”	11/12/70
0097	Change December Meeting Dates	11/12/70
0098	Appoint of Todd Rochwell as Town Engineer	12/17/70
0099	Roadway Abandonment Public Utilities Easement	01/14/71
0100	Appoint of C.J. Augustine as Acting Town Clerk	02/11/71
0101	Authorizing Town Enter Group Workmens Compensation Insurance Agreement by League AZ Cities & Towns	02/11/71
0102	Procedure for Appointments to Commissions & Boards	02/25/71
0103	Receipts from Sales Tax To Public Works Reserve Fund	06/24/71
0104	Tentative Budget for 1971-72	06/24/71
0105	Appoint of Ronald Petica as Town Attorney	06/24/71
0106	Receipts from Sales Tax To Public Works Reserve Fund	06/24/71
0107	Adopt Budget for 1971-72	07/22/71
0108	Appoint of Harold Holcomb as Police Justice in Absence of Present Police Justice Carl Peachey	08/12/71
0109	Appoint of Ronald Dalrymple as Town Marshal	10/14/71
0109A	Appoint of C.J. Augustine as Town Clerk	10/12/71
0110	Appoint of Philip von Ammon as Police Justice in Absence of Present Police Justice Carl Peachey	10/28/71
0111	Town Marshal to Report to Town Manager	10/28/71

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0112	Town Council Meetings for November & December 1971	11/11/71
0113	APS Underground Conversion Paradise Homes Estates	11/11/71
0114	Authorizing Regular Primary Election February 23, 1972	12/16/71
0115	Honorary Town Marshal to Lester Naumann	02/24/72
0116	Honorary Town Mayor to Jack Huntress	02/24/72
0117	Appoint of David Olson as Reserve Deputy Marshal	03/09/72
0118	Employment of John Hines as Deputy Marshal	01/13/72
0119	Appoint Reserve Deputy Marshals	05/11/72
0120	Placement of Regulatory Traffic Signs	04/27/72
0121	Appoint David Olson as Deputy Marshal	04/27/72
0122	Appoint Mary Ann Brines Acting Town Clerk	06/08/72
0123	Appoint Eugene Farmer Reserve Deputy Marshal	06/08/72
0124	Establish Police Court Days and Hours	06/29/72
0125	Adopting 1972-73 Budget	07/13/72
0126	Flood Protection Program See Resolution #434	07/13/72
0127	Apply Federal Assistance Flood Protection	07/13/72
0128	Increase Swimming Pool Permit Fee	07/27/72
0129	Finalize 1972-73 Budget	08/10/72
0130	Appoint Kenneth Turner as Deputy Marshal	08/24/72
0131	Appoint Mary Ann Brines as Town Clerk	09/28/72
0132	Condemnation Sewage Action #C264919	10/12/72
0133	Alter November 1972 Meeting Date	10/12/72
0134	Camelback Foothills Underground Conversion	02/22/73
0135	Setting Salary for Town Marshal	12/14/72
0136	Appoint Oscar Butt as Town Manager	01/25/73
0137	Abandonment Club Estates Lots 23, 24	02/22/73
0138	Form A.S.P. No. 12 Surplus Property Agency	05/24/73
0139	Adopt 1973-74 Tentative Budget	06/14/73
0140	Rehearing Club Estates Underground Conversion	07/05/73
0141	Change Court Dates	09/13/73
0142	Abandonment Swengel-Robbins Alley	10/25/73
0143	Authorizing Primary Election February 11, 1974	11/08/73
0144	Alter November 1973 Meeting Date (Not dated)	
0145	Abandon Unused Utility Easement Cholla Gardens Unit II	12/27/73
0146	Swimming Pool Permit Fees	12/27/73
0147	Bicentennial Commission	01/20/74
0148	Tax Collection Arizona State Tax Commission	12/13/73
0149	Resolution of Appreciation	02/14/74
0150	Commending City of Phoenix Bridge Design & Construction at 44th Street and MacDonald	02/14/74
0151	Declares Town Code and Zoning Ordinance Public Record	03/04/74
0152	Oppose House Bill 2188 Create State Regional Planning Agency 03/14/74	
0153	Oppose House Bill 2061 Collective Bargaining and Binding	

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
	Arbitration for Public Safety Personnel	03/14/74
0154	Road Improvements	03/28/74
0155	Personnel System	03/28/74
0156	Guard Service Regulations	04/01/74
0157	Reserve Deputy Marshal/Councilman Not Permitted	04/01/74
0158	Election Board	04/11/74
0159	Intention to Pave Fanfol	04/25/74
0160	Bond for Officials	04/25/74
0161	Bike Paths Paradise Valley Homeowners Association	04/25/74
0162	Improvement District #4	05/09/74
0163	Pave Fanfol	05/23/74
0164	Intention to Pave Horseshoe	06/27/74
0165	Amends Personnel Rules	06/27/74
0166	Adopt 1974-75 Budget	07/25/74
0167	Road Improvements Horseshoe and Martingale	08/08/74
0168	Regulations Governing Resort Hotels	09/12/74
0169	Intention to Improve District with Flood Control Facilities	09/12/74
0170	Assessment Diagram Improvement District #6	09/26/74
0171	90-Day Moratorium on Outdoor Lighting Higher than 10 Feet	09/26/74
0172	Employment Roger McKee as Town Attorney	09/26/74
0173	Scottsdale School District	09/26/74
0174	Resolution of Appreciation Ronald Petica as Town Attorney	10/10/74
0175	Improvement District #1	10/24/74
0176	Improvement District #7 Approve Assessment Diagrams	10/24/74
0177	Improvement District #6 Assessment Hearing	10/24/74
0178	Improvement District #6 Approve Assessments	11/14/74
0179	Closing Butler Drive	11/14/74
0180	Improvement District #6 Issue Bonds	12/05/74
0181	90-Day Moratorium on Outdoor Lighting Higher than 10 Feet	12/19/74
0182	La Colina Land Exchange Malouf Brothers Development	12/19/74
0183	Improvement District #7 Assessment Hearing	01/09/75
0184	Removal Myers Encroachment 9328 North 68th Place	01/23/75
0185	Removal Georgianni Encroachment 9322 North 68th Place	01/23/75
0186	Improvement District #7 Approve Assessments	02/13/75
0187	Improvement District #7 Issue Bonds	02/13/75
0188	Contract with Central Arizona Project Purchase Water	02/13/75
0189	Extend Lighting Moratorium	03/13/75
0190	License to Operate Cable Television	03/27/75
0191	Improvement District #1 Assessment Diagram	03/27/75
0192	Marston Reward	04/10/75
0193	Casa Blanca Special Use Permit	04/10/75
0194	Bond for Besserman Lawsuit Appeal	04/24/75
0195	Establish Schedules for Building, Road Construction & Utility Trenching Permits	05/08/75

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0196	Amend Personnel Rules and Regulations	05/22/75
0197	Amend Personnel Rules and Regulations Deputies	06/12/75
0198	Adopts 1975-76 Tentative Budget	06/26/75
0199	Improvement District #1 Approve Assessment	07/10/75
0200	Adopts 1975-76 Budget	07/10/75
0201	Mason Easement 6741 East Mockingbird Lane	07/10/75
0202	Drainage Easement Villa Maderos del Cuenta	07/24/75
0203	Improvement District #1 Issue Bonds	07/24/75
0204	Reduce Speed Limit MacDonald Drive, No Passing Zone	07/24/75
0205	Authorize Election February 3, 1976, Polling Places, etc.	09/25/75
0206	Deposit of Funds	09/11/75
0207	Bob Tribken Tribute	10/09/75
0208	Town Magistrate Court Hours	10/09/75
0209	Resolution of Appreciation Carl Peachey	10/23/75
0210	Name Change Paradise Way to 53rd Place	12/18/75
0211	Improvement District #8 Butler Drive Sanitary Sewers	02/12/76
0212	Improvement District #8 Work Order	03/11/76
0213	Special Use Permit Resort Hotel 90-Day Moratorium	03/25/76
0214	Improvement District #8 Approve Assessment Diagrams	05/27/76
0215	Resolution of Appreciation Donald Hutton	05/27/76
0216	Adopt 1976-77 Tentative Budget	06/10/76
0217	Adopt 1976-77 Final Budget	06/24/76
0218	Improvement District #8 Assessment Hearing	06/24/76
0219	Improvement District #8 Approve Assessment Diagrams	07/22/76
0220	Improvement District #8 Issue Bonds	08/12/76
0221	Reduce Speed Limit on Stanford Drive	08/26/76
0222	Limit Land Use Inadequate Underground Water Resources jointly with City of Scottsdale	09/09/76
0223	Construct 32nd Street from Stanford to Lincoln	09/23/76
0224	Robert McCall Designer of Apollo Space Rendezvous Commemorative Stamp Donated $1000 to Library	10/14/76
0225	Disapprove Special Use Permit Camelback Shadows, Inc.	10/28/76
0226	Abandon Drainage Easement Camelhead Estates Unit II Lot 14	12/02/76
0227	Reduce Speed Limit on Invergordon north of MacDonald	01/13/77
0228	No Passing Zone on MacDonald on Designated Areas Only	01/27/77
0229	Condemnation Invergordon between Doubletree and Indian Bend Wash for Drainage and Flood Control	03/10/77
0230	Future Development of Lincoln	03/24/77
0231	Abandon Old & Create New Drainage Easement Vista Rica Lot 7 Murphree-Edmunds, Inc.	04/14/77
0232	Abandon Old & Create New Drainage Easement Cholla Gardens Unit II Lot 12 Dave Hansen Construction, Inc.	04/28/77
0233	Stop Signs at Intersection Invergordon and Doubletree	04/28/77
0234	Increase Speed Limit Indian Bend Scottsdale to Mockingbird	04/28/77

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0235	Decrease Speed Limit Lincoln Drive Scottsdale Road to Tatum	04/28/77
0236	Support Water Resource Projects	05/12/77
0237	Encourage Conservation of Water	05/12/77
0238	Stop Signs at Intersection Royal Palm and 54th Street	05/26/77
0239	Adopt 1977-78 Tentative Budget	06/09/77
0240	Adopt 1977-78 Budget	06/23/77
0241	Abandon Old & Create New Drainage Easement Vista Rica Lot 5 MacFarland	06/23/77
0242	Stop Signs at Intersection Solano and Casa Blanca	06/23/77
0243	Amend Personnel Rules and Regulations	07/28/77
0244	Condemnation Rights-of-Way and Drainage Easements and Improve Lincoln Drive	07/28/77
0245	Federal Funds to Purchase New Police Radar Unit	08/11/77
0246	Authorize Primary Election February 7, 1978	09/22/77
0247	Condemnation Right-of-Way to Improve Berneil and Provide Access to Foothills Estates Unit II Subdivision	09/22/77
0248	Participation Regional Helicopter Patrol Project	01/12/78
0249	Abandon Old & Create New Drainage Easement Vista Rica Lot 15 Murphree-Edmunds, Inc.	01/26/78
0250	General Election Officials	02/23/78
0251	Amend Personnel Rules and Regulations add Auto Mechanic	02/23/78
0252	Condemnation Right-of-Way to Widen Shea Blvd between Tatum and 52nd Street	03/09/78
0253	Improvement District #9 Intent to Issue Bonds	04/13/78
0254	Improvement District #10 Intent Issue Bonds	04/13/78
0255	Support Construction Flood Control & Water Supply System	04/27/78
0256	Improvement District #9 Royal Palm Road	05/25/78
0257	Improvement District #10 Wilkenson Road	05/25/78
0258	Adopt 1978-79 Tentative Budget	06/08/78
0259	Appreciation Camelback Inn re Construction Lincoln Road	06/08/78
0260	Appreciation Dorothy Turnquist	06/22/78
0261	Adopt 1978-79 Budget	06/22/78
0262	Town Participation 25% in Improvement Districts	06/22/78
0263	Condemnation Tatum Blvd Slope Easements Eight Parcels	07/13/78
0264	Improvement District #9 Work Order	07/27/78
0265	Abandon Old & Create New Drainage Easements Camelhead Estates Unit III Lots 14 & 15 John W. Martin Construction	07/27/78
0266	Assessment Diagrams Improvement District #10 Wilkenson	08/24/78
0267	Abandon Non-Vehicular Easement Tatum Shadows Lot 7 Murphree-Edmunds, Inc.	08/24/78
0268	Lakin Gift of Land	09/14/78
0269	Improvement District #10 Assessment Hearing	09/14/78
0270	Stop Signs Installed	09/14/78
0271	Improvement District #10 Approve Assessments	10/12/78

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0272	Stop Signs Installed	10/12/78
0273	Hearing of Intent of Arizona Cabel TV to Increase Rates	10/26/78
0274	Improvement District #10 Issue Bonds	10/26/78
0275	Stop Sign at Joshua Tree and 62nd Street	10/26/78
0276	Authorize Arizona Cable TV Rate Increase	11/09/78
0277	Grant of Roadway Easement by Mr. & Mrs. Findor	11/09/78
0278	Grant of Roadway Easement by Mr. & Mrs. Glass	11/09/78
0279	Roadway Abandonment 56th Street south of Mountain View	12/07/78
0280	Roadway Abandonment on MacDonald Drive Harris & Rubaner Properties	12/07/78
0281	Roadway Abandonment on Cheney Road Mueller Property	12/07/78
0282	Stop Signs Marston Drive at Tatum and at MacDonald	12/07/78
0283	Grant Roadway Easement Har Zion Synagogue	12/07/78
0284	Stop Signs at Intersections onto Mountain View	12/21/78
0285	Amend Personnel rules and Regulations	12/21/78
0286	Stop Signs at Sapphire and Rose Lanes	01/11/79
0287	Abandon Old & Create New Drainage Easement Tatum Canyon Lot 15 Dave Hanson Construction Inc.	01/11/79
0288	Roadway Abandonment 56th Street	01/25/79
0289	Participation Wastewater Treatment Management System	01/25/79
0290	Stop Signs Cactus Wren/Lost Dutchman/Joshua Tree	01/25/79
0291	Establish 911 Emergency Telephone System	03/08/79
0292	Town Participation 25% Fire Hydrant Improvements	03/22/79
0293	Appreciation Howard Ryder	03/22/79
0294	Amend Personnel Rules and Regulations	05/10/79
0295	Adopt 1979-80 Tentative Budget	05/24/79
0296	Right-of-Way Invergordon Culverts	05/24/79
0297	Roadway Abandonment 45th Street Hunt Dedication	06/14/79
0298	Stop Signs Morning Glory/60th Street/Doubletree	06/14/79
0299	Adopt 1979-80 Final Budget	06/28/79
0300	Stop Signs Cactus Wren and Invergordon	08/23/79
0301	Amend Personnel Rules & Regulations Payroll Reclassification	08/23/79
0302	Stop Signs Hogan Drive and Keim	09/13/79
0303	Purchase Property for Tatum Curve	09/13/79
0304	Construction 32nd Street between Stanford & Lincoln	09/13/79
0305	Stop Signs La Colina and 33rd Street	10/11/79
0306	Authorize Primary Election February 19, 1980	10/25/79
0307	Stop Signs Maderos del Cuenta, Arroyo Verde & 46th Street	10/25/79
0308	Rail Passenger Service	11/08/79
0309	Stop Signs 47th Street and Indian Bend	11/08/79
0310	Support Additional Maricopa County Detention Facilities	11/08/79
0311	Support League AZ Cities & Towns regarding Home Rule	11/08/79
0312	Amend Personnel Rules & Regulations Grievance	01/10/80
0313	Amend Personnel Rules & Regulations Payroll Reclassification	02/14/80

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0314	Improvement District #13 Indian Bend Road	03/27/80
0315	Improvement District #12 Berneil Road	04/10/80
0316	Improvement District #13 Indian Bend Curbs & Pavement	05/08/80
0317	Town Manager Settle Condemnation Suits	05/08/80
0318	Youth Employment Services	05/22/80
0319	Indian Bend Wash Encroachment Line	05/22/80
0319A	Commending Rural/Metro Fire Department	05/22/80
0320	Adopt Tentative Budget Fiscal Year 1980-81	06/12/80
0321	Public Safety Personnel Retirement System	06/26/80
0322	Adopt Final Budget Fiscal Year 1980-81	06/26/80
0323	Appreciation Clarence Roeming, Jr.	07/10/80
0324	Camelback Cablevision, Inc.	07/10/80
0325	American Cable TV & AZ Cable TV Failure to Comply	07/10/80
0326	Stop & Yield Signs Numerous Streets	07/10/80
0327	Reward Helen Marston Murder	07/24/80
0328	Redemption Public Safety Personnel Retirement System	08/14/80
0329	Indian Bend Wash ` Plain Encroachment Line Relocation	08/14/80
0330	AZ Department of Health Services Approve Additional Beds	08/28/80
0331	Abandon Drainage Easement Lot 19 Vista Los Arcos	09/11/80
0332	Stop Signs Hummingbird/Cholla/Ironwood	09/11/80
0333	Improvement District #13 Approve Assessment Diagrams	09/25/80
0334	Stop Signs71st, 69th & 65th Streets	10/16/80
0335	Speed Limit 40mph Lincoln West of Tatum	10/30/80
0336	Oppose Salt River Project Construct High Voltage Lines	11/13/80
0337	Adopting General Plan	11/13/80
0338	American Cable TV Extension	12/18/80
0339	Improvement District #14 Casa Blanca Drive	12/18/80
0340	Abandon 56th Street between Doubletree & Mountain View	02/12/81
0341	Condemnation 66th Street between Lincoln & Malcomb	02/12/81
0342	Improvement District #9 Royal Palm & 5th Street Curbs	02/12/81
0343	Purchase of Breath Alcohol Tester	02/26/81
0344	Improvement District #9 Royal Palm Work Order	04/09/81
0345	Improvement District #14 Casa Blanca Work Order	04/09/81
0346	Commend Gus Holka	05/29/81
0347	Improvement District #12 Berneil	06/11/81
0348	Tentative Budget Fiscal Year 1981-82	06/11/81
0349	Adopt Final Budget Fiscal Year 1981-82	06/25/81
0350	Amend Personnel Rules & Regulations Payroll Reclassificaton	06/25/81
0351	Improvement District #9 Approve Assessment Diagrams	06/25/81
0352	Improvement District #14 Approve Assessment Diagrams	06/25/81
0353	Appreciation Louis A. Witzeman	07/23/81
0354	Confirmation of Appointment Judge Sandra Day O'Connor	07/23/81
0355	Improvement District #12 Work Order	07/23/81
0356	Camelback Cable TV Extention of Time	08/13/81

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0357	Authorize Acquisition 4 Parcels Adjacent to Tatum	08/13/81
0358	Stop Signs Bethany Home & 38th Street	08/13/81
0359	Amend Personnel Rules & Regulations Fringe Benefits	08/27/81
0360	Improvement District #9 Issue Bonds	09/24/81
0361	Improvement District #14 Issue Bonds	09/24/81
0362	Authorize Primary Election February 9, 1982	10/29/81
0363	Improvement Dictrict #12 Approve Assessment Diagrams	10/29/81
0364	Requesting Funds AZ Department of Transportation	10/29/81
0365	Supplemental Appropriation Budget Fiscal Year 1981-82	11/12/81
0366	American Cable TV Imposing Fine	12/03/81
0367	Improvement District #12 Assessment Hearing	12/14/81
0368	Improvement District #12 Approve Assessment Diagrams	01/14/82
0369	American Cable TV/AZ Cable TV Tranfer Ownership to Times Mirror Cable TV	02/11/82
0370	IGA/ADOT/Mockingbird Overlay	02/11/82
0371	Speed Limit 40mph Lincoln between 40th & Hillside	02/11/82
0372	Cable TV Oppose House Bills 2015 and 2383	02/25/82
0373	Speed Limit 40mph Lincoln between Tatum & Scottsdale	03/11/82
0374	Improvement District #12 Issue Bonds	03/11/82
0375	Improvement District #15 59th Place	03/11/82
0376	Improvement District #16 Sky Desert & 51st Place	03/11/82
0377	Stop Signs Numerous Streets	03/25/82
0378	Improvement District #16 Work Order	04/08/82
0379	Remove Stop Sign Butler & 49th Street	04/22/82
0380	Request LTAF Funds from ADOT	04/22/82
0381	IGA/Mockingbird Lane Improvements	04/22/82
0382	Appreciation Robert T. McCall	06/10/82
0383	Tentative Budget Fiscal Year 1982-83	06/10/82
0384	Adopt Final Budget Fiscal Year 1982-83	06/24/82
0385	Improvement District #16 Approve Assessment Diagrams	06/24/82
0386	Speed Limit 40mph Tatum Boulevard	07/08/82
0387	Appreciation Douglas A. Jorden	07/08/82
0388	Improvement District #16 Assessment Hearing	08/12/82
0389	Change Date of 11/82 Council Meeting	08/26/82
0390	Improvement District #16 Approve Assessments	09/09/82
0391	Abandon 68th Street Convey to Richard & Linda Mattes	09/09/82
0392	Mummy Mountain Moratorium	09/23/82
0393	Improvement District #16 Issue Bonds	10/28/82
0394	No Parking Quail Run	11/18/82
0395	Appreciation William M. Piatt	12/16/82
0396	Abandon 40th Street near Keim	12/16/82
0397	Abandon Drainage Easement Lot 7 Camelhead Estates II	12/16/82
0398	Improvement District #17 58th Street	01/27/83
0399	Abandon Drainage Easement Lot 15 La Place Unit I	02/24/83

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0400	Improvement District #17 Work Order	02/24/83
0401	Adopt Regulations Governing Commercial Resorts	02/24/83
0402	Stop Sign 57th Street and Mountain View	03/10/83
0403	Improvement District #17 Approve Assessment Diagram	04/14/83
0404	Condemnation Scottsdale Road & Jackrabbit	05/26/83
0405	Appreciation Robert Atherton	04/28/83
0406	Request LTAF Funds from ADOT	06/09/83
0407	Adopt Tentative Budget for Fiscal Year 1983-84	06/09/83
0408	Amend Personnel Rules & Regulations Payroll Reclassification	06/23/83
0409	Adopt Final Budget Fiscal Year 1983-84	06/23/83
0410	Abandon Right-of-Way 64th Place/Rovinski & Mickelson	08/11/83
0411	Improvement District #18 Camino Del Contento	08/11/83
0412	Improvement District #19 Cardinal Drive	08/11/83
0413	Improvement District #19 Work Order	09/22/83
0414	Improvement District #18 Work Order	09/22/83
0415	Authorize Primary Election February 14, 1984	10/13/83
0416	Stop Sign 44th Street at Keim	10/13/83
0417	Improvement District #17 Assessment Hearing	11/10/83
0418	Improvement District #15 59th Place Paving	11/10/83
0419	Improvement District #17 Approve Assessments	12/15/83
0420	Improvement District #15 Work Order	12/15/83
0421	Amend Personnel Rules & Regulations Physical Handicap	01/12/84
0422	Improvement District #18 Approve Assessment Diagrams	01/12/84
0423	Improvement District #19 Approve Assessment Diagrams	01/12/84
0424	Improvement District #15 Work Order	01/12/84
0425	Appreciation Patrick Maloney and Roger Walker, Jr.	01/26/84
0426	Improvement District #18 Assessment Hearing	01/26/84
0427	Improvement District #19 Assessment Hearing	01/26/84
0428	Improvement District #17 Issue Bonds	01/26/84
0429	Improvement District #18 Approve Assessments **(RECINDED)**	02/09/84
0430	Improvement District #19 Approve Assessments **(RECINDED)**	02/09/84
0431	Oppose House Bill 2272 Forbids Prohibiting Time Share	02/09/84
0432	Stop Sign Lauretta & Mockingbird	02/23/84
0433	No Parking Scottsdale Road & Jackrabbit	02/23/84
0434	Authorize General Election March 27, 1984	02/23/84
0435	Improvement District #18 Issue Bonds **(RECINDED)**	03/22/84
0436	Improvement District #19 Issue Bonds **(RECINDED)**	03/22/84
0437	Increase Alarm Monitoring Fee	03/22/84
0438	Accept Deed & Land Grant Mrs. Cheney for Roadway	03/22/84
0439	Improvement District #15 Approve Assessment Diagrams	03/22/84
0440	Staff Appreciation	03/22/84
0441	Indian Bend Wash Remove Encroachment Line	04/12/84
0442	Improvement District #18 Assessment Hearing	04/26/84
0443	Improvement District #19 Assessment Hearing	04/26/84

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0444	Request LTAF Funds from ADOT	05/10/84
0445	Improvement District #18 Approve Assessments	05/24/84
0446	Improvement District #19 Approve Assessments	05/24/84
0447	Adopt Tentative Budget Fiscal Year 1984-1985	05/24/84
0448	Improvement District #15 Assessment Hearing **(RECINDED)**	05/24/84
0449	Improvement District #18 Issue Bonds	06/14/84
0450	Improvement District #19 Issue Bonds	06/14/84
0451	Improvement District #15 Approve Assessments **(RECINDED)**	06/28/84
0452	Improvement District #15 Issue Bonds **(RECINDED)**	06/28/84
0453	Adopt Final Budget Fiscal Year 1984-1985	06/24/84
0454	Flood Plain Management Control Repeal Resolution #126	06/28/84
0455	Amend Personnel Rules & Regulations Overtime Pay	07/12/84
0456	Improvement District #15 Assessment Hearing	07/12/84
0457	Improvement District #15 Approve Assessments	08/09/84
0458	Improvement District #15 Issue Bonds	08/09/84
0459	Amend Personnel Rules & Regulations Overtime Pay	08/09/84
0460	Stop Sign Cheryl Drive & 50th Street	08/23/84
0461	Amend Personnel Rules & Regulations Handicapped	09/13/84
0462	Deny Participation in Mortgage Revenue Bonds	10/11/84
0463	Support for MAG Outer Loop Financing Set Bond Election	10/25/84
0464	Accept 33-Acre Gift on Mummy Mountain	12/06/84
0465	Accept 5-Acre Gift Scenic Easement on Mummy Mountain	12/06/84
0466	Prohibit Parking on Glen Drive	12/06/84
0467	Accept 13.5-Acre Gift from Jerry Atwood/Mummy Mountain	12/20/84
0468	Accept 33-Acre Gift as Mountain Reserve	12/20/84
0469	Abandon Via Los Caballos Cul-de-Sac	01/20/85
0470	Designate Tow-Away Zone Scottsdale Road & Jackrabbit	02/28/85
0471	Amend General Plan Chapter V Street Classifications	03/14/85
0472	Speed Limit to 35 mph on Invergordon Road	04/25/85
0473	Contract Camelback Country Club Estates Homeowners	04/25/85
0474	Request LTAF Funds from ADOT	05/09/85
0475	Transfer Assets from Camelback Cable TV to Times Mirror	05/23/85
0476	Improvement District #22 Kober & Bar Z	05/23/85
0477	Adopt Tentative Budget Fiscal Year 1985-1986	06/13/85
0478	Quit Claim Deed Northern to Weir	06/13/85
0479	Adopt Final Budget Fiscal Year 1985-1986	06/27/85
0480	Improvement District #22 Work Order **(RECINDED)**	06/27/85
0481	IGA City of Phoenix Donation Homeless (CASS)	07/11/85
0482	Traffic Signal Control Maintenance Contract	07/25/85
0483	Improvement District #22 Work Order	08/12/85
0484	Tribute Oscar C. Palmer Sr.	09/12/85
0485	Adopt Policies Water & Sewer	09/12/85
0486	Improvement District #22 Approve Assessment Diagrams	09/26/85
0487	Request Legislation to Control Water Rates	09/26/85

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0488	Support Completion of ACDC Reach IV	11/14/85
0489	IGA City of Phoenix Donation Homeless (CASS)	12/19/85
0490	IGA Maricopa County Indemnification Invergordon Road	12/19/85
0491	Deny Participation in Mortgage Revenue Bonds	12/19/85
0492	Authorized Primary Election February 4, 1986	01/09/86
0493	Appreciation Oscar A. Butt	01/09/86
0494	Amend Personnel Rules & Regulations Various	01/23/86
0495	Improvement District #22 Assessment Hearing	01/23/86
0496	New Fees Alarm Monitoring System	02/13/86
0497	Amend Personnel Rules & Regulations Grievances	02/13/86
0498	Improvement District #22 Approve Assessments	02/27/86
0499	Amend Hillside Building Regulations Section 1	02/27/86
0500	Authorize General Election March 25, 1986	02/27/86
0501	Support Senate Bill 1377 Water Conservation	03/13/86
0502	Temporary 4-Way Stop at MacDonald & Casa Blanca	03/13/86
0503	No Parking South Side of Hummingbird/70th to Scottsdale	03/27/86
0504	Appreciation Silver Anniversary Celebration	04/10/86
0505	Temporary 4-Way Stop Jackrabbit & Casa Blanca	04/24/86
0506	Request LTAF Funds from ADOT	04/24/86
0507	Authorize Investment Town Funds in LGIP	04/24/86
0508	Improvement District #22 Issue Bonds	06/12/86
0509	Yield Sign at 61st Place & Naumann Drive	06/12/86
0510	Roadway Abandonment/Vacating Valparaiso	06/26/86
0511	Tentative Budget Fiscal Year 1986-1987	06/26/86
0512	Adopt Final Budget Fiscal Year 1986-1987	07/24/86
0513	Amend Personnel Rules & Regulations Sick Leave	07/24/86
0514	Improvement District #22 Issue Bonds	08/14/86
0515	Left Turn Arrow Lincoln & Mockingbird	09/11/86
0516	Establish Fees for Work in Right-of-Ways	09/11/86
0517	Stop Signs Numerous Streets	09/11/86
0518	Agreement Traffic Signal Maintenance	09/11/86
0519	Establish Fee for Dog License ($9.00)	10/09/86
0520	Pertains to Squaw Peak Extension & Alternatives	10/23/86
0521	Vacate Right-of-Way 56th Street Convey to Fischer	11/13/86
0522	Appreciation Peter Wainwright	11/13/86
0523	Acquire Land Mummy Mountain	12/04/86
0524	Donation to Mountain Preserve/Yarbrough	12/04/86
0525	Support MAG Interim Carbon Monoxide Plan	12/18/86
0526	Request Options Kept Open Squaw Peak Parkway	12/18/86
0527	Authorizing Defensive Driving School	01/08/87
0528	Donation Conservation Easement Peterson	01/08/87
0529	Declare Public Record Building Codes	02/12/87
0530	Establish Paradise Valley Fee Schedule	02/12/87
0531	Declare Plant a Tree Days 2-6-87 - 4-3-87	02/12/87

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0532	Appreciation Dr. Clarence Roeming, Jr.	02/12/87
0533	Appreciation Herbert P. Donald	02/12/87
0534	Authorize Stop Signs 47th & Indian Bend Road	02/26/87
0535	Vacate Right-of-Way 60th Street/Catus Wren Carl Everett	02/26/87
0536	IGA Maricopa County Traffic Signals	02/26/87
0537	Declare Public Record Storm Drain Design Manual	03/12/87
0538	Declare Public Record Town Tax Code	03/12/87
0539	Left Turn Arrow at Lincoln & Mockingbird	03/12/87
0540	Urge ADOT Consider Traffic Routes NE Phoenix	03/12/87
0541	Support Senate Bill 1447 Water Rate Surcharges	03/26/87
0542	Request LTAF Funds from ADOT	04/23/87
0543	Adopt Loss Control Policy	05/14/87
0544	Adopt MAG 1987 Carbon Monoxide & Ozone Plan	07/09/87
0545	Authorize Contract with Scottsdale Chamber of Commerce	07/09/87
0546	Tentative Budget Fiscal Year 1987-1988	07/09/87
0547	IGA City of Phoenix Computer Aided Police Records Index	07/23/87
0548	Adopt Final Budget Fiscal Year 1987-1988	07/23/87
0549	IGA City of Scottsdale Sewer Agreement	08/27/87
0550	Authorize Contract Frontier Control Products Alarm System	08/27/87
0551	Authorize Contract Traffic Monitoring Tech Photo Radar	08/27/87
0552	Amend Fee Schedule Increase Sewer Tap Fees	09/10/87
0553	Authorize Primary Election February 9, 1988	10/08/87
0554	Endorse Spay & Neuter Proposal Maricopa County	10/08/87
0555	Improvement District #22 Modify Assessment No. 18	10/22/87
0556	Designate APS Franchise Election Date	11/12/87
0557	Special APS Franchise Election January 19, 1988	12/17/87
0558	Notice of Primary Election February 9, 1988	12/17/87
0559	No Left Turn Sign Tatum & Desert Fairways	12/17/87
0560	4-Way Stop Northern & Mockingbird	02/11/88
0561	Revoke Special Use Permit Metroplex/Wen-Clay & Valparaiso	02/25/88
0562	No Right Turn Tatum & Indian Bend	02/25/88
0563	Right-of-Way Eastments Tatum & Desert Jewel	03/10/88
0564	Purchase 7 Parcels Tatum & Desert Jewel	03/10/88
0565	Amend Tax Code Capter 4A	03/24/88
0566	Authorize IGA Maricopa County Use County Jail Facilities	04/14/88
0567	Adopt MAG 1988 Particulate Plan for PM-10	04/14/88
0568	IGA City of Phoenix Reconstruct Tatum	04/14/88
0569	IGA Phoenix/Maricopa Reconstruct Tatum at Macdonald	04/28/88
0570	Stop Signs 69th Place & Hummingbird and Indian Bend	05/12/88
0571	ADOT Assistance Funds	06/09/88
0572	Cable License Transfer from American to Rio Salado Cable	06/09/88
0573	Vacate Right-of-Way of 62nd Street/Mockingbird/Merrill	06/23/88
0574	Correct Tables in the General Plan	07/14/88
0575	Amend Personnel Rules & Regulations Engineering Technician	07/14/88

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0576	Tentative Budget Fiscal Year 1988-89	07/14/88
0577	Town Participation Undergrounding & Other Improvements	07/28/88
0578	Adopt Final budget Fiscal Year 1988-89	08/11/88
0579	Vacade Elmaro Circle Title to Homeowners Association	09/29/88
0580	Amend Fee Schedule Section 2.2 P&Z Application Fees	09/29/88
0581	Honoring Dr. George R. Pettit for Pioneer Chemist Award	09/29/88
0582	Reduce Speed 25mph Mockingbird Lane Construction Zone	10/27/88
0583	Support RPTA Transit 2020 Plan	11/10/88
0584	IGA Maricopa County Annex Macdonald Drive	12/01/88
0585	Right-of-Way Easements on Tatum Boulevard	12/15/88
0586	Vacate La Place Du Sommet to Homeowners Association	12/15/88
0587	Written Documentation Employee Welfare Benefit Plans	01/12/89
0588	Reduce Speed 25mph Tatum Construction Zone	01/26/89
0589	Stop Signs at 52nd & 56th and Doubletree Ranch Road	02/09/89
0590	Lozier Participation Lifesavers/7 Traffic Safety Conference	02/09/89
0591	IGA City of Phoenix Use Police Driving Track	03/09/89
0592	Donation 41 Acres Camelback Mountain Preserve	03/09/89
0593	Stop Signs & Speed Bumps on 54th Street	03/09/89
0594	Stop Signs 49th Street/Numerous Streets	03/23/89
0595	Speed Bumps 51st Place	03/23/89
0596	Stop Signs Arroyo Verde & 47th Street	04/13/89
0597	ADOT Distribution of LTAF	04/13/89
0598	Sanitary Sewer Clearview Edition	04/13/89
0599	Radio Service to Police Department from Thompson Peak	04/27/89
0600	Drainage Easement Camelback Country Estates Unit I	05/11/89
0601	Street Markings Permanent	05/25/89
0602	ICMA Retirement Deferred Compensation	05/25/89
0603	Tentative Budget Fiscal Year 1989-1990	06/22/89
0604	Personnel Handbook Public Record	07/13/89
0605	Right-of-Way Abandonment in Finisterre	07/13/89
0606	Donation 6 Acres Mountain Preserve Trecker	07/13/89
0607	Adopt Final Budget 1989-1990	07/13/89
0608	Establish Cassady/Harold Underground Conversion Area	07/13/89
0609	Acquire 6511 East Lincoln	07/27/89
0610	IGA Maricopa County Jail Fees	09/14/89
0611	Authorize Merrill Lynch Account	09/14/89
0612	Contract with Continental Mobile Communications	09/14/89
0613	Contract Renewal Data General Service Alarm System	09/14/89
0614	Vacate Tatum Right-of-Way Reserve Easement	09/14/89
0615	Times Mirror Cable $5,000 Fine	09/14/89
0616	Designate Primary Election Date February 6, 1990	09/28/89
0617	Amend 1989 Policy Statement Section III	09/28/89
0618	Stop Signs 52nd, 56th & Doubletree Ranch Road	10/12/89
0619	Acquire Easement for Sanitary Sewer	10/26/89

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0620	Article XXII Zoning Ordinance Hillside Building	11/09/89
0621	Stop Signs Casa Blanca & Solano Drive	11/09/89
0622	Stop Signs 57th, 58th & Joshua Tree/Numerous	12/07/89
0623	IGA Maricopa County Mutual Aid	12/07/89
0624	IGA City of Scottsdale Homeless Facility	12/07/89
0625	ACDC Reach 4	12/07/89
0626	Notice of Primary Election February 6, 1990	12/21/89
0627	IGA User Accountability Task Force	02/08/90
0628	Urge Governor & State Legislature Balance Budget	02/08/90
0629	Adopt Results of Primary Election February 6, 1990	02/15/90
0630	Notice of General Election March 27, 1990	02/22/90
0631	Stop Signs Mockingbird Lane & 56th Street	02/22/90
0632	ACDC Reach 4 Impact of Project	02/22/90
0633	Establish Goldman Underground Conversion Area	03/08/90
0634	Establish Jones Underground Conversion Area	03/15/90
0635	Declare The Paradise Valley Cable Code Public Record	03/22/90
0636	Settlement with F.O. & Deborah R. Buck	03/22/90
0637	Results of General Election March 27, 1990	04/05/90
0638	Establish Procedures Hazardous Materials	04/26/90
0639	Request ADOT for LTAF Funds	04/26/90
0640	Establish Brown Underground Conversion Area	05/24/90
0641	Endorse Heritage Fund Initiative	05/24/90
0642	The 1990 Amendments to the Town Tax Code	06/14/90
0643	Mockingbird, Indian Bend 25 mph	06/14/90
0644	Meernik Agreement	06/28/90
0645	Tentative Budget FY 1990-1991	06/28/90
0646	Town’s Policy for Chaparral Road	06/28/90
0647	Amend Salary Ranges/Job Descriptions	07/12/90
0648	IGA Phoenix Tatum/Caida del Sol/Sunset Drive	07/12/90
0649	Amend Sewer User Fees	07/12/90
0650	Adopt Final Budget FY 1990-1991	07/12/90
0651	DENIED	08/23/90
0652	Sewer Buy-Back/Morning Glory Estates	08/09/90
0653	54th Street Roadway Abandonment/Hann	08/23/90
0654	Stop Signs on Indian Bend/Traffic Circle	09/13/90
0655	Stop Signs Desert Fairways Drive/Camelback Inn Entrance	09/27/90
0656	Cellularm Agreement	11/08/90
0657	IGA Department of Revenue Tax Collection	12/06/90
0658	Jackrabbit Road Abandonment	01/22/91
0659	30 MPH on Mockingbird Between McDonald & Lincoln	12/06/90
0660	County Free Library District	01/10/91
0661	IGA with ADOT MacDonald Improvements	01/24/91
0662	Abandonment 55th Place North of Palo Verde	02/14/91
0663	Abandonment 60th Street Between Lincoln & Indian Bend	02/14/91

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0664	Enhanced Notification Procedure	02/14/91
0665	Stop Signs Cactus Wren Road & 64th Street	02/14/91
0666	Stop Signs Cactus Wren Road & 62nd Place	02/14/91
0667	Federal Fund ACDC: Town 10%	02/28/91
0668	GOHS “408 Grant” Funding	03/14/91
0669	Muin M. Kalia Appreciation	03/28/91
0670	No Parking Signs MacDonald	04/11/91
0671	25 mph MacDonald Construction	04/25/91
0672	1994 World Cup Soccer Support	04/25/91
0673	No Parking SignsRovey & 51st Street	05/09/91
0674	Requesting LTAF for 1992	05/23/91
0675	Transfer Funds 1990-1991 Budget	06/27/91
0676	IGA County/Elections Support	06/27/91
0677	Tentative Budget FY 1991-1992	06/27/91
0678	Pretreatment with Phoenix and Scottsdale	07/25/91
0679	Special Election - Camelback Water	08/08/91
0680	New Building Permit Fees	07/25/91
0681	IGA To Purchase From State Contracts	07/25/91
0682	Final Budget FY 1991-1992	07/25/91
0683	IGA DPS Media Alert System	08/08/91
0684	IGA With Scottsdale Traffic Signal Maintenance	09/12/91
0685	Particulate Plan for PM-10	09/26/91
0686	Appointing Election Officials	09/26/91
0687	Appreciation Jean Reed Roberts	09/26/91
0688	Appreciation Al Clark	09/26/91
0689	IGA With County Regarding NPDES	10/10/91
0690	Calling Town Council Primary Election	10/10/91
0691	Commendation Officer Gary Slowik	10/10/91
0692	Commendation Zoning Administrator Dan McNabb	10/10/91
0693	Canvass of Special Election Held 10/08/91	10/17/91
0694	Amending Personnel Rules/Workmen’s Compensation	10/29/91
0695	Property Acquisition/6325 Invergordon	10/29/91
0696	Appreciation for Camelback Inn Donation	11/14/91
0697	Establishing Poll Paces & Voting District	11/14/91
0698	40 mph on MacDonald Between Tatum & 44th Street	12/05/91
0699	IGA with Scottsdale/Deannexation Bowers	12/05/91
0700	IGA County ACDC Cost Allocation	12/09/91
0701	IGA Scottsdale Traffic Signal Maintenance	12/19/91
0702	Mayor, Manager, Clerk, Signatories Payroll	12/19/91
0703	Appreciation Daniel F. Norton	12/19/91
0704	Appointing Election Officials	01/09/92
0705	Acquire Property At 6341 N. Invergordon	01/09/92
0706	Investment Local Government Investment Pool	02/27/92
0707	Adopting Results of Primary Election	02/20/92

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0708	Appointment of Election Board	03/12/92
0709	Establishing Work Cycle for Dispatchers	03/12/92
0710	No Left Turns on Invergordon/Bar-Z Lane	03/12/92
0711	McCormick Railroad Park Grant	03/12/92
0712	Requesting LTAF Funds	03/26/92
0713	Oppose Removal of Light at Scottsdale and Vista	03/26/92
0714	Vacating Horsehoe Road	03/26/92
0715	Cheney Estates Vacate Roadways	03/26/92
0716	Quit Claim Deed Pue Rancho Del Jennings	03/26/92
0717	Quit Claim North Ft/Cheney Estates	03/26/92
0718	Results of General Election 03/21/92	04/09/92
0719	Authorize New Check Signers	04/09/92
0720	Appreciation Lucille Mezzatesta	04/09/92
0721	Authorize Contract With Jones Studio	04/09/92
0722	Restate Town Policy Regarding Harassment	04/09/92
0723	Heritage Trails Funds/ACDC Wildlife	05/28/92
0724	Appreciation Onno Prinsze/Retirement	05/28/92
0725	Amending Personnel Handbook/Work Hours	06/11/92
0726	No Parking Signs on 51st Place	06/11/92
0727	Transfer Funds/Budget FY 1991-1992	06/25/92
0728	Tentative Budget FY 1992-1993	06/25/92
0729	Scottsdale Chamber Bed Tax	07/23/92
0730	Oposition to Toll on Squaw Peak Parkway	07/23/92
0731	Amendment Sewer User Fees	07/23/92
0732	Final Budget Fiscal Year 1992-1993	07/23/92
0733	Contract/US Tanks/Fuel Tank Removal	07/23/92
0734	Grievance Procedure ADA	08/13/92
0735	IGA/County/Regional Radio Network	09/10/92
0736	SRP License for ACDC Landscaping	09/24/92
0737	Speed Limit 25 mph on 56th Street	09/24/92
0738	Volunteer Award Jo Ann Armstrong	10/08/92
0739	Pima Freeway Outer Loop/Toll Road	10/08/92
0740	Fish & Game Habitat Restoration	11/12/92
0741	Appreciation/ Rosemary Utz	12/17/92
0742	Appreciation Fat Alberts	12/17/92
0743	Land Donation Mountain Preserve	12/17/92
0744	Police Department 10 Hour Days	02/11/93
0745	Hartford Specialty Company Agreement	02/11/93
0746	6331 N. Invergordon/Property Acquisition	02/25/93
0747	IGA/Maricopa County Election Support	02/25/93
0748	Administrative Services Agreement ICMA Retirement	03/11/93
0749	Request Local Transport Assist Funds	03/25/93
0750	IGA w/ Scottsdale to Provide Traffic Signal Maintenance	03/25/93
0751	Vacate 65th Street, Horsehoe Road and 64th Place	04/08/93

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0752	Adopt 1991 Uniform Building Code	04/08/93
0753	Authorizing Mayor to Sign with Bank One Cap. Corp	04/08/93
0754	Appreciation Lester Penterman	04/08/93
0755	Appreciation Richard B. Kelley	04/08/93
0756	Appreciation John Propstra	04/08/93
0757	Appreciation All Magistrates	04/08/93
0758	No Right Turns/Mountain View	05/13/93
0759	Appreciation to Jim Porter	05/13/93
0760	Drainage Easement Lot 8 Camelhead Estates	06/10/93
0761	Vacate Vista Drive	06/10/93
0762	MacDonald Step Down Spped 35 MPH	06/10/93
0763	Transfer Funds 1992-1993 Budget	06/24/93
0764	Abandon Drainage Easement Foldman Ranch	06/24/93
0765	Appreciation George Hudman	06/24/93
0766	Amend Sewer User Fees	06/24/93
0767	IGA Scottsdale/Resident on Sewer	07/08/93
0768	Doubletree Construction 25 MPH	07/08/93
0769	Tentative Budget 1993-1994	07/08/93
0770	Release Between Town and Kallas	07/08/93
0771	Adopt Revision to the MAG 1991 Particulate Plan	07/22/93
0772	Special Election CPAF Notice	07/22/93
0773	State Purchase Agreement/IGA	08/26/93
0774	County Purchase Agreement/IGA	08/26/93
0775	Scottsdale Chamber Agreement	08/26/93
0776	Adopting Final Budget 1993-1994	08/26/93
0777	Establish Polling Places 11/02/93 Election	08/26/93
0778	Carbon Monoxide and Ozone Plan	09/09/93
0779	Appreciation to Tony George/20 Years	09/09/93
0780	Proposition 100/November 2 Election	09/09/93
0781	Appoint Election Board 11/02/93 Election	09/23/93
0782	Data General Contract Addendum	09/23/93
0783	Rescind Resolution 780/New Proposition	09/23/93
0784	Call for Primary Election 02/08/94	10/14/93
0785	Vacate Portion of Culdesac on Bar Z Lane	10/14/93
0786	Authorize Doc. for Excise Tax Back Bonds	10/14/93
0787	Underground Agreement With US West	10/28/93
0788	Results of Special Election 11/02/93	10/09/93
0789	Revised Personnel Handbook	11/18/93
0790	IGA Scottsdale Utilize Crime Lab	11/18/93
0791	Notice of Primary & General Elections	12/16/93
0792	Vacate A Portion of Vista Drive	12/16/93
0793	Appointment of 02/08/94 Election Board	01/13/94
0794	Vacate a Portion of 44th and 45th Streets	01/13/94
0795	Authorize Ollinger as Additional Check Signer	01/27/94

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0796	Fire Lane Town Driveway	02/10/94
0797	Interim Town Manager Contract	02/10/94
0798	Results 02/08/94 Primary Election	02/15/94
0799	Contract Planner/Neal Pascoe	02/24/94
0800	Stop Signs/Casa Blanca & Malcomb	02/24/94
0801	Endorse Homeless Task Force	02/24/94
0802	Richard Andrews Settlement Agreement	02/24/94
0803	Ward Howell Search Firm Agreement	02/24/94
0804	Abandon Portion 7002 E. San Miguel	02/24/94
0805	Abandon Portion 4717 E. Moonlight Way	02/24/94
0806	Four-Way Stop Sign Cheney/70th Street	03/10/94
0807	Master Repurchase Agreement W/Bank of America	04/14/94
0808	New Check Signers	04/14/94
0809	Samaritan Wellness Program	04/14/94
0810	Request LTAF Funds	04/28/94
0811	Increase Sewer Fees	05/26/94
0812	Maricopa Regional Network	06/09/94
0813	New Undergrounding Policy	06/09/94
0814	Stop Signs Fanol/71st Street	06/09/94
0815	Transfer Funds 1993-1994 Budget	06/23/94
0816	Adopt Regional Value Statement	06/23/94
0817	Memo of Understanding/Hermosa Inn	06/23/94
0818	Tentative Budget 1994-1995	07/14/94
0819	Family Medical Leave Policy	07/28/94
0820	Abandon Drainage Easement/4861 E. Marston	08/25/94
0821	Vacate Portion 40th Street/Keim Drive	08/25/94
0822	Final Budget Fiscal Year 1994-1995	08/25/94
0823	No Parking Solano/San Miguel	08/25/94
0824	Locations for PostingPublic Notices	09/08/94
0825	Amend General Plan/Local Streets	09/08/94
0826	Appreciation to Vik Jackson	09/22/94
0827	Authorizing Manger & Clerk Deposit/Withdraw LGIP	10/13/94
0828	Authorizing Manager as Signatory on Bank Accounts	10/13/94
0829	EstablishingUnderground Oversight Committee	10/13/94
0830	Abandon a Portion of Cheney Drive	10/27/94
0831	Northern Trust Securities Account	10/27/94
0832	Authorize Berneil Water Company Apply For SUP	11/10/94
0833	No Parking on Tatum at Arroyo Verde	12/01/94
0834	1995 Tax Code Amendments	12/15/94
0835	Revising Fee Schedule	12/15/94
0836	Deny Part. Qualified Mortgage Credit Cert. Program	12/15/94
0837	Vacating Cheney Drive to Abutting Property Owners	02/09/95
0838	Appreciation - William E. Brines	02/09/95
0839	Condemnation - Malcomb Drive	01/26/95

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0840	Appreciation - Donald D. Lozier	02/23/95
0841	Deny Participation/Mortgage Program	02/09/95
0842	Rules & Procedures for Contract Claims	02/09/95
0843	Endorsing County Atty's Campaign Against Graffiti	04/13/95
0844	Abandonment of Rose Lane	04/13/95
0845	Request Local Transportation Assistance Funds ARS 28-2602	04/27/95
0846	Participate AZ Historical Society/Donating $6,000	04/27/95
0847	Increase Sewer User Fees/Fee Schedule Section 1.3.2	06/01/95
0848	No Parking/Stopping/Loading on 56th Street/Cherokee School	05/25/95
0849	No Parking Signs on 51st Place/Lincoln to Macdonald	05/25/95
0850	No Parking on Tomahawk Trail	06/08/95
0851	Participate/Phoenix Anti-Graffiti Hotline/Donating $2,500	06/08/95
0852	Transfer Funds/1994-95 Budget	06/22/95
0853	Tentative Budget Fiscal Year 1995-96	06/22/95
0854	IGA Purchase from State Contracts	07/13/95
0855	Adopt Final Budget Fiscal Year 1995-96	07/27/95
0856	Deny Participation Pima County Mortgage Program	09/07/95
0857	Vacating Claremont St./Marlette Ave./42nd St. **WITHDRAWN**	09/28/95
0858	Vacating Ridgeview Drive **DENIED**	09/28/95
0859	Adopting Investment Policy	09/28/95
0860	Adopting Policy Funding CPAF	09/28/95
0861	No Left Turn Sign at Shea & 52nd Street	11/09/95
0862	No Parking Sunrise to Sunset Chaparral/Wilkinson/Invergordon	11/09/95
0863	IGA Scottsdale Road Widening	12/21/95
0864	IGA Tempe Super Bowl Support	01/11/96
0865	Appoint Election Board for 2/6/96 Primary	01/25/96
0866	No Parking Signs Valle Vista/Marston/Macdonald/etc	01/25/96
0867	IGA Scottsdale Road Widening	01/25/96
0868	Deny Participation with Pima County Mortgage Credit	02/08/96
0869	February 6, 1996 Primary Election Results	02/15/96
0870	Abandon Mountain View Road East of 53rd Place	05/23/96
0871	No Parking Signs Sunrise to Sunset on 52nd Place	03/14/96
0872	No Parking Sigs Cul-de-sac 5500 Block east San Miguel	03/14/96
0873	IGA County Flood Control/Doubletree	03/14/96
0874	Deny Participation Pima County Mortgage Program	03/28/96
0875	Transfer Funds from 1995-96 Budget	03/28/96
0876	Traffic Safety Grant Request **DENIED**	03/28/96
0877	Authorize New Check Signers	04/11/96
0878	No Parking Signs on 52nd Place/Palo Verde	04/25/96
0879	Amend Res. 873 Doubletree Drainage Project	04/25/96
0880	Change Orders for Town Hall Remodel	04/25/96
0881	Abandon Quail Run	05/23/96
0882	Amend Sewer User Fees	05/30/96
0883	IGA Scottsdale/Traffic Signal Maintenance	07/03/96

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0884	Revise Fee Schedule	07/25/96
0885	Tentative Budget FY 1996/97	07/11/96
0886	Speed Humps on Sanna **DENIED**	07/11/96
0887	Final Budget FY 1996/97	08/29/96
0888	Master Lease Purchase Agreement	07/25/96
0889	Telecommunication Facilities Moratorium	07/18/96
0890	Amend Fee Schedule	09/26/96
0891	Posting Public Notices	12/19/96
0892	Payroll Deductions United Way	11/14/96
0893		
0894	IGA Scottsdale Forensic Lab Services	12/19/96
0895	Extend Telecommunications Moratorium	01/09/97
0896	Not Used	
0897	Public Record 1996 Tax Code Amendments	02/13/97
0898	Not Used	
0899	ADA Guidelines	03/27/97
0900	IGA County Elections	04/10/97
0901	Mary Ann Brines Exceptional Performance Award Program	07/24/97
0902	IGA Phoenix Parking Invergordon/64th Street	07/24/97
0903	Transfer Funds 1996-97 Budget	06/12/97
0904	Increase Sewer User Fees	05/22/97
0905	Adopting General Plan	05/22/97
0906	Authorizing Property Acquisition	05/15/97
0907	Tentative Budget FY 1997-98	06/12/97
0908	Speed Limits During Road Construction	05/15/97
0909	Arizona Municipal Workers Compensation Pool	06/26/97
0910	Arizona Municipal Workers Compensation Pool	06/26/97
0911	ADA Coordinator	06/25/98
0912	Adopt Budget FY 1997-98	07/24/97
0913	Air Quality Measures	10/09/97
0914	Revising Fee Schedule	08/29/97
0915	Master Lease Purchase Agreement	07/24/97
0916	Not Approved	
0917	Traffic Control Improvements	10/09/97
0918	Vacating Berneil Street	10/09/97
0919	Acquiring Real Property	10/09/97
0920	Appreciation Interim Town Manager Peter Van Haren	10/09/97
0921	Authorizing Town Manager Signatory Bank of America	10/23/97
0922	Not Used	
0923	Establish Mummy Mountain Preserve Trust	11/06/97
0924	Landscaping/Beautification Special Revenue Fund	11/13/97
0925	Vacating Berneil Street, Supersedes Res. #918	12/18/97
0926	Arizona Municipal Risk Retention Pool	12/18/97
0927	Abandoning Utility Easements Club Estates	01/08/98

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0928	Traffic Control 35 Claremont/Mariette - TABLED	
0929	Desert Jewel Vacating - WITHDRAWN	
0930	Appointing Election Board Primary March 10, 1998	02/12/98
0931	Authorization to Acquire Donahoe Property	02/12/98
0932	Personal Wireless Service Facilities Site Locations	02/26/98
0933	Amending Sewer Requirements - Withdrawn	
0934	Canvass of 1998 Primary Election	03/19/98
0935	Appointing Election Board General May 19, 1998	04/23/98
0936	Master Lease Purchase Agreement	04/23/98
0937	1998 Tax Code Public Record	04/06/98
0938	Authorize Transfer of Funds 97-98 Budget	06/04/98
0939	Permit Procedure	07/09/98
0940	Signatories	06/11/98
0941	Adopting Results of General Election, May 19, 1998	06/04/98
0942	Preliminary Budget	06/11/98
0943	Final Budget	07/09/98
0944	Master Lease Purchase	07/09/98
0945	Air Quality Measure	07/23/98
0946	Grant Special Use Permit	08/13/98
0947	Bond Authorization	10/08/98
0948	Scottsdale IGA for Sewer	10/08/98
0949	Revising Fee Schedule	11/12/98
0950	D.T. Clerk Deposit Box Access - TABLED	11/12/98
0951	Scottsdale IGA for Sewer Phase II	11/30/98
0952	Municipal Property Corporation Bonds	12/10/98
0953	Amending Fee Schedule - Sewer	12/17/98
0954	Multi-purpose Facilities District - TABLED	
0955	Board Members of MFD - TABLED	
0956	Corporation Commission Rehearing Area Code Change	01/07/99
0957	Declaring Use Tax as Public Record	01/28/99
0958	Appreciation to Maricopa County Board of Supervisors	02/11/99
0959	Amending Fee Schedule	02/25/99
0960	Amend Res. 959 Fee Schedule Corrections	03/11/99
0961	Amending Fee Schedule Non-resident Sewer	03/25/99
0962	Abandoning Public Utility Old Adobe Subdivision	04/08/99
0963	Donahoe Property Dismissal	04/08/99
0964	Repealing Res. 577 Sewer Extension	04/08/99
0965	401(a) Authorization	05/13/99
0966	Council Rules and Procedures	06/10/99
0967	Council Terms of Office Classification	05/27/99
0968	Amending Fee Schedule - Sewer	05/27/99
0969	Tentative Budget 1999-2000	05/27/99
0970	Transfer of Funds 1999-2000 Budget	05/27/99
0971	Master Lease Purchase	07/22/99

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
0972	Transfer of Funds 1998-1999 Budget	06/24/99
0973	1999-2000 Final Budget	06/24/99
0974	Intent to Reimburse Certain Capital Expenditures	07/22/99
0975	Amending Fee Schedule - Plan Review Fees	09/09/99
0976	Authorize Town Clerk to Conduct Year 2000 Elections	10/14/99
0977	IGA with City of Scottsdale for Forensic Science Services	10/14/99
0978	Amend Tax Code	11/18/99
0979	Amend Fee Schedule	11/18/99
0980	Question Voters March 14 Election Allow Sale of Town Land	11/18/99
0981	Lenore LancasterDesignated Emergency Management Filing Agent	11/18/99
0982	Amending Fee Schedule - Sewer Development Fees	12/16/99
0983	Authorizing Stop Sign on 53rd Place South of Mt. View Rd	01/13/00
0984	Amending Fee Schedule – Sewer Development Fees	01/27/00
0985	Acquisition of Property at Lincoln Dr. and Tatum Blvd	03/09/00
0986	Intent to Reimburse Certain Capital Expenditures	03/09/00
0987	Canvass of Primary Election March 2000	03/23/00
0988	Authorization to Submit Project to AZ 2000 Highway Safety Plan	03/23/00
989	Withdrawn (no parking signs Jackrabbit Rd.)	
990	Bank of America Lease Puchase Agreement	04/13/00
991	IGA with County Flood Control and Phoenix for DTRR	04/13/00
992	Encouraging Energy Conservation	04/27/00
993	Canvass of General Election May 2000	05/25/00
994	Adoption of Preliminary Budget FY 2000-01	05/25/00
995	Establishing Procedures for Staggered 4-year Terms	05/25/00
996	Acceptance of Property (30ft Strip of Land from Judson)	05/25/00
997	Abandon Right-of-Way on Indian Bend Rd. to Judson	05/25/00
998	Authorizing Transfer of Funds for FY 1999-00 Budget	06/08/00
999	Authorizing Signatories on Bank of America Accounts	06/08/00
1000	Requesting IGA Hearing Before Board of Supervisors	05/25/00
1001	Authorizing Master Lease Purchase Agreement	07/13/00
1002	Intent to Reimburse Certain Capital Expenditures	07/13/00
1003	Adoption of Final Budget FY 2000-01	07/13/00
1004	Proposing a Permanent Adjustment to Base Expenditure Limit	07/27/00
1005	Authorizing Access to Safety Deposit Box	08/24/00
1006	Amending Fee Schedule – Victims Rights	11/16/00
1007	Recognition of Philip and Barbara vonAmmon	11/16/00
1008	Canvass of Special Election November 2000	11/16/00
1009	Declaring 68th St. Alignment as Non-motorized Easement	01/11/01
1010	Conditional Rescission of McMasters Private Road SUP	
1011	Amending Fee Schedule – Court Administrative Fees	03/08/01
1012	ADOT IGA – Tatum McDonald Intersection Improvements	03/22/01
1013	General Plan Public Participation	06/28/01
1014	Requesting IGA Hearing Before Board of Supervisors	05/10/01

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
1015	Authorizing Transfer of Funds for FY 2000-01	06/28/01
1016	Intent to Reimburse Certain Capital Items	06/28/01
1017	Adoption of Preliminary Budget FY 2001-02	06/28/01
1018	Adopt Final Budget 2001-2002	07/12/01
1019	Amend Council Rules and Procedures	07/12/01
1020	Authorize All-Mail Ballot Elections	09/13/01
1021	Declare Appendix IV of Model City Tax Code by Reference	0913/01
1022	Addition of Judges & Council to Workers Compensation Plan	09/13/01
1023	Designate Lincoln Dr. as Subject to Provisions of Ord. 518	09/13/01
932A	Identify Possible Site Locations for Personal Wireless Facilities	09/20/01
1024	2001 Amendments to Tax Code	11/15/01
1025	Adoption of Master Fee Schedule	06/12/01
1026	Adoption of Storm Water Management Program	01/10/02
1027	Adoption of Modification to Doubletree Ranch Road IGA	01/10/02
1028	Adoption of Results of Primary Election of March 12, 2002	03/21/02
1029	Adoption or 30 MPH Speed Limit on Doubletree Ranch Rd.	05/09/02
1030	Authorization for Property Acquisition & Execution of Leases	06/06/02
1031	Authorization of Final Settlement of Donahoe Case, Payment for Real Property and Acceptance of Conservation Easement	06/06/02
1032	Adoption of Tentative Budget for FY 2002-03	06/27/02
1033	Adoption of Final Budget for FY 2002-03	07/11/02
1034	Authorization for Transfer of Budget Funds	06/27/02
1035	Authorization for Master Lease Purchase Agreement	06/27/02
1036	Intent to Reimburse Certain Capital Expenditures	06/27/02
1037	Amending the 2002 Master Fee Schedule	09/26/02
1038	Adoption of 2003 Master Fee Schedule	11/07/02
1039	Authorizing Special Project Account for 69kv Undergrouding	12/05/02
1040	Adoption of the 2003 General Plan	11/21/02
1041	Authorization to Include Police Aides in Workers Comp Plan	03/13/03
1042	Expressing Support for the Arizona Office of Tourism	02/27/03
1043	Declaring Article XXII a Public Record	10/09/03
1044	Declaring Chapter 6 Subdivisions a Public Record	10/09/03
1045	Canvass of the 2003 General Plan Election	03/20/03
1046	Amending the 2003 Master Fee Schedule	04/24/03
1047	Declaring 2002 Tax Code Amendments a Public Record	04/24/03
1048	Amending the 2003 Master Fee Schedule	05/22/03
1049	Authorizing Acquisition of Real Property	06/26/03
1050	Declaring Article XXV a Public Record	01/22/04
1051	Authorization of Transfer of Budget Funds	06/05/03
1052	Adoption of Tentative Budget for FY 2003-04	06/05/03
1053	Authorization an IGA Regarding the NCFE Loss	06/05/03
1054	Adoption of Final Budget for FY 2003-04	06/26/03
1055	Certification of Baseline Court Collections	09/11/03
1056	Authorization to enter into a closing agreement with CoxCom	09/25/03

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
1057	Certification of Court Collections for 3rd Quarter 2003	10/09/03
1058	Amending the Master Fee Schedule – Sewer User Fees	10/23/03
1059	Authorization to Apply for Heritage Fund Grant	11/06/03
1060	Authorization to Use Mall Ballots	11/06/03
1061	Authorization to Apply for Homeland Security Grant Funds	11/06/03
1062	Certification of Court Collections for 4th Quarter 2003	01/22/04
1063	2004 Master Fee Schedule	02/26/04
1064	Reward for the Arrest of the "Rock Burglar"	02/12/04
1065	IGA with ADOT for Tatum / McDonald Improvments	02/26/04
1066	IGA with ADOT for Lincoln Drive Sidewalks	03/11/04
1067	Canvass of the 2004 Primary Election	03/18/04
1068	Certification of Court Collections for 1st Quarter 2004	04/08/04
1069	IGA with Other Cities for Mutual Defense to Tax Refund Claim	05/13/04
1070	Canvassof 2004 General Election	05/27/04
1071	Authorization of Transfer of Budget Funds	06/24/04
1072	Authorization of Master Lease Purchase Agreement	06/24/04
1073	Authorization of Intent to Reimburse through Capital Lease	06/24/04
1074	Adoption of Preliminary Budget for FY 04-05	06/24/04
1075	Adoption of Final Budget for FY 04-05	07/08/04
1076	Amending 2004 Master Fee Schedule	07/08/04
1077	Certification of Court Collections for 2nd Quarter 2004	07/08/04
1078	Adoption of Hazard Mitigation Plan	07/22/04
1079	Authorization to Apply for Growing Smarter Grant	09/09/04
1080	Authorization to Apply for Grant Funds from Gila River	09/09/04
1081	Authorization to Apply for Grant Funds from Salt River Pima	09/09/04
1082	Authorization to Apply for Grant Funds from Fort McDowell	09/09/04
1083	Authorization to Apply for Grant Funds from Ak-Chin	09/09/04
1084	Implement Measures Pursuant to PM-10 Plan	09/23/04
1085	Authorization to Remove Stop Sign at Indian Bend Circle	11/04/04
1086	Amend Sewer User Fee	10/28/04
1087	Authorizing Development Agreement with PV Resort Assoc.	11/04/04
1088	Limiting Road Cuts and Excavation on Tatum Blvd for 5 years	11/04/04
1089	Limiting Road Cuts and Excavation on DTRR for 5 years	11/04/04
1090	Ratifying the Preliminary Plat and Map for La Posada Resort	11/18/04
1091	Amending 2004 Master Fee Schedule – Haul Fees	12/16/04
1092	Adoption of 2005 Master Fee Schedule	01/27/05
1093	Authorize IGA with Phoenix for McDonald Dr Sidewalk	02/24/05
1094	Intent to Reimburse Certain Capital Items – Land	05/12/05
1095	Authorize Town Manager to Attend Auction to Bid on Land	05/12/05
1096	Adopt 2003 International Building Code by Reference	06/23/05
1097	Adopt 2003 International Fire Code by Reference	06/23/05
1098	Authorization of FY 2004-05 Budget Fund Transfers	05/26/05
1099	Adoption of FY 2005-06 Tentative Budget	05/26/05
1100	Authorization of Lease Purchase Agreement for Land	06/09/05

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
1101	Adoption of Zoning Code by Reference	11/03/05
1102	Adoption of FY 2005-06 Final Budget	06/09/05
1103	Support for Kiva School Athletic Field Renovation	06/09/05
1104	Approval of Utility Easement to APS 66th Street	06/09/05
1105	Approval of Easement and Prior Rights to APS for DTRR	06/09/05
1106	Amending 2005 Master Fee Schedule Solicitation Permit	07/14/05
1107	Abandon Right-of-Way Easement at Catesby Road	07/14/05
1108	Abandon Right-of-Way Easement 5500 Yucca Road	10/13/05
1109	Recognize Catherine F. Connolly	11/17/05
1110	Amend 2005 Master Fee Schedule – Sewer User Fees	10/27/05
1111	Authorization of Transfer of Funds	10/27/05
1112	Adopt 2006 Master Fee Schedule	11/17/05
1113	Authorize Expenditure Limitation Election	12/15/05
1114	Authorize Sale of Excess Real Property Election	12/15/05
1115	Autorize Filing of Amicus Brief Regarding SUPs	12/15/05
1116	Authorize Condemnation for Lincoln Drive Sidewalk	02/09/06
1117	Adoption of 2000 Procurement Policy as Amended	02/23/06
1118	Canvass of 2006 Primary Election	03/23/06
1119	Authorization to Acquire Fee Title to Land for Fire Station	04/11/06
1120	Authorization of Lease-Purchase Financing for Sewer Capacity	05/25/06
1121	Canvass of 2006 General Election	05/25/06
1122	Authorization of Transfer of Funds	05/25/06
1123	Adopt FY 06-07 Tentative Budget	05/25/06
1124	Establish Retiree Health Savings Plan	05/25/06
1125	Authorization to File Amicus Breif in Water Rate Case	05/25/06
1126	Declaring 2006 Tax Code Amendments a Public Record	06/22/06
1127	Adopt FY 06-07 Final Budget	06/22/06
1128	Intent to Reimburse Certain Capital Items	06/22/06
1129	Authorization to Execute Master Lease Purchase Agreement	06/22/06
1130	Authorization to Sell Public Land	06/22/06
1131	Authorization of IGA with ADOT for Lincoln Dr Sidewalk	07/13/06
1132	Authorization of IGA with COP for Fire Protection Services	07/13/06
1133	Abandon Drainage Easement Scottsdale and Doubletree	09/14/06
1134	Authorize Cox Communications Settlement Agreement	09/14/06
1135	Amend Master Fee Schedule; Sewer User Fee	10/26/06
1136	Declare 2007 Tax Code Amendments a Public Record	12/07/06
1137	Abandon Right-of-Way 6721 E. Cheney Drive	12/07/06
1138	Declare Ordinance 587 Amendments to Chap.5 a Public Record	02/22/07
1139	Declare 2006 International Building Codes a Public Record	02/22/07
1140	Adopt 2007 Master Fee Schedule	02/22/07
1141	Declare 2006 International Fire Code a Public Record	02/22/07
1142	Abandon 7545 N. Mockingbird Lane	04/12/07
1143	Approve IGA with COP for Annexation of 8444 N. Tatum	04/12/07
1144	Authorize Attorney to Intervene re: Stone v. City of Phoenix	04/26/07

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
1145	Adopt FY 2007-08 Tentative Budget	05/24/07
1146	Approve Workers Compensation for PD Volunteers	05/10/07
1147	Pending	
1148	Adopt Fire Code by Reference	05/10/07
1149	Authorize Home Detention Program	05/10/07
1150	Adopt 2007 MAG PM-10 Five Percent Plan	06/14/07
1151	Amend 2007 Master Fee Schedule Fire Code Permit Fees	06/14/07
1152	Approval of Transfer of Funds within 06-07 Budget	05/25/07
1153	Amend Council Rules and Procedures	06/14/07
1154	Adopt FY 2007-08 Budget	06/28/07
1155	Authorize Stop Signs Cheney Dr. & Mockingbird Lane	08/16/07
1156	Request AZ Corp. Commission to Reopen Water Rate Case	09/27/07
1157	Amend 2007 Master Fee Schedule Sewer User Fees	10/25/07
1158	Void	
1159	Adopt 2008 Master Fee Schedule	01/24/08
1160	Recognize Retiring Town Manager Thomas M. Martinsen	12/20/07
1161	Adopt IGA with ADOT for Bridge Inspection Services	02/18/08
1162	Abandon Roadway Easement in Vicinity of 4801 E. Rovey Ave	02/28/08
1163	Canvass of 2008 Primary Election	03/27/08
1164	Development Agreement with Five Star Development Resort	04/10/08
1165	Abandon Roadway at 67th Street and 6667 E. Stallion Drive	09/25/08
1166	Adopt 2008 Tax Code Amendments by Reference	04/24/08
1167	Development Agreement with Mummy Mountain Norte Devel.	05/15/08
1168	Adopt FY 2008-09 Tentative Budget	05/15/08
1169	Approve Transfer of Funds within 07-08 Budget	05/15/08
1170	Adopt Final FY 2008-09 Budget	06/26/08
1171	Call a Special Election for November 4, 2008 (Ritz Ref.)	07/10/08
1172	Void	
1173	Town Employee Compensation Plan for FY 2008-09	06/26/08
1174	Intent to Reimburse Certain Capital Items	06/10/08
1175	Approve Transfer of Funds within 07-08 Budget	09/11/08
1176	Authorize Town Water Conservation Program	09/11/08
1177	Amend Master Fee Schedule – Sewer User Rate	10/23/08
1178	Canvass of November 4, 2008 Special Election	11/24/08
1179	Establish Proper “pick-up” Under IRS Regs for 401(a) Plan	12/30/08
1180	Establish Water Utility Committee – Membership & Goals	01/22/09
1181	Designate Emergency Management Filing Agent	02/26/09
1182	Authorize Town Employee Severance Plan	02/26/09
1183	Adopt Financial Management Policies	02/26/09
1184	Authorizing MPC Bond Refunding	03/12/09
1185	Authorization to File Testimony with ACC Re.AZ-Amer. Water	03/12/09
1186	Arizona Mutual Aid Compact IGA	05/14/09
1187	Autorization to File as an Intervener with ACC NewPath	04/23/09
1188	Approve Transfer of Funds within 08-09 Budget	06/11/09

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
1189	Adopt FY 2009-10 Tentative Budget	06/11/09
1190	Approve IGA with Fountain Hills for Traffic Signal Services	06/11/09
1191	Approve Capital Lease Purchase Agreement Zions Bank	06/11/09
1192	Approve Speed Limit on Invergordon North of McDonlad	06/25/09
1193	Approve intent to Reimburse Certain Capital Items	06/25/09
1194	Adopt Final Budget for FY 2009-2010	06/25/09
1195	Adopt Mission, Vision, Value Statements	07/09/09
1196	Approve Transfer of Funds within 08-09 Budget	09/10/09
1197	Authorization to Apply for Highway Safety Grant	09/10/09
1198	Adopt 2009 Tax Code Amendments by Reference	10/08/09
1199	Amend Master Fee Schedule – Sewer User Fee	10/22/09
1200	Pending	
1201	Adopt Article XI Amendments by Reference	10/22/09
1202	Amend Local Tax Audit Policy	11/05/09
1203	Amend Master Fee Schedule – Alarm Fees	11/19/09
1204	Amend Master Fee Schedule – Special Use Permit Fees	11/05/09
1205	Authorization to Enter into Cooperative Purchasing Agreemnts	11/05/09
1206	Amend Chapter 4 Licenses by Reference	11/19/09
1207	Authorize Cooperative Purchasing Agreements	12/03/09
1208	Approve IGA with ADOT for Street Resurfacing	12/17/09
1209	Adopt Policy Direction on Guardgates	12/17/09
1210	Amend Financial Management Policies	02/25/10
1211	Adopt 2009 Multi-Jurisdicition Hazard Mitigation Plan	02/25/10
1212	Canvass of March 9, 2010 Election	03/25/10
1213	Amend Master Fee Schedule for Solar Engery Devices	02/25/10
1214	Authorize Intervention in ACC Rate Case Re: AZ American	03/11/10
1215	Authorize Submittal to the ACC Docket	04/22/10
1216	Approve Tentative FY 2010-11 Budget	05/13/10
1217	Authorze Budget Transfer	05/13/10
1218	Approve Canvass of 2010 General Election	05/27/10
1219	Adopt Final FY 2010-11 Budget	05/27/10
1220	Adopt Water Utility Committee Terms	07/08/10
1221	Adopt Procedure for Designating Mayor for 2010-2012 Term	05/27/10
1222	Adopt Community Wildfire Plan	07/08/10
1223	Adopt Campus Master Plan	07/08/10
1224	Approve NewPath Networks License Agreement	09/02/10
1225	Adopt Water Utility Committee Membership	09/16/10
1226	Adopt Fee Schedule – Wastewater Utility Fee	10/21/10
1227	Establishing Visioning Committee	10/21/10
1228	Establishing General Plan Advisory Committee	11/18/10
1229	Adopting 2011 Legislative Agenda	11/18/10
1230	Amending Mary Ann Brines Committee	01/27/11
1231	Adopting General Plan Process Procedures	02/10/11
1232	Pending	

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
1233	Approving Severance Plan for 2011	04/29/11
1234	Approve Tentative FY 2011-12 Budget	05/12/11
1235	Authorize Budget Transfer	05/26/11
1236	Appoint Hearing Officer Montessori Revenue Bonds	05/12/11
1237	Adopt Final FY 2011-12 Budget	05/26/11
1238	Approve Issuance of Montessori Revenue Bonds	06/09/11
1239	Authorization to Intervene in ACC Rate Case	06/23/11
1240	Adopt Fund Balance Policy	09/09/11
1241	Adopt Political Sign Free Zones	10/13/11
1242	Adopt 2011 Tax Code Amendments by Reference	11/17/11
1243	Adopt 2012 General Plan	11/10/11
1244	APS Franchise Election	11/03/11
1245	Withdrawn	
1246	IGA with Maricopa County Elections Department	11/03/11
1247	Abandonment 67th PL (Lennon)	02/23/12
1248	Express Support for HB 2060 Municipal Fire Service Fee	02/11/12
1249	Express Support for Luke Air Force Base	02/23/12
1250	Amend Council Rules and Procedures	03/22/12
1251	2012 Primary Canvass of Election	03/22/12
1252	Establishing Reasonable Accommodation Guidelines	03/22/12
1253	Wtihdrawn	
1254	FY 2012-13 Tentative Budget	05/10/12
1255	Withdrawn	
1256	Adopting Arts Advisory Committee Guidelines	05/24/12
1257	Call Special Election – Repeal Direct Election of Mayor	06/07/12
1258	FY 2012-13 Final Budget	05/24/12
1259	Withdrawn	
1260	Direct Planning Commission to Review & Recommend Changes	06/28/12
1261	Revised Mountain Shadows Statement of Direction	08/30/12
1262	Join Regional Wireless Cooperative	09/13/12
1263	Abandon Easement Lot 15 Bret Hills	09/27/12
1264	Authorize FY 2013 Budget Transfer – Trolley	09/27/12
1265	Withdrawn	
1266	Canvass of Special Election – Directe Election of Mayor	11/26/12
1267	Adopting Major General Plan Amendment	12/06/12
1268	Withdrawn	
1269	Adopt 2012 Comprehensive Annual Financial Statements	11/01/13
1270	Create Public Safety Task Force	01/24/13
1271	Adopt Mountain Shadows Resort Development Agreement	04/18/13
1272	Adopt Mountain Shadow Area F Development Agreement	04/18/13
1273	Authorize Mountain Shadows Settlement Agreement	04/18/13
1274	Authorize Bil Keane Memorial Donation Fund	06/13/13
1275	Abandon Drainage Easement Vista Rica 2	04/25/13
1276	Authorize FY 2013-14 Medical Insurance Plan & HSA	04/25/13

RESOLUTION NUMBER	DESCRIPTION	DATE ADOPTED
1277	Authorize FY 2012-13 Budget Adjustment & Interfund Loan	04/25/13
1278	Approve FY 2013-14 Tentative Budget	05/23/13
1279	Acquire Easements 4200 N Highlands Drive	06/13/13
1280	Authorize Negotiations with Redflex Traffic Systems	05/23/13
1281	Adopt FY 2013-14 Final Budget	06/13/13
1282	Withdrawn	
1283	Authorize FY 2013-14 Budget Adjustment – Sidewalks	06/13/13
1284	Abandon Right of Way 6611 N 60th St	06/13/13
1285	Release Easement 6600 E Cactus Wren Rd	06/13/13
1286	Authorize Utility Easements at Municipal Court Facility	10/24/13
1287	Adopt Franciscan Renewal Center General Plan Amendment	11/07/13
1288	Authorize FY 2012-13 Budget Adjustments	12/19/13
1289	Authorize FY 2013-14 Budget Adjustments – LTAF II	01/09/14
1290	Approve 2014 Wastewater LUA and IIP Report	02/25/14
1291	Authorize FY 2013-14 Budget Adjustments – CIP	01/23/14
1292	Authorize FY 2013-14 Budget Adjustments – Personnel	02/13/14
1293	Accept the FY 2012-13 Comprehensive Annual Financial Rpt	02/25/14
1294	Abandon/Accept Drainage Easement Lot 7 Gary Estates	03/13/14
1295	Authorize 2013-14 Budget Adjustments – CIP	03/13/14
1296	Adopt Franchise Agreement with Southwest Gas	03/27/14
1297	Pending	
1298	Accept Sidewalk Easement 3900 E Stanford Dr	03/27/14
1299	Authorize FY 2013-14 Budget Adjustment – PD Tech	03/27/14
1300	Amend Master Fee Schedule General Plan/Court Fees	03/27/14

TOWN OF PARADISE VALLEY
MASTER FEE SCHEDULE

1.0	**PERMIT FEES**	
	Planning Department – Building Division	
	1.1.1 Building Permit	*Town Code §5-1-4*
	1.1.2 Plumbing Permit	*Town Code §5-2-2*
	1.1.3 Mechanical Permit	*Town Code §5-4-2*
	1.1.4 Electrical Permit	*Town Code §5-3-2*
	1.1.5 Banner Permit	*Zoning §2510*
	1.1.6 Building Plan Review	*Town Code §5-1-4*
	1.1.7 Demolition Permit	*Town Code §5-10-24*
	1.1.8 Demolition Haul Permit	*Town Code §5-1-2(B)*
	1.1.9 Building Code Appeal	*IBC §1-1-2*
	1.1.10 Request for Change of Address Fee	
	1.1.11 Other Inspection fees	
	Engineering Department	
	1.2.1 Grading	*Town Code §5-1-4*
	1.2.2 Right of Way Construction	*Town Code §5-5-2*
	1.2.3 Haul Permit Fees	*Town Code §5-1-4 (B)*
	1.2.4 Engineering Plan Review	
	1.2.5 Blasting Operations Permit	*Town Code §5-12-10*
	1.2.6 Drilling Permit	*Town Code §5-14-1*
	Wastewater Utility Division	*Town Code §15-3; 5-4*
	1.3.1 Sewer Development	*Town Code §15-3-1*
	1.3.2 Sewer User	*Town Code §15-4-1*
	Police Department	*Town Code §9-3-7*
	1.4.1 Records and Documents	
	1.4.2 Licenses and Permits	*Town Code § 9-3-7 §11-(2-5)*
	1.4.3 Reserved	
	1.4.4 Miscellaneous	
	Fire Prevention	
	1.5.1 Fire Prevention Permit Fees	*Town Code §13-2-5*
	Alarm Monitoring and Fines	
	1.6.1 Police Alarm Monitoring (PAM) Subscription Rates	*Town Code §4-3*
	1.6.2 False Alarm Fines	*Town Code§9-3-9*
2.0	**APPLICATION FEES**	
	2.1 Board of Adjustment	*Town Code §2-5-3*
	2.2 Planning Commission	*Town Code §6-2-2;*
		Town Code § 6-9-1
	2.3 Hillside Review	*ZO - §2210*
	2.4 Special Use Permit Review	*ZO - §1102.4(E)*
3.0	**ADMINISTRATIVE FEES**	
	3.1 Returned Checks Fee	*Town Code § 4-2*
	3.2 License Fees	*Town Code §10-10-5*
		10-10-12; 4-3-8; 8-3-2
	3.3 Records and Documents	
	3.4 Liens	
	3.5 Reserved	
	3.6 Collection Agency Fee	
	3.7 Special Event Permits	*Town Code §8-8*

1.0 <u>PERMIT FEES</u> For the issuance of permits, the following fees shall be imposed.

1.1 Planning Department – Building Division

1.1.1 Building Permit Fees

1.1.1.1 Building permit fees shall be based on the valuation of the construction which, at a minimum will not be less than $150 / livable square footage, $50/square footage garage, storage, etc., $35/square foot patios, ramadas, porches, etc., $30/ lineal foot for fences and shall be calculated as follows:

TOTAL VALUATION	FEE
$1 to $500	$23.50
$501 to $2,000	$23.50 for the first $500 plus $3.05 for each additional $100 or fraction thereof, to and including $2,000
$2,001 to $25,000	$69.25 for the first $2,000 plus $14 for each additional $1,000 or fraction thereof, to and including $25,000
$25,001 to $50,000	$391.25 for the first $25,000 plus $10.10 for each additional $1,000 or fraction thereof, to and including $50,000
$50,001 to $100,000	$643.75 for the first $50,000 plus $7 for each additional $1,000 or fraction thereof, to and including $100,000
$100,001 to $500,000	$993.75 for the first $100,000 plus $5.60 for each additional $1,000 or fraction thereof, to and including $500,000
$500,001 to $1,000,000	$3,233.75 for the first $500,000 plus $4.75 for each additional $1,000 or fraction thereof, to and including $1,000,000
$1,000,001 and up	$5,608.75 for the first $1,000,000 plus $3.15 for each additional $1,000 or fraction thereof.

Interior remodel calculations are based upon one-half of the actual per square foot value. Conversions (changing the use of an existing area) are valued using the per square foot value of the proposed use less the per square foot value of the existing use.

In addition, the following minimum valuations will be used for the following structures:

	VALUATION
BBQ	$4,000
Kiva Fireplace	$5,000
Water Fountain	$1,000
Water Feature	$2,500

The Town reserves the right to verify construction valuation.

1.1.1.2 In addition to the fees established in paragraph 1.1.1.1, the permit holder shall reimburse the Town for any fees charged by outside consultants relevant to the project.

1.1.1.3 Pools 1% of construction cost.

1.1.1.4 In addition to the fees established in paragraph 1.1.1.1, the permit holder shall be assessed a Haul Fee equal to 9.0% of the Building Permit Fee on all new construction or remodeling projects valued at $500,000 or more. Construction in which more than 100 cubic yards of fill dirt will be brought onto or removed from the property shall be assessed an additional fee pursuant to Section 1.2.3.

1.1.2 Plumbing Permit Fees

Permit	20.00	Each
Fixture(s) Set On One Trap	7.00	Each
Building Sewer	15.00	Each
Rainwater System, Per Drain	7.00	Each
Cesspool	25.00	Each
Private Sewage System	40.00	Each
Water Heater	7.00	Each
Gas System, 1-5 Outlets	5.00	Total
Additional Gas Outlets	1.00	Each
Lawn Sprinkler Including Backflow Device	7.00	Each
Vacuum Breakers, 1-5	5.00	Total
Additional Breakers	1.00	Each
Backflow Protective Device, 2-Inch Or Smaller	7.00	Each
Backflow Protective Device, Over 2-Inch	15.00	Each
Graywater System	40.00	Each
Medical Gas Piping, 1-5 Inlets/Outlets	50.00	Each
Additional Medical Gas Inlets/Outlets	5.00	Each
Repair On Drainage System	7.00	
Repair Or Installation Water Piping/Treating	7.00	

1.1.3 Mechanical Permit Fees

Permit	23.50	
Furnace, Up To 100,000 B.T.U.	14.80	
Furnace, Over 100,000 B.T.U.	18.20	
Floor Furnace	14.80	
Suspended/Wall/Floor Heater	14.80	
Appliance Vent	7.25	
Repair Of Heating Appliance, Refrigeration Unit, Evaporative System	13.70	
Boiler Or Compressor / Ac Unit		
Up To 100,000 B.T.U. And 3 Hp	14.70	Each
Over 100,000 & Up To 500,000 B.T.U.; Up To 15 Hp	27.15	Each

Over 500,000 & Up To 1,000,000 B.T.U.; Up To 30 Hp	37.25	Each
Evaporative Cooler, Non Portable	10.65	Each
Ventilation Fan	7.25	Each
Hood Served By Mechanical Exhaust	10.65	Each
Incinerators, Domestic Type	18.20	Each
Incinerators, Commercial Or Industrial	14.50	

1.1.4 Electrical Permit Fees

Permit	22.00	Each
Receptacles, 1-20	1.00	Each
Switches, 1-20	1.00	Each
Outlets, 1-20	1.00	Each
Additional Switches, Receptacles, Outlets	.65	Each
Lighting Fixtures, 1-20	1.00	Each
Additional Fixtures	.65	Each
Pole Or Platform Light	1.00	Each
Theatrical Lighting	1.00	Each
Appliances (Oven, Range, Dishwasher, Disposals, Dryers, Washers, Space Heaters, Wall A.C.)	4.25	Each
Water Heater	4.25	Each
Private Swimming Pool	44.25	Each
Power Apparatus (Motors, Generators, A.C., Heat Pumps), Up To 1 HP	4.25	Each
Power Apparatus, Over 1 To 10 Hp	11.00	Each
Power Apparatus, Over 10 To 50 Hp	22.00	Each
Power Apparatus, Over 50 To 100 Hp	44.25	Each
Power Apparatus, Over 100 Hp	66.50	Each
Temporary Power Pole Or Pedestal	22.00	Each
Service Change Up To 200 Amp	27.25	Each
Service Change Over 200 To 1,000 Amp	55.50	Each
Service Change Over 1,000 Amp	111.00	Each
Signs, Marquees	22.00	Each
Misc.	16.25	Each

1.1.5 Banner Permit $25.00 each

1.1.6 Building Plan Review

In addition to the building and other permit fees charged under other sections herein, the fees for the review of building plans, including electrical, grading and drainage, mechanical, plumbing, structural, and prevention plans, shall be charged as follows:

In-house plan review and Standard out-source plan review (two reviews)	65% of building permit fee
Standard out-source plan review and in-house plan review after the second review	$65.00 per hour

Expedited out-sourced plan review (two reviews)	115% of building permit fee
Expedited out-sourced plan review after second review	$130.00 per hour
Commercial sprinkler plan review	$0.078 / sq foot
Fire alarm plan review	$0.025 / sq foot
Fire hydrant plan review	$100.00 per plan
Residential sprinkler plan review	$0.057 / sq foot
Chemical fire system plan review	$75.00 per plan
Hood system plan review	$75.00 per plan
Processing fee for deferred submittal	$25.00

1.1.7 Demolition Permit

Plan Check	Complete Demo $130 Partial Demo $65
Demolition Permit	Complete Demo = $200 Partial Demo = $100

1.1.8 Demolition Haul Permit

This Section shall apply when more than 100 cubic yards of other materials are removed from the property.

Demolition Haul Permit	$0 first 100 CY + $75 each additional 100 CY or part thereof

1.1.9 Building Code Appeal

Appeal of Building Official's decision on construction codes	$1,320

1.1.10 Request for Change of Address Fee

Request for change of address	$165

1.1.11 Other Inspection Fees

• Re-inspection fee when construction work is not in compliance with Code for third and subsequent inspections	$55 per hour or part thereof
• Special inspection fee during normal business hours	$55 per hour or part thereof
• Special inspection fee outside of normal business hours	$110 per hour or part thereof. Special inspections requested for holidays, Saturdays, or Sundays will be subject to a 3 hour minimum.

A special inspection fee is (1) a request not made by 3 pm on the previous business day or (2) any request for inspection services outside of the normal work hours (8 am to 4 pm Monday – Friday). Special inspections are subject to prior approval and staff availability.

1.2 Engineering Department

1.2.1 Grading Permit Fees

Plan Check	$60.00
Grading Permit	$80 first 100 cy + $30 each additional 100 cy
Late Permit Fee	A late permit fee will be charged for any grading work (removal or placement of fill dirt on property) without first having obtained a grading permit.$1,000.00 for first 100 cy + $50.00 for each additional 100 cy

1.2.2 Right-of-Way Construction Permit Fees: $75.00 Plus

Item	Unit	Fee
A.C. Paving	Sq. Yd.	$0.45
Concrete Sidewalk/Recreation Path	Lin. Ft.	0.50
Dust Palliative	Sq. Yd.	0.02
Concrete Valley Gutter and Apron	Lin. Ft.	0.50
Curb and Gutter	Lin. Ft.	0.20
Water Lines	Lin. Ft.	1.60
Sewer Lines	Lin. Ft.	1.60
Trenching	Lin. Ft.	0.24
Underground Conduit or Pipe	Lin. Ft.	0.16
Splice Pit	Each	5.00
Concrete Box Culvert (Single Barrel)	Each	20.00
Brass Cap	Each	10.00
Street Sign	Each	80.00
Traffic Control Devices (including barricades) day or night, per location	Per location	250.00
Emergency Street Work, per location	Per location	250.00
Permanent Site Restoration	Each	500.00

A $500.00 Assurance is required prior to issuance of each permit.

1.2.3 Haul Permit Fees

This section shall apply when more than 100 cubic yards of dirt will be brought onto or removed from the property.

Excavation Haul Fee	$0 first 100 cy + $75 each additional 100 cy or part thereof

1.2.4 Engineering Plan Review

Review 1st & 2nd, each	$115
Each subsequent review	$ 55

1.2.5 Blasting Operations Permit

Blasting permit	$585

1.2.6 Drilling Permit

Drilling Permit	$115

1.3 Wastewater Utility Division

1.3.1 Wastewater Development Fees

Meter Size	Meter Type	Flow (gpm)	Capacity Ratio (1)	Fee ($)
1" and smaller		**50**	**1.00**	**$6,541.56**
1.5"	**Displacement**	**100**	**2.00**	**$13,083.12**
2"	**Displacement**	**160**	**3.20**	**$20,932.99**
3"	**Compound**	**320**	**6.40**	**$41,865.98**
3"	**Turbine**	**350**	**7.00**	**$45,790.92**
4"	**Compound**	**500**	**10.00**	**$65,415.60**
4"	**Turbine**	**600**	**12.00**	**$78,498.72**
6"	**Compound**	**1000**	**20.00**	**$130,831.20**
6"	**Turbine**	**1250**	**25.00**	**$163,539.00**
8"	**Compound**	**1600**	**32.00**	**$209,329.92**

The fee for the enlargement of an existing meter size shall be the difference between the fee charged for the existing meter size and the new meter size connection as set forth in the Paradise Valley Fee Schedule.

Notwithstanding the foregoing fee schedule, the sewer development fee shall be offset by $840 for any single-family residential lot for which sewer development fee has previously been paid to or waived by the City of Scottsdale. The lots are located in the following areas:

Camelback Country Estates Unit I	Camelback Country Estates Unit II	Camelback Country Estates Unit III
Paradise Green AKA Double Tree Place	Vista Rica Unit I	Tatum Canyon
Las Brisas	El Dorado Estates	Butler Improvement District

1.3.2 Sewer User Fee:

1.3.2.1 Residential

The monthly sewer user fee shall be $63.26 per month plus $.87 per each 1,000 gallons over 15,000 gallons of water usage. The maximum monthly rate shall be $200.00. Once a year, but not more frequently than every ten months from the date of a prior calculation, the sewer user charge will be calculated based on 90% of the average monthly water consumption for the preceding consecutive months of December, January, February, and March excluding the month of greatest consumption.

1.3.2.2 Schools, Churches, Public Buildings

The monthly sewer user fee shall be $3.88 per 1,000 gallons of water consumption. Once a year, but not more frequently than every ten months from the date of a prior calculation, the sewer user charge will be calculated based on the average monthly water consumption for the preceding consecutive months of December, January and February. Water consumption shall be calculated based on 100% of the in-building water consumption, if in-building and outdoor consumption are separately metered by the water provider. Water consumption shall be calculated based on 90% of the average monthly water consumption if in-building water consumption is not separately metered by the water provider. The minimum rate for schools, churches, public buildings will be $63.26.

1.3.2.3 Commercial Building with Dining

The monthly sewer user fee shall be $4.69 per 1,000 gallons of water consumption. Once a year, but not more frequently than every ten months from the date of a prior calculation, the sewer user charge will be calculated based on 90% of the average monthly water consumption for the preceding consecutive months of December, January and February. Water usage consumption shall be calculated based on 100% of the in-building water consumption, if in-building and outdoor consumption are separately metered by the water provider. Water consumption shall be calculated based on 90% of the average monthly water consumption if in-building water consumption is not separately metered by the water provider. The minimum rate for commercial building with dining will be $63.26.

1.3.2.4 Medical Facilities

The monthly sewer user fee shall be $4.12 per 1,000 gallons of water consumption. Once a year, but not more frequently than every ten months from the date of a prior calculation, the sewer user charge will be calculated based on 90% of the average monthly water consumption for the preceding consecutive months of December, January and February. Water usage consumption shall be calculated based on 100% of the in-building water consumption, if in-building and out-door consumption are separately metered by the water provider. Water consumption shall be calculated based on 90% of the average monthly water consumption if in-building water consumption is not separately metered by the water provider. The minimum rate for medical facilities will be $63.26.

1.3.2.5 Water Meter Reading Fee $25.00

1.4 Police Department

1.4.1 Records and Documents

Police report copies (Fees waived for victims of violent Part I crimes) 1 through 20 pages	$10.00
Each additional page up to 150 pages	$0.50 per page
Over 150 pages	$75.00
All other public documents	$0.25 per page ($1.00 minimum)
Crime scene/crash diagrams larger than 11'X17"	$10.00 each
Printed photographs (3" X 5" and Polaroid) (Note: This does not include photo enforcement photographs.)	$5.00 per photograph
Printed photographs (8" x 10")	$10.00 per photograph
Digital Photographs, per report:	
First CD/Disk	$10.00
Additional CDs/Disks same report	$5.00
Police audio recordings (Includes 911)	$25.00 per Tape/CD
Police video recordings	$ 25.00 per Tape/CD
Photo enforcement photographs (fee is not set nor controlled by the Town and is subject to change without advance notice. Please check with the Police Department's Photo Enforcement Clerk for current cost and procedure for obtaining a photograph.	Cost can vary

1.4.2 Licenses and Permits

Commercial Residential Solicitation Permit Fee	$25.00 each
Fingerprinting Fee	$5.00 per card
Housemoving	$950 + $95 per hour for permits requiring more than 10 hours staff time.

1.4.3 Reserved

1.4.4 Miscellaneous Fees

Immobilization Device (parking boot) Removal	$25.00 each
Horse Recovery/Impound	$100 per horse
Sign Removal Fee	$35.00 per sign
Vehicle Impoundment Administrative Hearing Fee	$65.00

1.5 Fire Prevention

1.5.1 Fire Prevention Permit Fees

Tent Permit	$75.00
Underground fuel tank storage permits	$150.00
Above ground LPG permit	$85.00
Underground LPG permit	$85.00
Fireworks permit	$125.00
Convention permit	$75.00
Roofing operations permit	$50.00
Hazardous Materials permit	$75.00
All other permits required by Intl Fire Code	$50.00

1.6 Alarm Monitoring and Fines

1.6.1 Town Alarm Monitoring (TAM) Subscription Rates

PAM Primary (Telephone) 1-24 Zones	$35 per month / $105 per quarter
PAM Primary (Telephone) 25+ Zones	$40 per month / $120 per quarter
PAM Backup (Radio or digital backup)	+$10 per month / +$30 per quarter

1.6.2 False Alarm Fines

1st False Alarm	$0
2nd and Subsequent False Alarms in Same calendar year	$100 each for permitted Users

2.0 Application Fees For the receipt and consideration of applications, the following fees shall be imposed.

2.1 Board of Adjustment

2.1.1	Application for Variance	$2,305
2.1.2	Appeal of Administrative Decision	$1,735
2.1.3	Request for Continuance by the Applicant	$400
2.1.4	Application for Variance for Non-livable detached structures having less than 10% impact on setback or disturbed area	$1,730
2.1.5	Administrative Relief from Zoning Code	$230

2.2 Planning Commission

2.2.1 Subdivisions

2.2.1.1	Application for approval of a preliminary subdivision plat:	$3,565 + $25 per lot
2.2.1.2	Application for approval of a final subdivision	$1,985
2.2.1.3	Replat	$2,250
2.2.1.4	Application for Subdivision Sign	$835
2.2.1.5	Subdivision Premises for Sale Sign	$835

2.2.2 If the proposed subdivision is partially or wholly within the Hillside Development Area, then the fees established above (§ 2.2.1) are doubled.

2.2.3.a	Major Amendments: To file for a major amendment to the General Plan, each application	$7,855
2.2.3.b	Minor Amendments: To file for a minor amendment to the General Plan, each application	$2,500

2.2.4	To vacate a street or alley, each application	$2,195 + cost of appraisal
2.2.5	To amend the Zoning Ordinance, each application	$6,245
2.2.6	Application for Rezoning	$3,520 + $75 per lot
2.2.7	Request by applicant for a continuance (applies to all planning/zoning matters, special use permits, subdivisions, etc)	$400each
2.2.8	Lot Split	$2,250
2.2.9	Lot Line Adjustment	$890
2.2.10	Exempt Lot Split Review	$890
2.2.11	Release of Easement	$1,245

2.3 Hillside Review

2.3.1	Additions to existing structures (sec. 2204f1) requiring engineer approval only	$200
2.3.2.a	In addition to the permit fees established in paragraph 1.1, an application for Hillside Building Committee review of structures in a Hillside Development Area shall pay a fee and reimburse the Town for any fees charged by consultants relevant to the project.	$1,470
2.3.2.b	Review of plans for addition of a solar photovoltaic or solar hot water heater only application	$200
2.3.3	Hillside Building Committee Re-approval	$500

2.4 Special Use Permit Review

2.4.1 Application for Special Use Permits

2.4.1.1	Managerial Amendment	$500
2.4.1.2	Minor Amendment	$2,500
2.4.1.3	Intermediate Amendment for Schools, Government Buildings, and Places of Worship	$4,500
2.4.1.4	Intermediate Amendment for all other uses	$5,500 + $110 per acre or portion thereof
2.4.1.5	SUP or Major Amendment to SUP for Schools, Government Buildings, and Places of Worship	$7,000
2.4.1.6	SUP or Major Amendment to SUP for all other uses	$8,000 + $110 per acre or portion thereof
2.4.1.7	For Private Road, Guardgate, Guardhouse, or Observation Booth	$2,760
2.4.1.8	Amateur Radio Antenna Permit	$2,360
2.4.1.9	Conditional Use Permit	$2,360
2.4.1.10	Temporary Use Permit	$175

Administrative Fees

For administrative tasks, the following fees shall be imposed.

3.1 Returned Checks Fee

3.1.1	For each check or electronic direct debit or credit card charge returned to the Town for any reason beyond the control of the Town	$50.00

3.2 License Fees

3.2.1	General Business License	$25.00
3.2.2	Escort Bureau Application	$1,000.00
3.2.3	Escort Bureau Issuance	$1,000.00
3.2.4	Escort Bureau Renewal	$1,000.00
3.2.5	Escort application	$1,000.00
3.2.6	Escort Issuance	$1,000.00
3.2.7	Escort Renewal	$1,000.00
3.2.8	Special Event Liquor License	$25.00
3.2.9	Solid Waste and Recycling License	$500.00

3.3 Records and Documents

3.3.1	Copying for Official Public Records Requests	$0.25 per page ($1.00 Minimum)
3.3.1.1	Black Line (Blue Print)	
	18 X 24	$10.00
	24 X 36	$10.00
	30 X 42	$10.00
3.3.1.2	Faxing for Official Public Records Requests	$0.25 per page
3.3.2	8.5 X 11 Color Copy	$1.00 per page
3.3.3.	Commercial Records Requests, Copies & Searches	As allowed by State law
3.3.4	Town Code (paper copy)	$45.00
3.3.5	Town Code (CD)	$30.00

3.3.6 Town GIS Mapping, Data, and Services

Mapping	Parcel	Aerial
8 ½ X 11 Inches	$5.00	$8.00
11 X 17 Inches	$10.00	$15.00
34 X 44 Inches	$50.00	$75.00
Town Map Book	$200.00	N/A

GIS PARCEL DATABASE

The Town's parcel database is provided in ESRI ARCVIEW V9 shape file format (consisting of ".shp" and related files) only. All data is projected using North American Datum 1983 (NAD83) State Plane Arizona Central FIPS 0202 feet.

	NON-COMMERCIAL	COMMERCIAL
PARCEL DATABASE	$200.00	$400.00

GIS CUSTOM SERVICES

All data or map request not included above will be considered a custom request and shall be considered with regard to availability and cost of town resources to provide the products or services. A custom request can and may be declined.

Minimum Charge	$200.00
Per Hour Charge (1 Hour Increments)	$100.00

- Plus $0.05 Per Parcel (Non-Commercial)
- Plus $0.10 Per Parcel (Commercial)
- Includes Cost Of CD Media

3.3.7	General Plan	$ 9.00
3.3.8	Audio Tape of Public Meeting	$10.00 per tape
3.3.9	Audio CD of Public Meeting	$10.00 per CD

3.3.10	Video Tape	$25.00 per tape
3.3. 11	Copies produced pursuant to court action	As prescribed by State law
3.3.12	Annual Town Budget	$15.00
3.3.13	Auditor's Report	$15.00
3.3.14	Data CD	$50.00

3.4 Liens

3.4.1 Lien Filing Fees	$ 70.00

3.5 Reserved

3.6 Collection Agency

3.6.1 Collection Agency Fee	Collection fees and charges assessed by the collection agency shall be added to the sum or sums due.

3.7 Planning Department – Special Event Permits

3.7.1	Permits For Special Events Generally	
	Walks, Parades, Bicycle Races, Foot Races, Designer/Showcase Home Events, Home And Garden Tours, Fireworks Displays, Film Productions	$750 + $90 Per Hour For Permits Requiring More Than 8.5 Hours Of Staff Time
3.7.2	Permits For Special Events Utilizing Tents	
	Pre-Approved Tent Location Event	$ 25.00
	Tent Events Without Pre-Approved Locations	$125.00

Note: All Special Event Permit Fees will be doubled if request for special event permit is submitted within five business days of event.

FOOTNOTES

Effective March 14, 1987
Amended September 10, 1987
Amended September 29, 1988
Amended July 25, 1991
Amended January 1, 1995
Amended July 25, 1996 (Res. #884)
Amended September 26, 1996 (Res. #890)
Amended August 28, 1997 (Res. #914)
Amended November 12, 1998 (Res. #949)
Amended December 13, 1998 (Res. #953)
Amended February 25, 1999 (Res. #959)
Amended March 11, 1999 (Res. #960)
Amended March 25, 1999 (Res. #961)
Amended May 27, 1999 (Res. #968)
Amended September 9, 1999 (Res. #975)
Amended November 18, 1999 (Res. #979) (Master Schedule Update)
Amended December 16, 1999 (Res. #982)
Amended January 27, 2000 (Res. #984)
Amended November 16, 2000 (Res. #1006)
Amended March 8, 2001 (Res. #1011)
Amended January 24, 2002 (Res. #1025) (Master Schedule Update)
Amended September 26, 2002 (Res. #1037)
Amended November 7, 2002(Res. #1038) (Master Schedule Update)
Amended April 24, 2003 (Res. #1046)
Amended May 22, 2003 (Res. #1048)
Amended October 23, 2003 (Res. # 1058)
Amended February 26, 2004 (Res. #1063) (Master Schedule Update)
Amended July 8, 2004 (Res. #1076)
Amended October 28, 2004 (Res. #1086)
Amended December 16, 2004 (Res. # 1091)
Amended January 27, 2005 (Res. #1092) (Master Schedule Update)
Amended July 14, 2005 (Res. # 1106)
Amended October 27, 2005 (Res. # 1110)
Amended November 17, 2005 (Res. #1112) (Master Schedule Update)
Amended October 26, 2006 (Res. #1135)
Amended February 22, 2007 (Res. #1140) (Master Schedule Update)
Amended June 14, 2007 (Res #1151)
Amended October 25, 2007 (Res #1157)
Amended January 24, 2008 (Res #1159) (Master Schedule Update)
Amended October 23, 2008 (Res #1177)
Amended October 22, 2009 (Res #1199)
Amended November 5, 2009 (Res #1204)
Amended November 19, 2009 (Res #1203)
Amended February 25, 2010 (Res #1213)
Amended October 21, 2010 (Res #1226)
Amended June 28, 2012 (Res #1259)
Amended March 27, 2014 (Res #1300)
Amended May 8, 2014 (Res #1305)

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OFFICIAL RECORDS OF
MARICOPA COUNTY RECORDER
HELEN PURCELL
20160048360 01/25/2016 02:03
ELECTRONIC RECORDING

WHEN RECORDED RETURN TO:
Town of Paradise Valley
Attn: Town Attorney
6401 East Lincoln Drive
Paradise Valley, Arizona 85253

AGREEMENT1605-5-1-1--
leonardil

WAIVER OF RIGHTS AND REMEDIES
UNDER A.R.S. § 12-1134

This agreement regarding Waiver of Rights and Remedies under A.R.S. § 12-1134 (this "Agreement") is made on January 20, 2016 between five star development resort communities LLC, and the TOWN OF PARADISE VALLEY, an Arizona municipal corporation (the "Town"), regarding the property located in the Town at 7000 E. Lincoln Drive (the "Property"), which is more particularly described as:

Legal Description:

PARCEL NO. 2:

LOTS 1 THROUGH 149 AND TRACTS A THROUGH I, 7000 EAST LINCOLN, ACCORDING TO BOOK 1022 OF MAPS, PAGE 23, RECORDS OF MARICOPA COUNTY, ARIZONA;

EXCEPT THAT PORTION OF TRACT C AND G DESCRIBED IN PARCEL NO. 3.

PARCEL NO. 3:

THOSE PORTIONS OF TRACT C AND G, ACCORDING TO BOOK 1022 OF MAPS, PAGE 23, WHICH LIE WITHIN THE FOLLOWING DESCRIBED PROPERTY:

THE SOUTH 15.00 FEET OF THE NORTH 55.00 FEET OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER;

EXCEPT FOR THE WEST 40.00 FEET THEREOF.

TOGETHER WITH THE SOUTH 15.00 FEET OF THE NORTH 55.00 FEET OF THE WEST HALF OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER, ALL IN SECTION 10, TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

PARCEL NO. 2 CONTAINING 104.649 ACRES, MORE OR LESS
PARCEL NO. 3 CONTAINING 0.620 ACRES, MORE OR LESS

The Owner agrees and consents to all the conditions of approval that are set forth in Ordinance #694 (SUP-15-1; the rezoning of the Property, including all stipulations and conditions associated with the approval of Ordinance #694, attached hereto as Exhibit A) and Ordinance #696 (the related Amended and Restated Development Agreement, Restrictive Covenant, and Settlement Agreement for the Property, attached hereto as Exhibit B). The Owner has voluntarily applied for the change in its land use entitlements referenced in Ordinance #694 and Ordinance #696; and agrees that the even with the stipulations and conditions of approval associated with these ordinances the overall rezoning of the Property to now be allowed does not diminish the value of the Property.

By signing this Agreement, the Owner acknowledges that the Owner waives any right to claim diminution in value or claim for just compensation for diminution in value with regard to the Property under A.R.S. § 12-1134 related to the rezoning classification of Resort SUP and the stipulations and conditions associated with the approval of Ordinance #694 and Ordinance #696 by the Town Council.

This Agreement, any exhibits attached hereto, and any addendum, constitute the entire understanding and agreement of the Owner and the Town and shall supersede all prior agreements or understandings between the Owner and the Town with respect to waivers of rights to claim a diminution in value under A.R.S. § 12-1134. This Agreement may not be modified or amended except by written agreement by the Owner and the Town.

This Agreement is entered into in Arizona and will be construed and interpreted under the laws of the State of Arizona.

Within ten days after the execution of this Agreement, the Town Clerk shall file this Agreement in the Official Records of the County Recorder's Office, Maricopa County, Arizona.

This Agreement runs with the land and is binding upon all present and future owners of the Property.

This Agreement is subject to the cancellation provisions of A.R.S. § 38-511.

The Owner warrants and represents that five star development resort communities LLC is the owner of fee title to the Property.

Dated this 20th day of January, 2016.

"OWNER"
FIVE STAR DEVELOPMENT RESORT COMMUNITIES LLC,

By: _____
Name: MANAGER

Title: Manager

State of Arizona)
) ss
County of Maricopa)

SUBSCRIBED AND SWORN to before me this 21 day of January, 2016 by Jerry Ayub, the Manager of FIVE STAR DEVELOPMENT RESORT COMMUNITIES LLC, for and on behalf thereof.

EDNA A. LOPEZ
Notary Public - Arizona
Maricopa County
My Comm. Expires Jul 14, 2016

My commission expires: 7-14-16

Notary Public

"TOWN"

TOWN OF PARADISE VALLEY,
an Arizona municipal corporation

Kevin Burke, Town Manager

ATTEST:

Duncan Miller, Town Clerk

APPROVED AS TO FORM:

Andrew Miller, Town Attorney

EXHIBIT A

Ordinance #694

This document is on file at the Town of Paradise Valley Clerk's Office and may be viewed during normal business hours.

Town Hall
6401 E. Lincoln Drive
Paradise Valley, AZ 85253

EXHIBIT B

Ordinance #696

This document is on file at the Town of Paradise Valley Clerk's Office and may be viewed during normal business hours.

Town Hall
6401 E. Lincoln Drive
Paradise Valley, AZ 85253