Archaeological Resources

Airport Vicinity Development Checklist

Parking Study

Trip Generation Comparison

Parking Master Plan

SCOTTSDALE AIRPORT VICINITY DEVELOPMENT **SHORT FORM**

For development projects within 20,000 feet of Scottsdale Airport NOT located on an Airpark taxilane or adjacent to airport property

The owner of developments within the Airport Influence Area shall complete forms required by the City and Scottsdale Airport to comply with the Scottsdale Revised Code, Chapter 5 – Aviation and the Airpark Rules and Regulations; and submit the completed forms with final plans to the assigned city project manager.

Project Name: Raintree Multifamily	Pre-App: 814-PA-2019
Site Address: 8501 E. Raintree Drive - Scottsdale, AZ 85260	
Contact name: Stephen Krager	Phone: 602-635-4461

1. HEIGHT ANALYSIS, CH. 5, SEC. 5-354. GENERAL REQUIREMENTS

☒ Applicants must conduct a height analysis for all projects located within 20,000 feet of Scottsdale Airport.

1. Complete a height analysis for all structures, appurtenances or construction equipment through the FAA at: https://oeaaa.faa.gov/oeaaa/external/portal.jsp, click on the Notice Criteria Tool (left side). If you do not exceed criteria, submit this FAA response from the website with your packet or you must complete step 2.

IF required by FAA, complete Step 2

2. Submit an FAA form 7460-1 Notice of Proposed Construction or Alteration for review and determination. Please allow about 45 days for this process. A copy of the FAA's response will be required prior to final plan approval.

2. AIRCRAFT NOISE AND OVERFLIGHT DISCLOSURE, CH. 5, SEC. 5-356 & SECT. 5-357

☒ Incorporate the Airport Disclosure for Development around Scottsdale Airport language into the CC&Rs or other procedural documents and provide a copy. *Exhibit A*

☒ An avigation easement will need to be granted to the city. If not already recorded for property, submit a notarized Avigation Easement form with packet to your project manager. *Exhibit B*

3. APPLICANT'S SIGNATURE

Signature:

Date: 12-4-2019

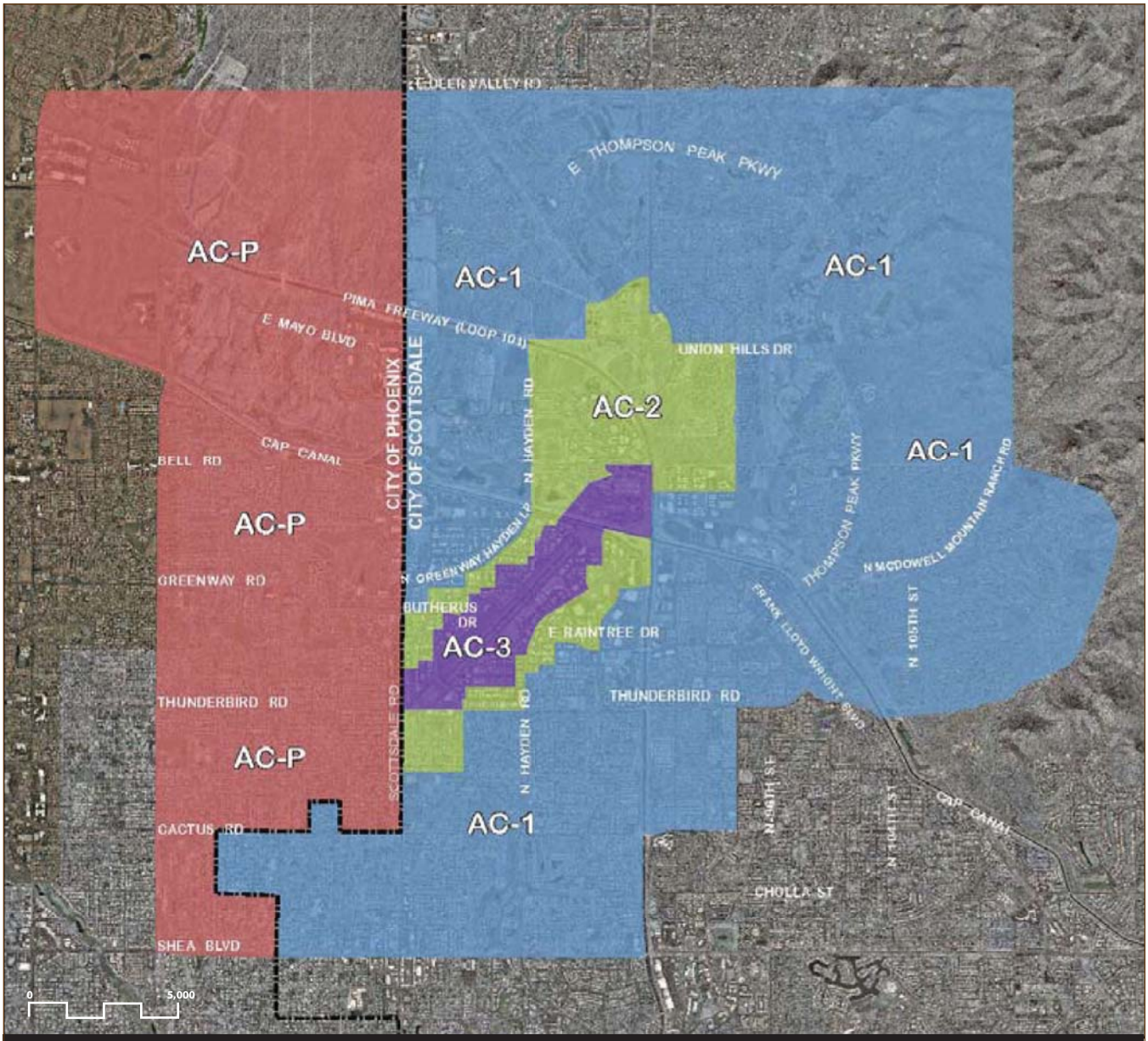
Aviation Approval:

Date:

Comments:

For questions regarding this form or aviation-related requirements, contact Scottsdale Airport at 480-312-2321.

SCOTTSDALE AIRPORT
SDL



LEGEND AND TABLE KEY

Municipal Boundary

Airport Influence Areas

AC-1 AC-3

AC-2 AC-P

NP - Not Permitted
P - Permitted with Use Limitations
(1) - Avigation easement required under Sec. 5-357
(2) - Noise attenuation required under Sec. 5-358

Noise Sensitive Uses	AC[1]-3	AC-2	AC-1
Dwelling unit*	NP	P (1) (2)	P (1)
Manufactured home*	NP	P (1) (2)	P (1)
Elementary and secondary school*	NP	P (1) (2)	P (1)
Hospital*	NP	P (1) (2)	P
Travel accommodation*	NP	P (1) (2)	P
Place of worship	NP	P (1) (2)	P (1)
Cultural, civic, and social organization	NP	P (1) (2)	P (1)

* The terms dwelling unit, manufactured home, elementary and secondary school, hospital and travel accommodation defined in the Basic Zoning Ordinance.
[1] AC - Airport Compatibility District

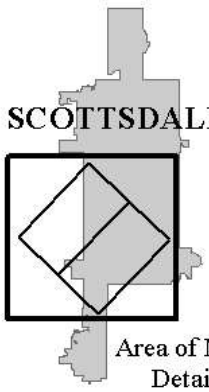
SOURCE: Scottsdale Revised Code; August 2012

SCOTTSDALE AIRPORT SDL

AIRPORT INFLUENCE AREA AND NOISE OVERLAY ZONES

19-ZN-2019
12/13/2019

Scottsdale Airport
Traffic Pattern Airspace



1 0.5 0 1 2 3 Miles

Map Date: October 18, 2001

19-ZN-2019
12/13/2019

EXHIBIT A

SAMPLE FAIR DISCLOSURE FOR DEVELOPMENT AROUND SCOTTSDALE

***AIRPORT* NOTICE TO PURCHASERS**

OF PROXIMITY TO THE SCOTTSDALE AIRPORT

To include in CC&R's or disclosure notice:

Proximity to Airport.
Each Owner of a Lot in the Airport Influence Area identified in Chapter 5 of the Scottsdale Revised Code acknowledges that, as of the date of this notice:

(a) The Lot is close to the Scottsdale Airport (the "Airport"), located generally between Frank Lloyd Wright Boulevard on the north, Pima Road on the east, Thunderbird Road on the south and Scottsdale Road on the west.

(b) The Airport is operated as a general aviation reliever/commercial service airport for Scottsdale and North Phoenix, and used generally for airplanes, jets and helicopters.

(c) Aircraft using the Airport may fly over the Lot and adjacent properties at altitudes that vary for several reasons, including weather conditions, aircraft type, aircraft performance and pilot proficiency.

(d) The majority of takeoffs and landings occur between 6:00 a.m. and 11:00 p.m., but the Airport is open 24 hours each day, so takeoffs and landings may occur at any time.

(e) The number of takeoffs and landings at the Airport average approximately 400 each day, but that number varies and may increase.

(f) Aircraft using the Airport will generate noise, the volume, pitch, amount and frequency of which will vary for several reasons, including weather conditions, aircraft type, aircraft altitude and aircraft number.

(g) Airport management attempts to minimize aircraft noise and its influence on Lots in the Airport Influence Zone, but there is no guarantee that such attempts will be effective or remain in place.

The Owner accepts and assumes any and all risks, burdens and inconvenience caused by or associated with the Airport and its operations (including noise), and agrees not to assert or make any claim arising out of the Airport and its operations against the City of Scottsdale, its elected and appointed officials, officers, directors, commissioners, representatives, employees, and agents.

Any questions regarding the operation of the Airport can be directed to the Airport Administration office at 480-312-2321.

See City staff for official document. Signed documents accepted by City only after approval of legal description.

WHEN RECORDED, RETURN TO:

City of Scottsdale
One Stop Shop/Records
7447 E. Indian School Road, Suite 100
Scottsdale, AZ 85251

Exempt from Affidavit of Value
under A.R.S. § 11-1134(A)(2, 3)

CITY OF SCOTTSDALE
AVIGATION EASEMENT

Project No. _____

APN _____

FOR ONE DOLLAR ($1.00) and other good and valuable consideration received _____ (collectively "Grantor") grants to the City of Scottsdale, an Arizona municipal corporation ("Grantee"), a perpetual, non-exclusive easement upon, over and across the parcel of land (the "Property") described on the legal description and the sketch attached hereto as Exhibits "A" and "B". The purpose of the easement is for a right of flight for aircraft in the airspace above the Property.

1. "Aircraft" means any manned or unmanned device that flies.

2. Without limitation, the right of flight includes the right to operate aircraft over and near the Property, and cause any noise, vibration, fumes, light, exhaust, odors, fuel vapor particles, electronic interference, dust, annoyances, nuisances, emissions, and any other effects relating to operating aircraft (collectively "Aircraft Effects").

3. All Aircraft Effects are included within the scope of the easement, including without limitation those that reach or affect the Property or improvements to the Property, interfere with other uses of the Property, annoy users of the Property, and are caused or made worse by any changes in the following:

   3.1 The size, number, method of propulsion, weight, noisiness, design, fuel, category, type or other characteristics of aircraft, and in any aircraft practices, laws, rules, policies, circumstances, customs, protocols or procedures.

   3.2 The airport size, orientation, configuration, location, runway length, improvements or other characteristics, and in any airport practices, laws, rules, policies, circumstances, customs, protocols or procedures.

   3.3 The flight paths, flight frequency, flight timing, airport operations, climbing and descending, altitudes, takeoff and landing, air traffic control, and in any related aircraft and airport practices, laws, rules, policies, circumstances, customs, protocols or procedures.

See City staff for official document. Signed documents accepted by City only after approval of legal description.

3.4 Grantor's or others' personal perceptions of Aircraft Effects or sensitivity to Aircraft Effects.

4. Grantor shall not cause or allow the Property to be used to discharge fumes; smoke; dust; or electronic, light, laser or other emissions, which may obstruct visibility or adversely affect or interfere with the operation of aircraft or any navigational facilities. No building, mast, tree, vegetation, or other thing upon the Property shall exceed Federal Aviation Administration approved height restrictions.

5. Grantor has been advised and understands that:

5.1. All or a portion of the Property is located in a noise-influence area.

5.2. Aircraft Effects might be annoying to users of the Property and might interfere with the unrestricted use and enjoyment of the Property.

5.3. Aircraft Effects will likely increase over time.

6. Grantor waives all rights and claims that Grantor may ever have against, and agrees not to sue, Grantee regarding Aircraft Effects. Grantor makes its waivers and agreements for itself, its successors and assigns, in favor of Grantee, and all Grantee's officers, officials, employees, agents, lessees, permittees, invitees, successors and assigns.

Grantor warrants and covenants to Grantee and its successors and assigns that Grantor is lawfully seized and possessed of the Property; that Grantor has a good and lawful right to make the conveyance described herein; and that Grantee shall have title and quiet possession against the claims of all persons.

The person executing this document on behalf of a corporation, trust or other organization warrants his or her authority to do so and that all persons necessary to bind Grantor have joined in this document. This document runs with the land in favor of Grantee's successors and assigns.

DATED this ____ day of _____, 20___.

GRANTOR: _____

for _____

_____

for _____

STATE OF ARIZONA)
) ss.

See City staff for official document. Signed documents accepted by City only after approval of legal description.

County of Maricopa)

This document was acknowledged before me this ___ day of _____, 20___, by _____ for and on behalf of_____.

_____
NOTARY PUBLIC

My commission expires:

_____

STATE OF ARIZONA)
) ss.
County of Maricopa)

This document was acknowledged before me this ___ day of _____, 20___, by ___ _____ for and on behalf of _____.

_____
NOTARY PUBLIC

My commission expires:

_____

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018 2 0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

Latitude:	33 Deg 36 M 16 S N
Longitude:	111 Deg 51 M 18 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	1462 (nearest foot)
Structure Height :	69 (nearest foot)
Traverseway:	No Traverseway (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(•) No ( ) Yes

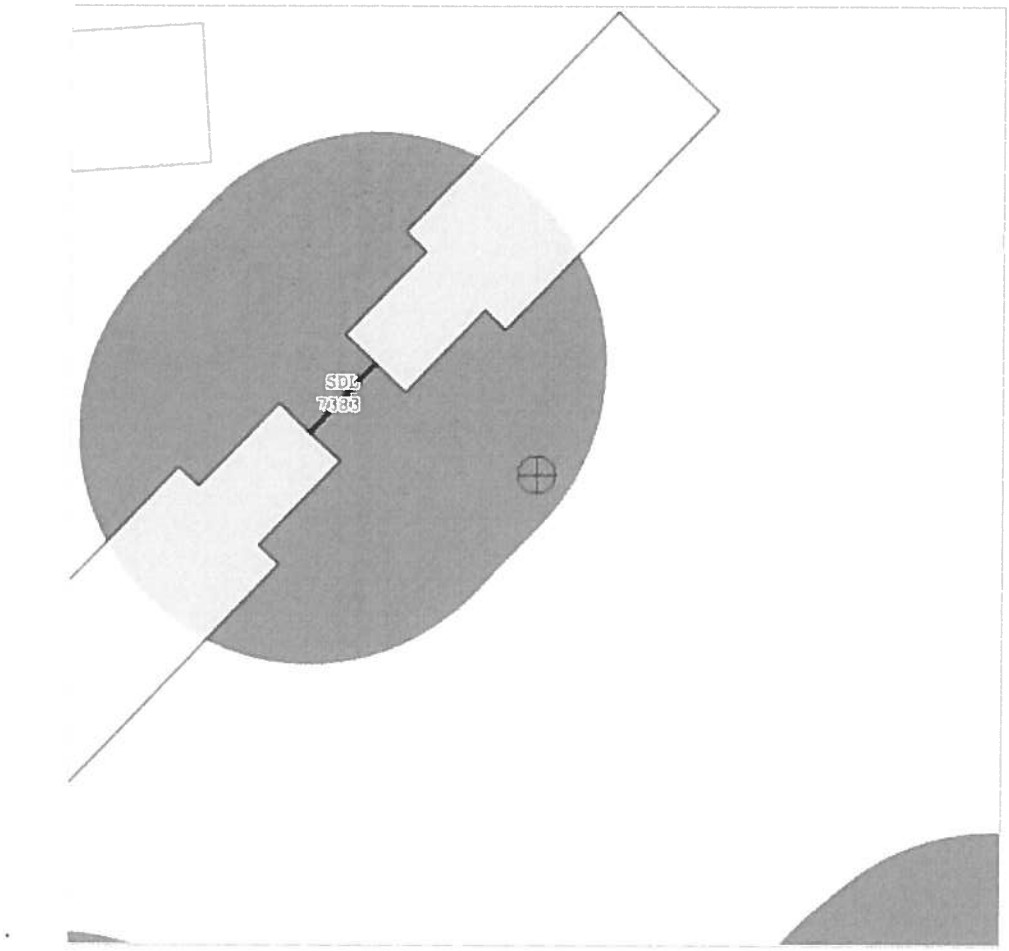
Results

You exceed the following Notice Criteria:

Your proposed structure is in proximity to a navigation facility and may impact the assurance of navigation signal reception. The FAA, in accordance with 77.9, requests that you file.

The FAA requests that you file

19-ZN-2019
12/13/2019



19-ZN-2019
12/13/2019

From: Cindy Wiener
To: Projectinput
Subject: 7-GP-2020,19-ZN-2019 &2-DA-2020 TCC-Raintree
Date: Monday, June 22, 2020 1:49:37 PM

Good Afternoon Brad,

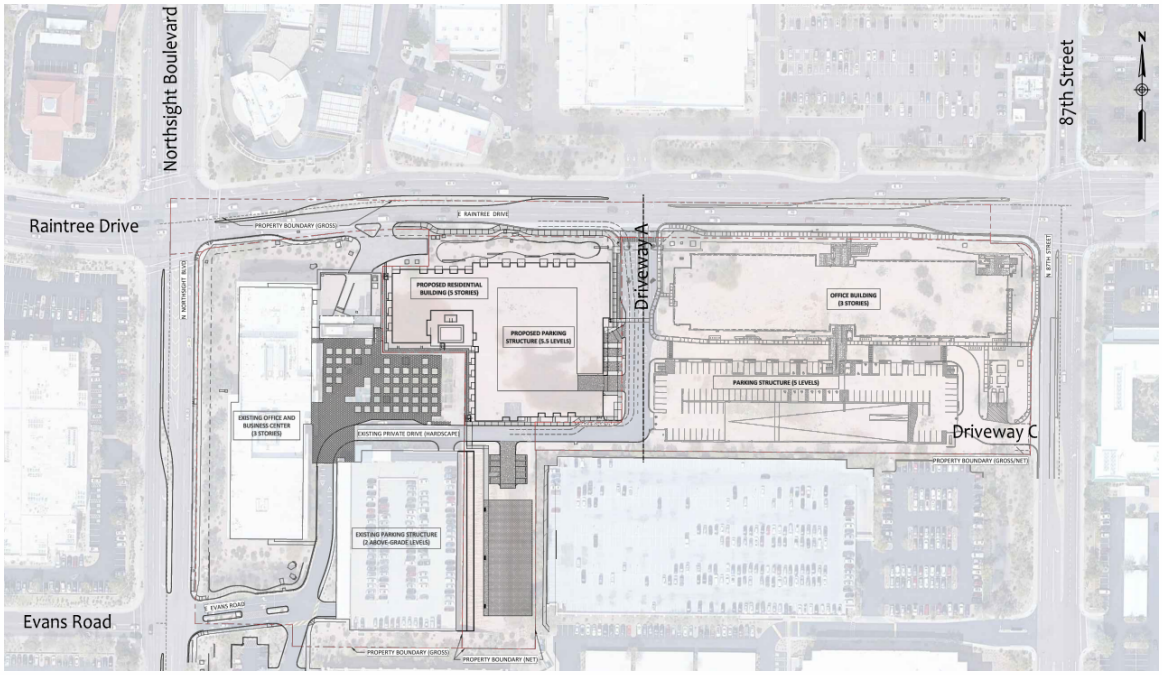
Thank you for your notice for the above-referenced development. ADOT is neutral on this matter. As such, ADOT has no comment.

Kind regards,

Cindy L. Wiener,
Right of Way Agent Consultant

Raintree Multi-Family

Traffic Impact & Mitigation Analysis



Prepared for:

High Street Residential
2575 E Camelback Road, Suite 400
Phoenix, AZ 85016

Registered Professional Engineer (Civil)
CERTIFICATE NO.
40961
JAMIE ANN K. BLAKEMAN
Date Signed: 03/06/20
ARIZONA, U.S.A.

Prepared by:

Lōkahi, LLC
600 N. 4th Street, Suite D
Phoenix, AZ 85004

Project Number: 19.5061
March 6, 2020

19-ZN-2019
3/10/2020

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1. INTRODUCTION AND EXECUTIVE SUMMARY

1.1. PURPOSE OF REPORT AND STUDY OBJECTIVES

Lōkahi, LLC (Lōkahi) was retained by High Street Residential to complete a Traffic Impact & Mitigation Analysis for the proposed Raintree Multi-Family development. The development is located at on the southwest corner of Raintree Drive and 87th Street in Scottsdale, Arizona. The objective of this Traffic Impact & Mitigation Analysis is to analyze the traffic related impacts of the proposed development to the adjacent roadway network. See **Figure 1** for the vicinity map.

The proposed site will be comprised of a total of 190 residential units, of which, there will be 150 one-bedroom, 36 two-bedroom, and four three-bedroom units. Additionally, approximately 178,564 square feet (SF) of office space will be located on the east half of the proposed site.

1.2. EXECUTIVE SUMMARY

This report presents the analyses and the results of a traffic study prepared for the proposed Raintree Multi-Family development that will be located on the southwest corner of Raintree Drive and 87th Street. The proposed development will be comprised of a 190-unit multi-family residential development and approximately 178,564 square feet (SF) of office space.

This Traffic Impact and Mitigation Analysis includes:

- Level of service analysis of existing conditions for the weekday AM and PM peak hours
- Trip Generation for the proposed development
- Most recent 3-year collision history
- Level of service analysis for the opening year (2022) weekday AM and PM peak hours
    - 2022 Build

The following are the six (6) intersections included in this study:

- Raintree Drive and Northsight Boulevard (1)
- Raintree Drive and Driveway A (2)
- Raintree Drive and 87th Street (3)
- Raintree Drive and Northbound/Southbound Pima Frontage Road (4)
- Northsight Boulevard and Evans Road/Driveway B (5)
- 87th Street and Driveway C (6)

Existing Capacity Analysis

The AM and PM peak hour existing conditions capacity analysis were completed for the five (5) existing study intersections. The results of the capacity analyses reveal the following locations with an existing level of service (LOS) E or F:

Raintree Drive and Northsight Boulevard (1) – Signalized

- EB through AM peak hour operates at LOS E
- EB right AM peak hour operates at LOS E
- WB through PM peak hour operates at LOS E
- WB right PM peak hour operates at LOS E
- NB through AM and PM peak hours operate at LOS E
- NB right AM and PM peak hours operate at LOS E
- SB left AM and PM peak hours operate at LOS E and LOS F, respectively
- SB through AM peak hour operate at LOS E
- SB right AM and PM peak hours operate at LOS E
- Overall intersection PM peak hour operates at LOS E

Raintree Drive and Driveway A (2) – Unsignalized

- NB left PM peak hour operates at LOS E
- SB left PM peak hour operates at LOS F

Raintree Drive and 87th Street (3) – Signalized

- NB left AM peak hour operates at LOS E
- NB right PM peak hour operates at LOS E

Raintree Drive and Northbound/Southbound Pima Frontage Road (4) – Signalized

- WB right AM and PM peak hours operate at LOS F and LOS E, respectively
- NB left AM peak hour operates at LOS E
- SB left PM peak hour operates at LOS E
- SB through PM peak hour operates at LOS E
- SB right AM peak hour operates at LOS F

Raintree Drive and Evans Road/Driveway B (5) – Unsignalized

- EB left PM peak hour operates at LOS F

Trip Generation

The proposed development is anticipated to generate 2,773 weekday daily trips with 275 and 289 vehicles during the AM and PM peak hours, respectively.

Future Conditions - Year 2022

The opening year (2022) analysis was completed with the build out (build) of the proposed development. An annual growth rate of 1.0% was applied to the existing traffic volumes to create the future background traffic volumes for year 2022.

Capacity analyses were completed for both the AM and PM peak hours for year 2022, with the build out of the proposed Raintree Multi-Family development. The results of the year 2022 capacity analyses reveal that all study area intersections operate with movements at a LOS D or better, with the exception of:

Raintree Drive and Driveway A (2) – Unsignalized

- NB left AM and PM peak hours operate at LOS E and F, respectively
- SB left AM and PM peak hours operate at LOS F

Raintree Drive and Evans Road/Driveway B (5) – Unsignalized

- EB left AM and PM peak hours operate at LOS E and LOS F, respectively

Delays at stop-controlled intersections in urban areas during peak hours are not uncommon. Typically, drivers will opt to make these turn movements at signalized intersections.

Raintree Drive Extension Design Concept Report

In June 2014, a Raintree Drive Extension Design Concept Report (DCR) was prepared for the City of Scottsdale. The DCR analyzed the segment between Thunderbird Road/Scottsdale Road to SR 101L and focused on addressing transportation and access issues. This DCR ultimately recommended a preferred configuration for the Raintree corridor.

The recommendation included the construction of a roundabout at the intersection of Raintree Drive and Northsight Boulevard (1). In addition, several configurations of the two intersections, Raintree Drive and 87th Street (3), and Raintree Drive and Northbound/Southbound Pima Frontage Road (4) were evaluated. While multiple alternatives have been provided for this interchange, it is anticipated the existing Single Point Urban Interchange (SPUI) will be modified to a Tight Diamond Interchange (TDI).

As part of the DCR, year 2030 conditions were analyzed. This analysis results in the intersection operating at acceptable LOS during the AM and PM peak hours. Acknowledging the comprehensive efforts of the DCR including meticulous modeling efforts, in traffic software such as RODEL and Vissim, the difference in the approach volumes shown in the DCR for year 2030 along with the year 2022 build traffic volumes for the proposed Raintree Multi-Family development were calculated.

Traffic Volume Comparison

Intersection	DCR - YEAR 2030 VOLUMES		YEAR 2022 BUILD VOLUMES		AM PEAK HOUR DIFFERENCE	PM PEAK HOUR DIFFERENCE
	AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR		
Raintree Drive and Northsight Boulevard (1)						
Eastbound Approach Volume	650	1,030	649	1,008	0.2%	2.1%
Westbound Approach Volume	1,200	950	1,250	1,243	-4.2%	-30.8%
Northbound Approach Volume	210	760	291	747	-38.6%	1.7%
Southbound Approach Volume	230	530	404	630	-75.7%	-18.9%
Raintree Drive and 87th Street (3)						
Eastbound Approach Volume	590	1,570	672	1,588	-13.9%	-1.1%
Westbound Approach Volume	1,990	1,230	2,018	1,356	-1.4%	-10.2%
Northbound Approach Volume	90	670	121	610	-34.4%	9.0%
Southbound Approach Volume	220	260	302	300	-37.3%	-15.4%
Raintree Drive and Southbound Pima Frontage Road (7) Raintree Drive and Northbound Pima Frontage Road (8)						
Eastbound Approach Volume	570	2,170	754	1,991	-32.3%	8.2%
Westbound Approach Volume	1,490	1,140	1,156	1,142	22.4%	-0.2%
Northbound Approach Volume	1,330	1,190	1,130	863	15.0%	27.5%
Southbound Approach Volume	1,330	1,230	1,311	1,079	1.4%	12.3%

Recommendations

The following are the recommended improvements to be constructed with the build out of the proposed Raintree Multi-Family development.

87th Street and Driveway B (6)

- Buildout of right-in and right-out access, including southbound right turn deceleration lane.

As with any new development and potential change in traffic patterns, the following is recommended:

- **Monitor and Adjust Signal Timing**
  Monitor traffic patterns in the area and if necessary, adjust nearby signal timing

2. PROPOSED DEVELOPMENT

The study area is located in the City of Scottsdale, Arizona, approximately one-tenth of a mile west of State Route Loop 101 (SR 101L). The proposed Raintree Multi-Family development will be located on the southwest corner of Raintree Drive and 87th Street. See **Figure 1** for a vicinity map.

The proposed development will be comprised of residential and office land uses. A total of 190 residential units will be provided on the west side of the site. Of the 190 total units, there will be 150 one-bedroom, 36 two-bedroom, and four (4) three-bedroom units. In addition, approximately 178,564 square feet (SF) of office space will be located on the east side of the proposed site.

There are three (3) proposed access points to the development:

Raintree Drive and Driveway A (2) is an existing full access driveway, allowing all movements in to and out of the site.

Northsight Boulevard and Evans Road/Driveway B (5) is an existing full access driveway, allowing all movements in to and out of the site.

87th Street and Driveway C (6), located approximately 350 feet south of Raintree Drive, is a proposed driveway that will allow for right-in and right-out movements and includes a southbound right turn deceleration lane.

See **Figure 2** and **Appendix A** for the proposed site plan.

See **Figure 3** for study area.

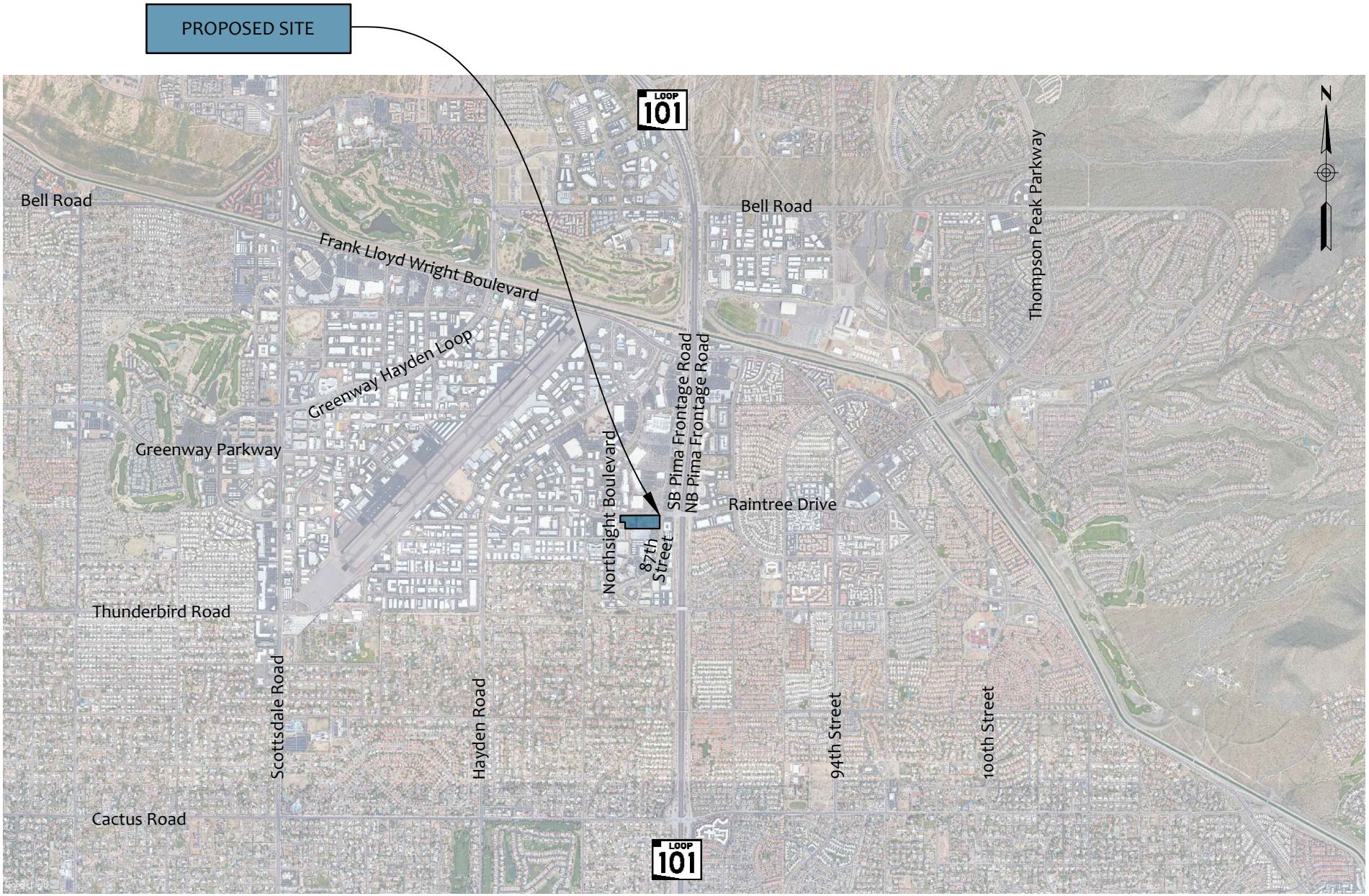
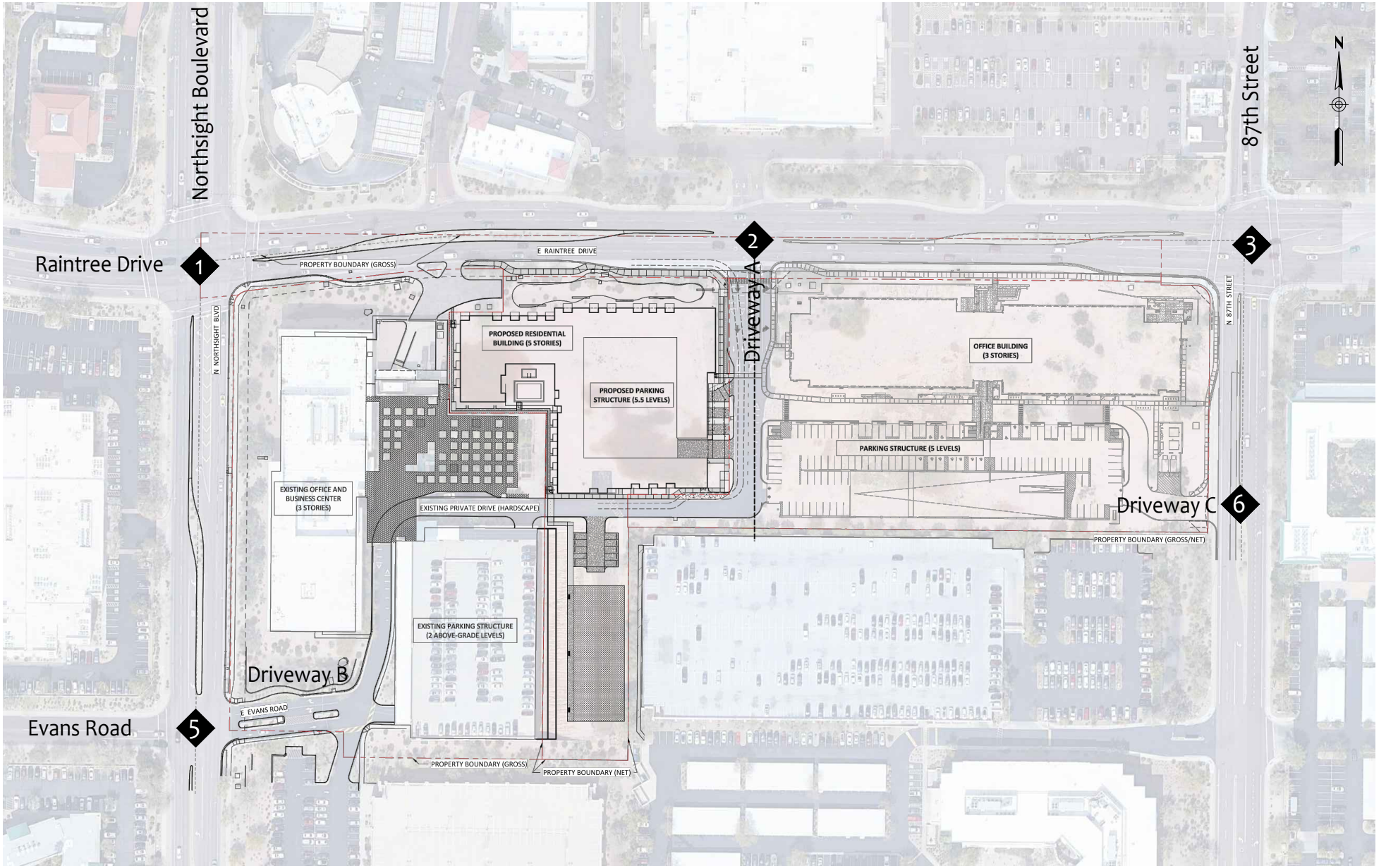


FIGURE 1 | VICINITY MAP

19-ZN-2019
3/10/2020

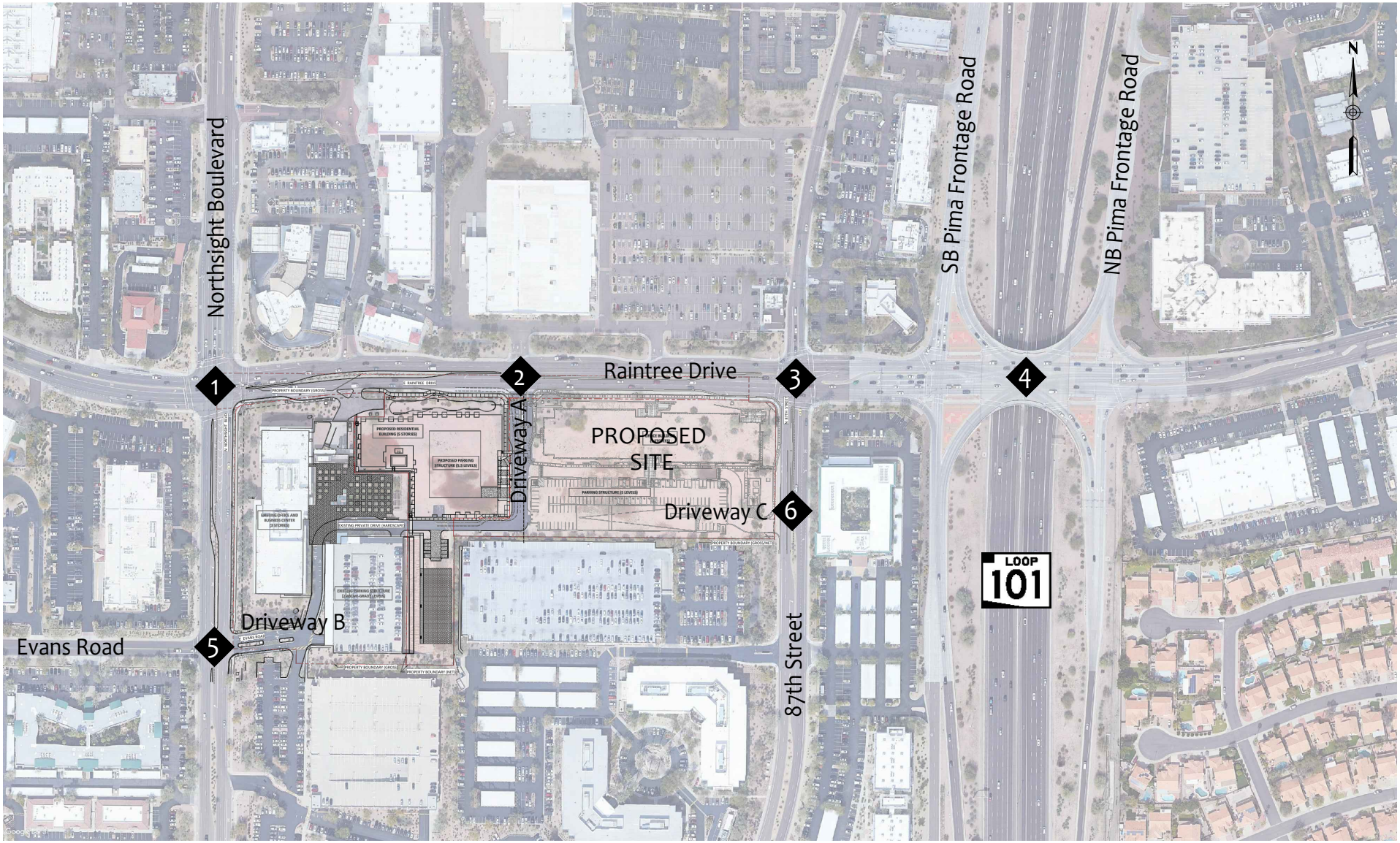


Legend

X Intersection

FIGURE 2 | SITE PLAN

19-ZN-2019
3/10/2020



Legend

X Intersection

FIGURE 3 | STUDY AREA

19-ZN-2019
3/10/2020

3. AREA CONDITIONS

The study area is located in the City of Scottsdale, Arizona. **Sections 3.1** and **3.2** provide detailed descriptions of the study roadway segments and intersections.

3.1. STUDY ROADWAY SEGMENTS

Raintree Drive, bordering the proposed development to the north, runs east-west and provides two (2) through lanes for each direction of travel, with a raised landscaped median. There is a posted speed limit of 35 miles per hour (mph). The City of Scottsdale classifies Raintree Drive as a minor arterial, within the study area, according to the *City of Scottsdale Master Transportation Plan,* dated July 5, 2016. The City of Scottsdale's *2018 Average Daily Segment Traffic (ADT) Volumes* map reports and ADT of 30,900 vehicles per day, east of the Arizona State Route 101.

Northsight Boulevard generally runs north-south and provides two (2) through lanes for each direction of travel, with a raised landscaped median. There is a posted speed limit of 40 miles per hour (mph). The City of Scottsdale classifies Northsight Boulevard as a major collector, within the study area, according to the *City of Scottsdale Master Transportation Plan,* dated July 5, 2016. The City of Scottsdale's *2018 Average Daily Segment Traffic (ADT) Volumes* map reports and ADT of 11,900 vehicles per day, north of Raintree Drive.

87th Street, bordering the proposed development to the east, runs north-south and provides two (2) through lane in each direction of travel, south of Raintree Drive. The City of Scottsdale classifies 87th Street as a major collector within the study area, according to the *City of Scottsdale Master Transportation Plan,* dated July 5, 2016. There is a posted speed limit of 35 miles per hour (mph).

3.2. STUDY INTERSECTIONS

Raintree Drive and Northsight Boulevard (1) currently operates as a signalized intersection. The northbound approach provides one (1) dedicated left turn lane, one (1) through lane, and one (1) shared through-right turn lane. The southbound approach provides two (2) left turn lanes, two (2) through lanes, and one (1) dedicated right turn lane. The eastbound and westbound approaches provide one (1) dedicated left turn lane, two (2) through lanes, and one (1) dedicated right turn lane.

Raintree Drive and Driveway A (2) currently operates as a two-way stop-controlled intersection, with stop control on the northbound and southbound approaches. The northbound approach provides one (1) shared left-through lane and one (1) dedicated right turn lane. The southbound approach is assumed to provide one (1) shared left-through lane and one (1) dedicated right turn lane. The eastbound and westbound approaches provide one (1) dedicated left turn lane, two (2) through lanes, and one (1) dedicated right turn lane.

Raintree Drive and 87th Street (3) currently operates as a signalized intersection. The northbound approach provides one (1) dedicated left turn lane, one (1) through lane, and one (1) dedicated right turn lane. The southbound approach provides one (1) dedicated left turn lane, and one (1) shared through-right turn lane. The eastbound and westbound approaches provide one (1) dedicated left turn lane, two (2) through lanes, and one (1) dedicated right turn lane.

Raintree Drive and Northbound/Southbound Pima Frontage Road (4) is a Single-Point Urban Interchange (SPUI) that currently operates as a signalized intersection. The northbound approach provides two (2) left turn lanes, one (1) through lane, and one (1) shared through-right turn lane. The southbound approach provides two (2) left turn lanes, two (2) through lanes, and one (1) dedicated right turn lane. The eastbound approach provides two (2) dedicated left turn lanes, two (2) through lanes, and one (1) dedicated right turn lane. The westbound approach provides two (2) dedicated left turn lanes, one (1) through lane, and one (1) shared through-right turn lane.

Northsight Boulevard and Evans Road/Driveway B (5) currently operates as a two-way stop-controlled intersection, with stop control on the eastbound and westbound approaches. The northbound and southbound approaches provide one (1) dedicated left turn lane, one (1) through lane, and one (1) shared through-right turn lane. The eastbound and westbound approaches provide one (1) shared left-through lane and one (1) dedicated right turn lane.

3.3. CITY OF SCOTTSDALE CAPITAL IMPROVEMENT PLAN PROJECTS

According to *Volume Three* of the *City of Scottsdale Capital Improvement Plan*, funding has been allocated for Fiscal Year 2019/2020 to improve the existing five-lane Raintree Drive, corridor between Hayden Road and SR 101L Freeway. This corridor improvement includes the redesign of the Raintree Drive and Northsight Boulevard (1) intersection converting it from the existing signalized intersection to a two (2) lane roundabout.

The Raintree Drive Extension Design Concept Report: Scottsdale Road to SR 101L, dated June 2014 provides details regarding the analysis, recommendations and design of this segment of roadway and intersection.

Therefore, for the purposes of this report, it is assumed that this project will be completed prior to the opening year of the proposed development.

The following intersection improvement will be assumed for the build out analysis:

Raintree Drive and Northsight Boulevard (1) is anticipated to provide the following lane configuration: The eastbound and westbound approaches are anticipated to operate with one (1) shared left-through lane and one (1) shared though-right turn lane. The northbound and southbound approaches are anticipated to provide one (1) shared left-through lane, and one (1) right turn lane.

In addition, *Volume Three* of the *City of Scottsdale Capital Improvement Plan* indicates that funding has been allocated for Fiscal Year 2019/2020 to improve the Raintree Drive and SR 101Linterchange. While multiple alternatives have been provided for this interchange, it is anticipated the existing Single Point Urban Interchange (SPUI) will be modified to a Tight Diamond Interchange (TDI). While *Volume Three* of the *City of Scottsdale Capital Improvement Plan* indicates that this project is anticipated be completed in the year 2025, for the purposes of this report, this modification is assumed to be built out prior to the build out of the Raintree Multi-Family development in the year 2022.

Raintree Drive and Northbound/Southbound Pima Frontage Road (4) is anticipated to operate as a Tight Diamond Interchange. It is assumed to geometrically operate as the following two (2) intersections: Raintree Drive and Southbound Pima Frontage Road (7) and Raintree Drive and Northbound Pima Frontage Road (8).

Raintree Drive and Southbound Pima Frontage Road (7): The southbound approach is anticipated to provide two (2) left turn lanes, two (2) through lanes, and one (1) dedicated right turn lane. The eastbound approach is anticipated to provide four (4) through lanes, and one (1) dedicated right turn lane. The westbound approach is anticipated to provide two (2) dedicated left turn lanes and two (2) through lanes.

Raintree Drive and Northbound Pima Frontage Road (8): The northbound approach is anticipated to provide two (2) left turn lanes, one (1) through lane, and one (1) shared through-right turn lane. The westbound approach is anticipated to provide three (3) through lanes, and one (1) dedicated right turn lane. The westbound approach is anticipated to provide two (2) dedicated left turn lanes and two (2) through lanes.

3.4. SURROUNDING AREA LAND USE

Offices are located just south and west of the proposed site. Additionally, offices are located to the east, across 87th Street. Commercial development is located to the north, on the north side of Raintree Drive. This commercial development includes retail and food services.

3.5. SITE ACCESSIBILITY

Roadway System

The study area is located in the City of Scottsdale, Arizona approximately one-tenth of a mile west of the SR 101L. Scottsdale's street network is generally built as a one-mile grid system. Within the near vicinity of the proposed site there is a well-developed roadway network. The surrounding roadway network provides convenient access to SR 101L freeway interchanges.

Pedestrian Facilities

There are continuous sidewalks provided along Raintree Drive, Northsight Boulevard, and 87th Street. Marked crosswalks are provided at nearby signalized intersections, including Raintree Drive and Northsight Boulevard, Raintree Drive and 87th Street, Raintree Drive and South Pima Frontage Road, and Raintree Drive and North Pima Frontage Road.

Access to the Arizona Canal Trail is located approximately one mile east and approximately three-quarters of a mile north of the proposed development. The Arizona Canal Trail provides paved and unpaved pathways that follow the Arizona Canal through Scottsdale, Phoenix, Glendale, and Peoria.

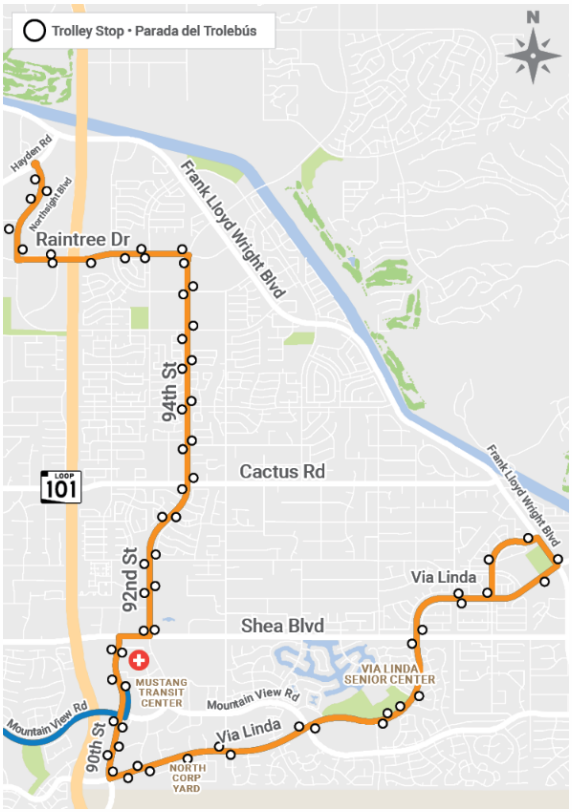
Bicycle Facilities, Trails and Pathways

Bike lanes are currently provided along Northsight Boulevard, a bike route is currently provided along Raintree Boulevard, west of Thompson Peak Parkway to Northsight Boulevard, and the Central Arizona Project Canal is located less than two (2) miles northeast of the proposed development and provides access to multi-use trails.

Transit Facilities

The City of Scottsdale provides five trolley routes. The Mustang Route (MSTG) circulates around the north Scottsdale area, including along Northsight Boulevard, Raintree Drive, 94th Street, 92nd Street, 90th Street, Via Linda, and Frank Lloyd Wright Boulevard. A trolley stop is located on Northsight Boulevard at the intersection of Raintree Drive and Northsight Boulevard. Additionally, there is one (1) eastbound and one (1) westbound stop located along Raintree Drive, west of 87th Street. This trolley route operates every 20 minutes between 4:42 am and 11:15 pm Monday – Friday and 5:13 am – 10:45 pm Saturday and Sunday. See **Figure 4**.

Figure 4 – City of Scottsdale Trolley Mustang Route



3.6. COLLISION HISTORY

The most recent 3-year collision history, from January 2016 to December 2018, was obtained from the City of Scottsdale. See **Appendix B** for collision data. The data included the following intersections:

- Raintree Drive and Northsight Boulevard (1)
- Raintree Drive and Driveway A (2)
- Raintree Drive and 87th Street (3)
- Northsight Boulevard and Evans Road/Driveway B (5)

Raintree Drive and Northsight Boulevard (1)

During the three-year period, there were a total of 51 crashes, of which 9 were non-incapacitating injuries, 10 possible injuries, 5 unknown, with the remaining being property damage only. There were a total of 18 left turn, 13 rear end, 12 angle, 6 sideswipe same direction, 1 single vehicle, and 1 other crashes.

Of the 18 reported left turn collisions, 10 collisions involved northbound or southbound vehicles performing a left turn and colliding with an eastbound or westbound vehicle. In addition, 21 collisions involved vehicles failing to yield the right of way. As previously mentioned, the City of Scottsdale's Capital Improvement Plan includes a project that will modify this intersection to construct a roundabout. This intersection improvement may help to reduce these types of collisions.

Raintree Drive and Driveway A (2)

During the three-year period, there were a total of 3 crashes, of which 1 was a non-incapacitating injury and 2 property damage only. There were a total of 2 rear end and 1 angle crashes.

Raintree Drive and 87th Street (3)

During the three-year period there were a total of 36 crashes, of which 1 was non-incapacitating injuries, 7 possible injuries, 3 unknown, with the remaining being property damage only. There were a total of 12 rear ends, 11 angle, 7 left turn, 4 sideswipe same direction, and 2 other crashes.

Of the reported 12 rear end collisions, 9 collisions involved vehicles in the eastbound direction of travel. This may be attributed to the proximity of the SR 101L interchange. As previously mentioned, the City of Scottsdale's Capital Improvement Plan includes a project that will modify the Raintree Drive and SR 101L to operate as a Tight Diamond Interchange. These geometric changes will alter the traffic operations, which may result in a positive impact towards reducing crashes. In the meantime, prior to the interchange improvement, potential near-term improvements may include evaluating the signal timing of the yellow and all-red phases and verifying the sight visibility of the existing signal heads.

Northsight Boulevard Evans Road/Driveway B (5)
During the three-year period there were a total of 5 crashes, of which 1 was non-incapacitating injuries, 1 possible injury, 3 unknown, with the remaining being property damage only. There were a total of 4 angle and 1 rear end crashes.

3.7. COLLISION RATES

The City of Scottsdale's *2018 Traffic Volume and Collision Rate Data* report provides collision rate and traffic volume information on major roadway segments and at major intersections within the City. Segment collisions are collisions that occur on a major street more than 100 feet from the major intersections that define the segment, including at minor intersections within the segment. Intersection collisions are collisions that occur at or within 100 feet of a major intersection.

The collision rates and city-wide rankings for the study roadway segments are shown in **Table 1**. The collision rates and city-wide rankings for the study intersections are shown in **Table 2**.

Table 1 – Collision Rates - Study Roadway Segments

Segment	From	To	Collision Rate	Rank
Northsight Boulevard	Raintree Drive	Hayden Road	5.42	10
Raintree Drive	Northsight Boulevard	101 Freeway	3.50	31
Raintree Drive	Hayden Road	Northsight Boulevard	2.69	53
2018 City of Scottsdale Average Segment Collision Rate			1.53	

Table 2 – Collision Rates - Study Intersections

Intersection	Collision Rate	Rank
Raintree Drive and Northsight Boulevard	1.21	14
101 Freeway and Raintree Drive	0.82	49
2018 City of Scottsdale Average Intersection Collision Rate	0.58	

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4. EXISTING CONDITIONS

4.1. EXISTING LAND USE

The approximate 8.24-acre site is currently undeveloped land. The site is currently zoned Industrial Park (I-1). This zoning accommodates light manufacturing, light industrial, office, and supportive uses for major employment opportunities. See **Appendix C** for detailed parcel information.

4.2. EXISTING TRAFFIC COUNTS

A local data collection firm, Field Data Services of Arizona, Inc., was utilized to collect traffic counts. On Thursday, November 14, 2020 turning movement counts were obtained from 7:00 to 9:00 am and from 4:00 to 6:00 pm at the following intersection:

- Raintree Drive and Northsight Boulevard (1)
- Raintree Drive and Driveway A (2)
- Raintree Drive and 87th Street (3)
- Northsight Boulevard and Evans Road/Driveway B (5)

Additionally, on Thursday, November 14, 2020, bi-directional tube counts for 24-hours in 15-minute intervals were collected along the following three (3) roadway segments:

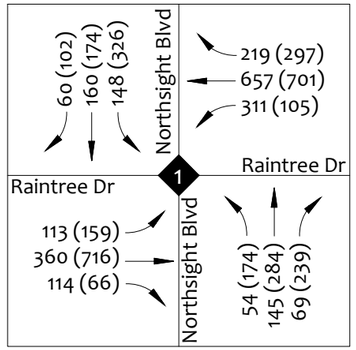
- Raintree Drive, east of Northsight Boulevard
- Northsight Boulevard, south of Raintree Drive
- 87th Street, south of Raintree Drive

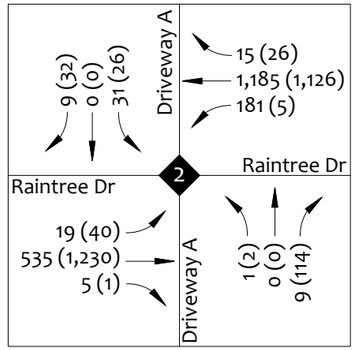
In addition, turning movement counts were collected at Raintree Drive and Northbound/Southbound Pima Frontage Road (4) on Thursday, February 12, 2019.

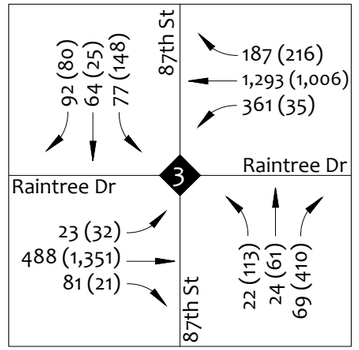
The turning movement counts were analyzed for the highest 1-hour within each time period. These are the peak hours that were analyzed throughout this study.

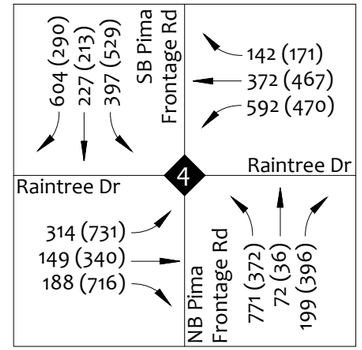
- AM Peak Hour 8:00 am – 9:00 am
- PM Peak Hour 4:30 pm – 5:30 pm

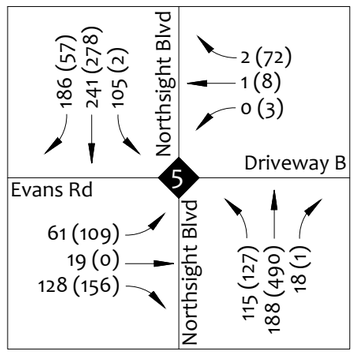
The City of Scottsdale seasonal adjustment factors were used to adjust the traffic counts. The traffic volumes were adjusted based on the month the counts were taken. See **Appendix D** for detailed count data. See **Figure 5** for the existing adjusted AM and PM peak hour weekday traffic volumes.

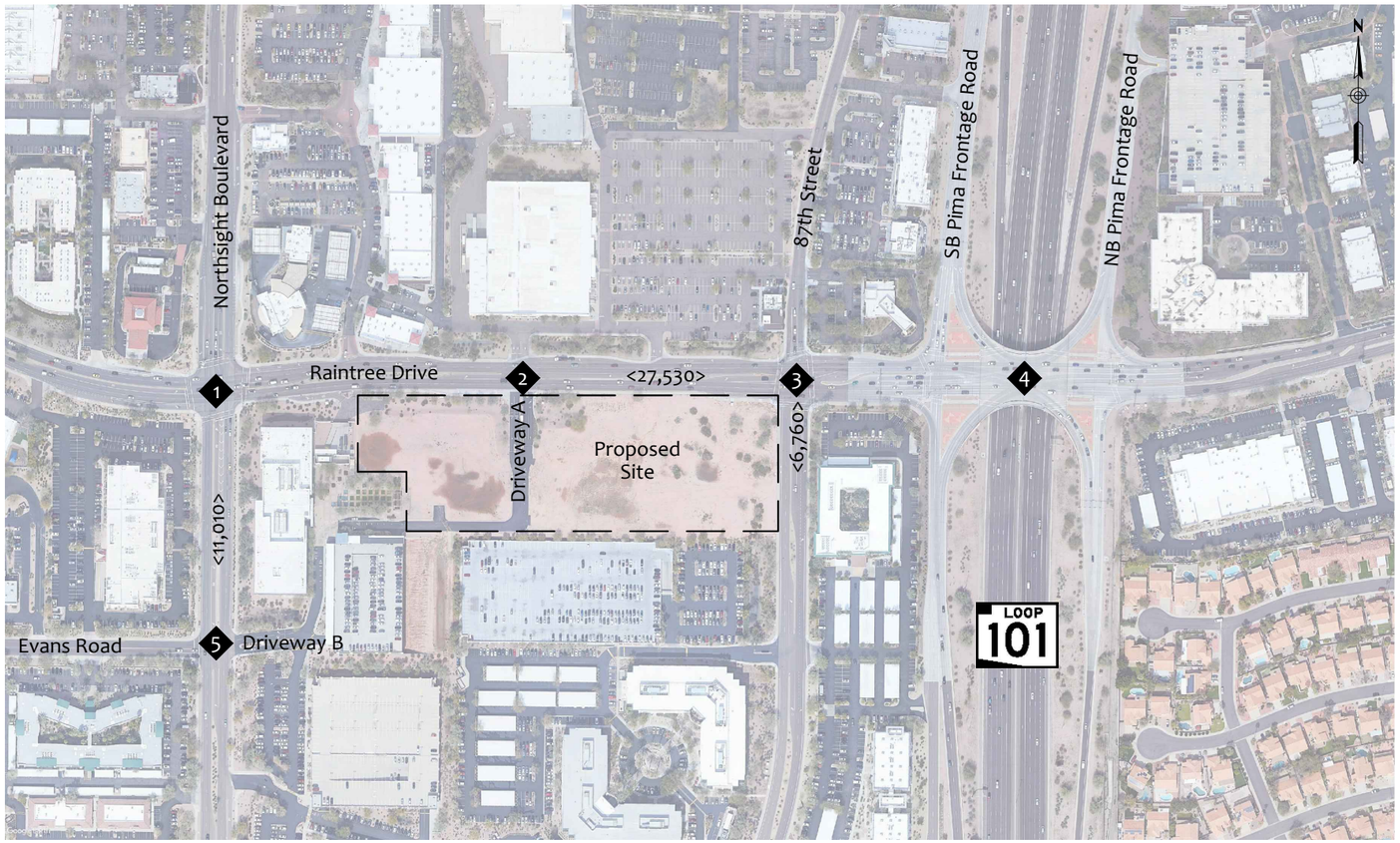












Legend

AM (PM)	Peak Hour Traffic Volumes
X	Intersection
<ADT>	Average Daily Traffic Volume

FIGURE 5 I EXISTING TRAFFIC VOLUMES

4.3. EXISTING CAPACITY ANALYSIS

The existing conditions capacity analysis was completed for the existing study intersections. The capacity and level of service for the study area intersections were evaluated using the methodology presented in the 6th *Edition of the Highway Capacity Manual*. Traffic analysis software, Synchro Version 10.3, was used to perform the analyses using the existing Peak Hour Factor (PHF) obtained from the traffic counts. The existing signal timing provided by the City of Scottsdale. See **Appendix E** for the existing signal timing.

Table 3 is from the 6th *Edition of the Highway Capacity Manual* Exhibit 20-2, which lists the Level of Service (LOS) thresholds for signalized and stop-controlled intersections.

Table 3 – Level of Service Criteria

Level of Service	Control Delay per Vehicle (s/veh)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	0 - 10
B	> 10-20	> 10–15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

The results of the capacity analyses reveal the following locations with an existing level of service (LOS) E or F:

Raintree Drive and Northsight Boulevard (1) – Signalized

- EB through AM peak hour operates at LOS E
- EB right AM peak hour operates at LOS E
- WB through PM peak hour operates at LOS E
- WB right PM peak hour operates at LOS E
- NB through AM and PM peak hours operate at LOS E
- NB right AM and PM peak hours operate at LOS E
- SB left AM and PM peak hours operate at LOS E and LOS F, respectively
- SB through AM peak hour operate at LOS E
- SB right AM and PM peak hours operate at LOS E
- Overall intersection PM peak hour operates at LOS E

Raintree Drive and Driveway A (2) – Unsignalized

- NB left PM peak hour operates at LOS E
- SB left PM peak hour operates at LOS F

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Raintree Drive and 87th Street (3) – Signalized

- NB left AM peak hour operates at LOS E
- NB right PM peak hour operates at LOS E

Raintree Drive and Northbound/Southbound Pima Frontage Road (4) – Signalized

- WB right AM and PM peak hours operate at LOS F and LOS E, respectively
- NB left AM peak hour operates at LOS E
- SB left PM peak hour operates at LOS E
- SB through PM peak hour operates at LOS E
- SB right AM peak hour operates at LOS F

Raintree Drive and Evans Road/Driveway B (5) – Unsignalized

- EB left PM peak hour operates at LOS F

The existing AM and PM peak hour level of service and delay for unsignalized and signalized intersections are shown in **Table 4** and **Table 5**, respectively.

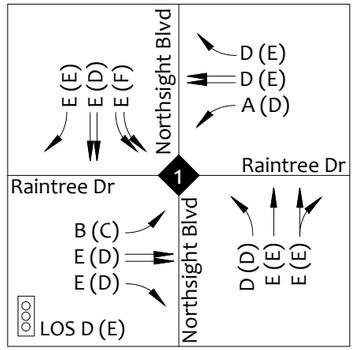
See **Figure 6** for the existing AM and PM peak hour capacity analysis. The detailed capacity analysis sheets can be found in **Appendix F**.

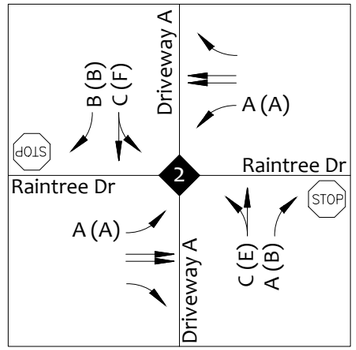
Table 4 – Existing Level of Service and Delay – Unsignalized Intersections

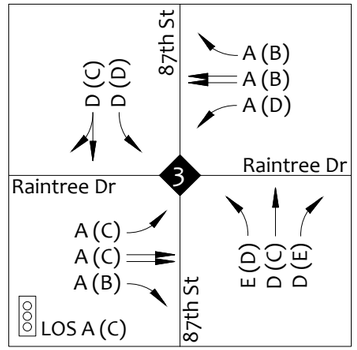
Intersection	Existing Conditions			
	AM PEAK		PM PEAK	
Unsignalized Intersections	LOS	DELAY	LOS	DELAY
Raintree Drive and Driveway A (2)				
Eastbound Left	A	9.2	A	9.1
Westbound Left	A	8.3	A	9.3
Northbound Shared Left-Through	C	16.9	E	39.3
Northbound Right	A	9.2	B	13.1
Southbound Shared Left-Through	C	23.3	F	62.7
Southbound Right	B	11.2	B	11.2
Northsight Boulevard and Driveway B (5)				
Eastbound Shared Left-Through	D	32.2	F	52.2
Eastbound Right	A	9.2	A	9.6
Westbound Shared Left-Through	D	25.4	D	29.4
Westbound Right	A	8.9	B	10.9
Northbound Left	A	8.3	A	8.1
Southbound Left	A	7.9	A	8.7

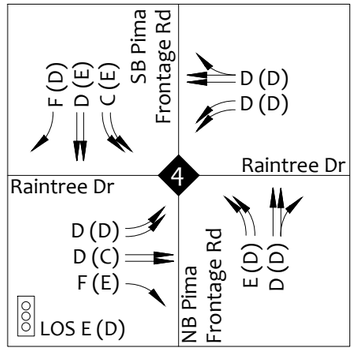
Table 5 – Existing Level of Service and Delay – Signalized Intersections

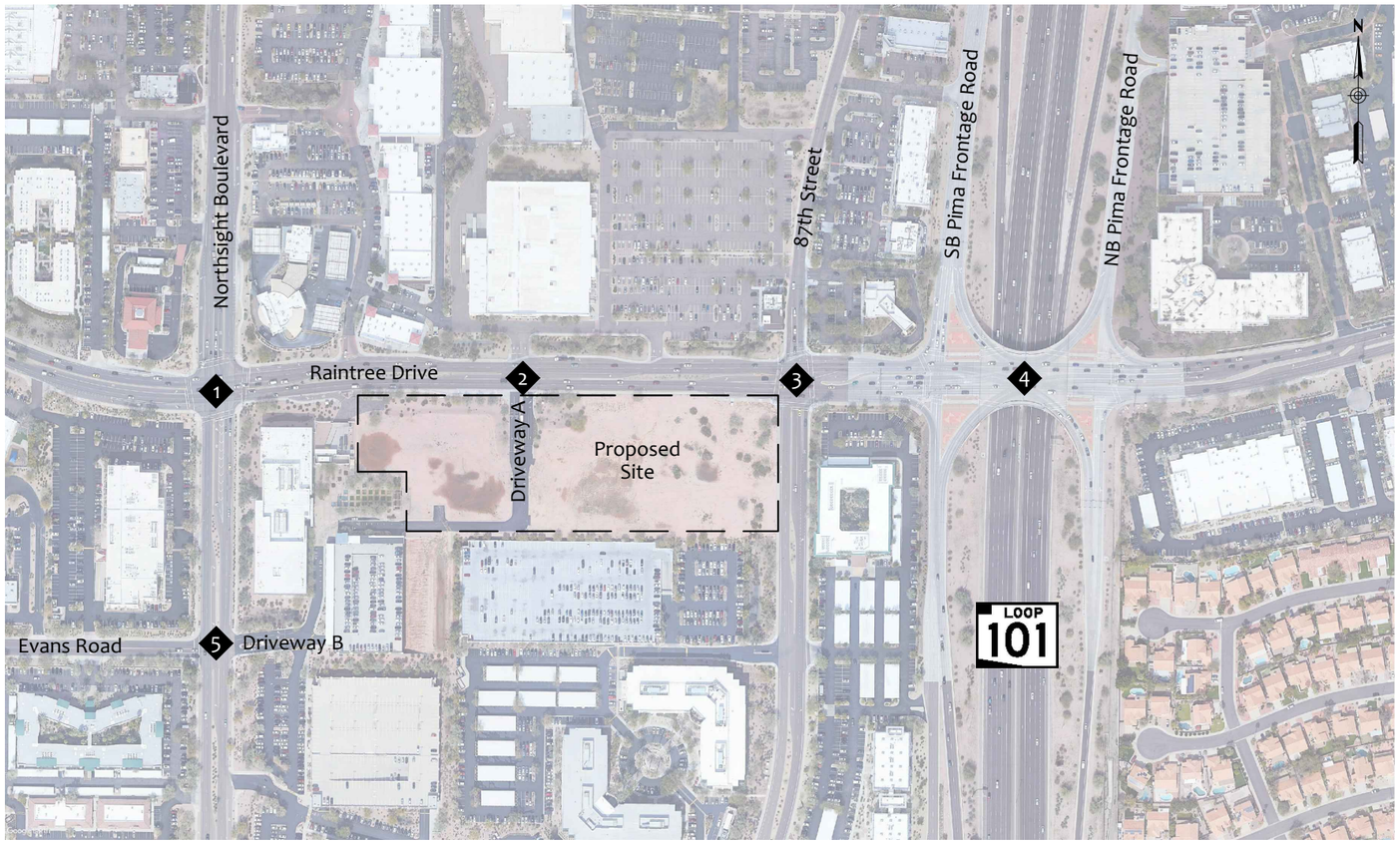
Intersection	Existing Conditions			
	AM PEAK		PM PEAK	
Signalized Intersections	LOS	DELAY	LOS	DELAY
Raintree Drive and Northsight Boulevard (1)				
Overall Intersection	D	43.2	E	58.9
Eastbound Left	B	18.8	C	32.7
Eastbound Through	E	63.3	D	53.0
Eastbound Right	E	58.7	D	35.7
Westbound Left	A	0.1	D	39.4
Westbound Through	D	43.4	E	60.5
Westbound Right	D	37.4	E	65.3
Northbound Left	D	52.7	D	42.6
Northbound Through	E	55.4	E	55.4
Northbound Shared Through-Right	E	56.4	E	58.9
Southbound Left	E	59.0	F	102.1
Southbound Through	E	55.8	D	52.9
Southbound Right	E	55.9	E	56.5
Raintree Drive and 87th Street (3)				
Overall Intersection	A	6.7	C	28.4
Eastbound Left	A	0.5	C	31.4
Eastbound Through	A	0.2	C	27.7
Eastbound Right	A	0.1	B	14.4
Westbound Left	A	1.2	D	38.3
Westbound Through	A	0.2	B	14.0
Westbound Right	A	0.1	B	11.4
Northbound Left	E	57.2	D	38.3
Northbound Through	D	46.1	C	31.0
Northbound Shared Through-Right	D	48.0	E	66.6
Southbound Left	D	50.2	D	39.7
Southbound Shared Through-Right	D	52.2	C	32.2
Raintree Drive and NB/SB Pima Frontage Road (4)				
Overall Intersection	E	73.1	D	50.0
Eastbound Left	D	47.8	D	54.0
Eastbound Through	D	54.8	C	30.4
Eastbound Right	F	201.0	E	60.1
Westbound Left	D	53.0	D	46.2
Westbound Shared Through-Right	D	41.3	D	41.4
Northbound Left	E	55.1	D	49.9
Northbound Shared Through-Right	D	51.8	D	51.4
Southbound Left	C	30.4	E	55.2
Southbound Through	D	46.9	E	55.7
Southbound Right	F	168.1	D	48.1











Legend

AM (PM)	Peak Hour Capacity Analysis
X	Intersection
	Lane Configuration

FIGURE 6 | EXISTING CAPACITY ANALYSIS

5. PROJECTED TRAFFIC

5.1. TRIP GENERATION

The trip generation for the proposed development was calculated utilizing the Institute of Institute of Transportation Engineers (ITE) publication entitled *Trip Generation, 10th Edition*. The ITE trip generation rates and fitted curve equations are based on studies that measure trip generation characteristics for various types of lane uses. The rates are expressed in terms of trips per unit of lane use type. This publication is the standard for the transportation engineering profession.

The trip generation for the proposed residential and general office development was calculated utilizing ITE Land Use 221 – Multifamily Housing (Mid-Rise) and Land Use 710 – General Office Building, respectively. Trip generation calculations are shown in **Table 6** below. Detailed trip generation calculations are provided in **Appendix G**.

Table 6 – Trip Generation – Proposed Development

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	1,034	68	18	50	84	51	33
General Office Building	710	178.564	1000 SF GFA	1,739	207	178	29	205	33	172
Total				**2,773**	**275**	**196**	**79**	**289**	**84**	**205**

The proposed development is anticipated to generate 2,773 weekday daily trips with 275 and 289 vehicles during the AM and PM peak hours, respectively.

5.2. TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution procedure determines the general pattern of travel for vehicles entering and leaving the proposed development. The trip distribution for the proposed Raintree Multi-Family is based on the distribution of the existing traffic. The trip distribution percentages are per the guidance from the City of Scottsdale Transportation. The trip distribution is shown in **Figure 7**.

The trip assignment was generally based on proximity of the driveways, permitted turn movements, as well as ease and probability of use. The site generated traffic volumes are shown in **Figure 8**.

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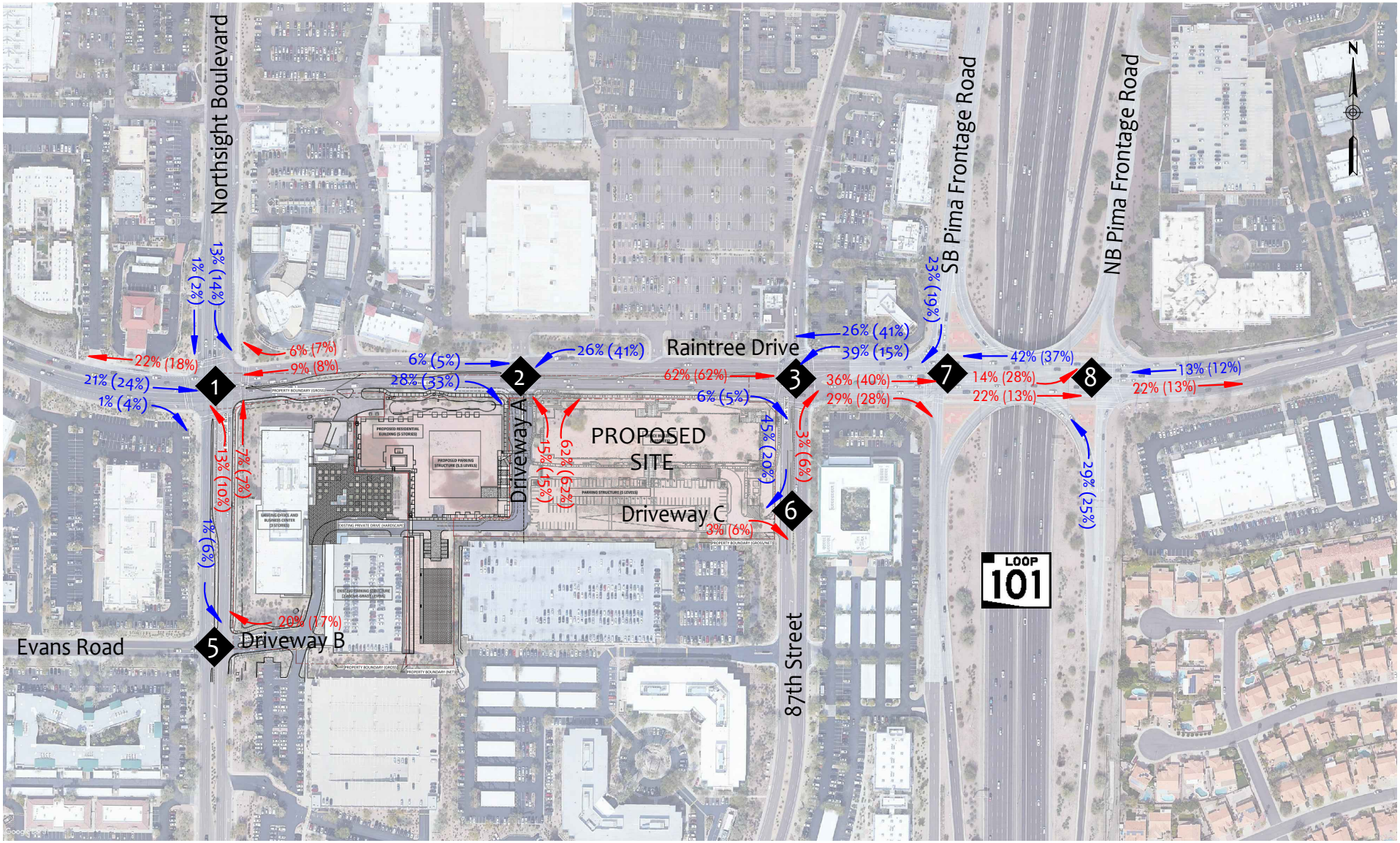

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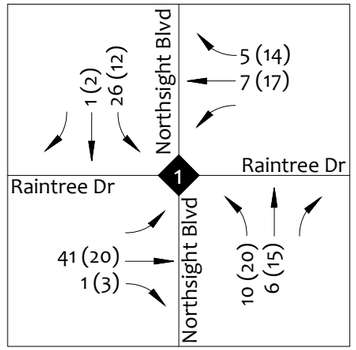
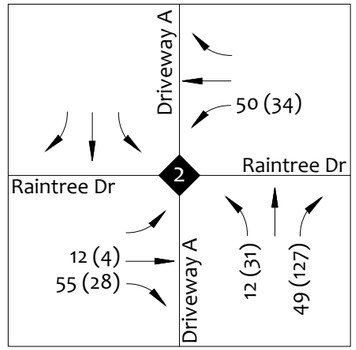
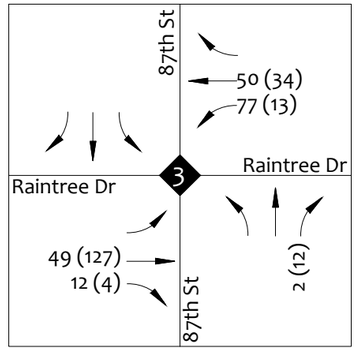
AM(PM) Inbound Trip Distribution Percentages

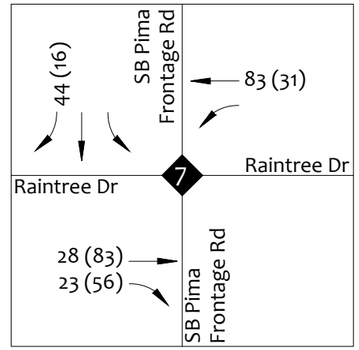
AM(PM) Outbound Trip Distribution Percentages

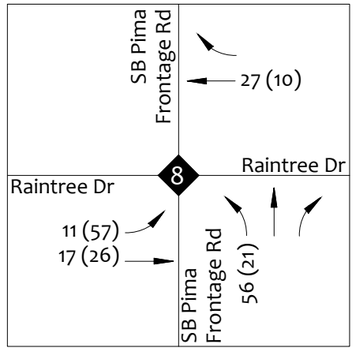
FIGURE 7 | TRIP DISTRIBUTION

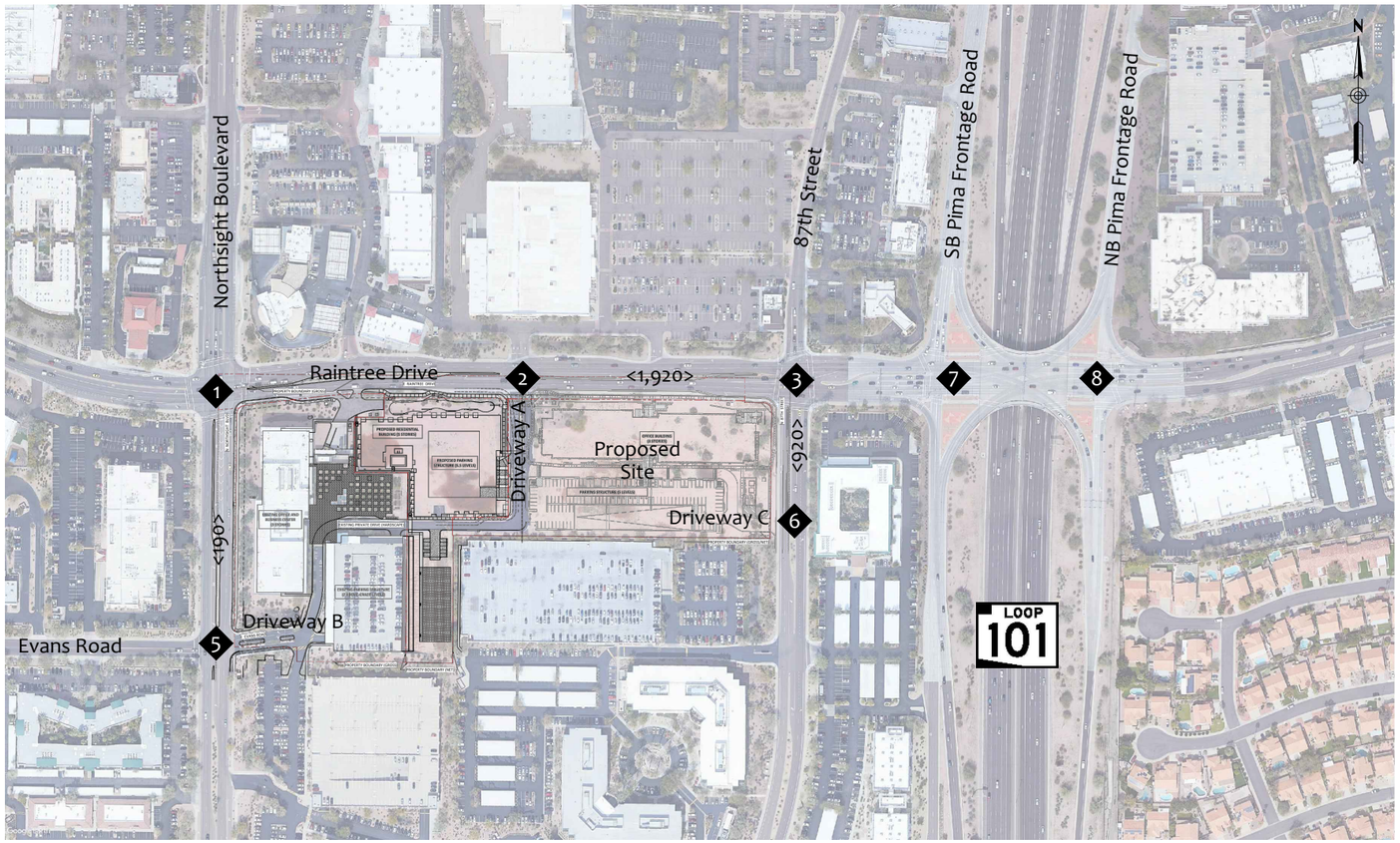


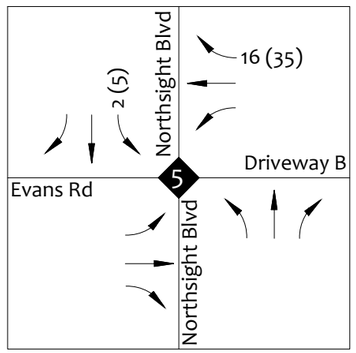


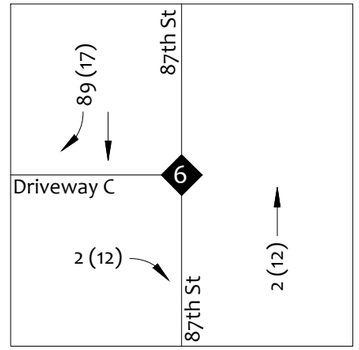












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AM (PM)	Peak Hour Traffic Volumes
X	Intersection
<ADT>	Average Daily Traffic Volume

FIGURE 8 | SITE TRAFFIC VOLUMES

6. FUTURE CONDITIONS (YEAR 2022 – OPENING YEAR)

The proposed Raintree Multi-Family is anticipated to be constructed and ready to open in the year 2022. This section analyzes the effects the proposed development will have on the surrounding roadway network during the opening year of 2022.

The Capital Improvement Plan projects described in **Section 3.3** were included in the year 2022 analyses.

6.1. YEAR 2022 BACKGROUND TRAFFIC VOLUMES

According to the 2019 Maricopa Associations of Governments (MAG) socioeconomic projections within the proposed study area, it is estimated that in the year 2055 the population will be approximately 17,019. MAG estimates that the 2018 population of the surrounding area to be 13,549. This results in an approximate annual growth rate of 0.62%.

As a conservative approach, a 1% annual growth rate was utilized. See **Appendix H** for the MAG socioeconomic projections.

Additionally, the traffic volumes of a known future development were added and distributed throughout the studied roadway network.

Surrounding Residential Development

A residential development is proposed in the surrounding area. This development is to be located the development is located north of Raintree Drive and west of 87th Street. According to the Raintree Traffic Impact & Mitigation Analysis, dated May 16, 2019, this development will be comprised of 330 dwelling units, and will be constructed in the year 2021. See **Figure 9** for the surrounding development's traffic volumes.

See **Appendix I** for the Raintree Traffic Impact & Mitigation Analysis.

See **Figure 10** for the year 2022 background traffic volumes, which includes a 1% annual growth applied to the existing traffic volumes and the surrounding residential development traffic volumes (**Figure 9**).

6.2. YEAR 2022 BUILD TRAFFIC VOLUMES

When the site traffic (**Figure 8**) is added to the year 2022 background traffic (**Figure 10**), the result is the 2022 build traffic volumes. This represents the traffic volumes with the build out of the proposed development. The year 2022 build traffic volumes are shown in **Figure 11**.

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6.3. YEAR 2022 BUILD CAPACITY ANALYSIS

As previously mentioned, Capital Improvement Plan projects described in **Section 3.3** were included in the year 2022 analyses. Therefore, for the clustered signalized freeway ramp intersections, the methodology presented in the *2000 Highway Capacity Manual* was utilized. Additionally, the signal timing was assumed to operate with a four-phase operation and a 120 second cycle length.

The capacity and level of service for the study area intersections were evaluated for the year 2022 build traffic volumes. A PHF of 0.92 was used.

The results of the year 2022 capacity analyses reveal that all study area intersections operate with movements at a LOS D or better, with the exception of:

Raintree Drive and Driveway A (2) – Unsignalized

- NB left AM and PM peak hours operate at LOS E and F, respectively
- SB left AM and PM peak hours operate at LOS F

Raintree Drive and Evans Road/Driveway B (5) – Unsignalized

- EB left AM and PM peak hours operate at LOS E and LOS F, respectively

Delays at stop-controlled intersections in urban areas during peak hours are not uncommon. Typically, drivers will opt to make these turn movements at signalized intersections.

The year 2022 AM and PM peak hour level of service and delay for unsignalized intersections is shown in **Table 7**.

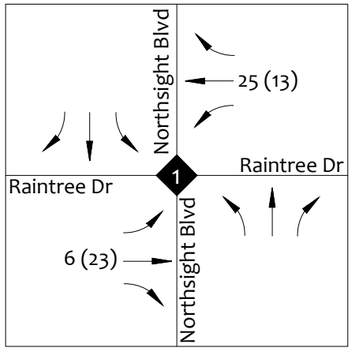
See **Figure 12** year 2022 AM and PM peak hour capacity analysis. The detailed capacity analysis sheets can be found **Appendix J**.

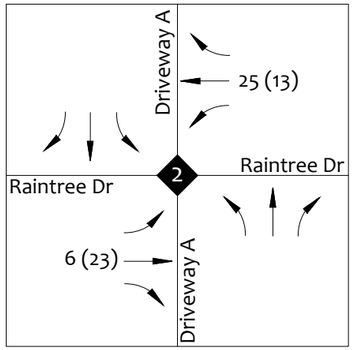
See **Section 7** regarding a comparison to the Raintree Drive Extension Design Concept Report, dated June 2014 for the following intersections:

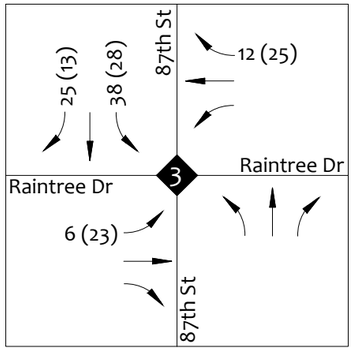
- Raintree Drive and Northsight Boulevard (1) – Roundabout
- Raintree Drive and 87th Street (3) – Signalized
- Raintree Drive and Southbound Pima Frontage Road (7) – Signalized
- Raintree Drive and Northbound Pima Frontage Road (8) – Signalized

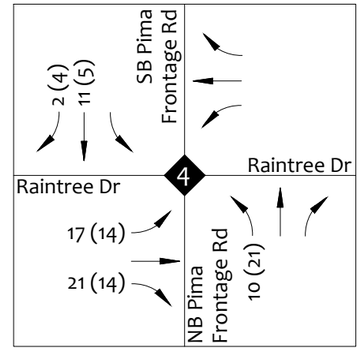
Table 7 – Year 2022 Level of Service and Delay – Unsignalized Intersections

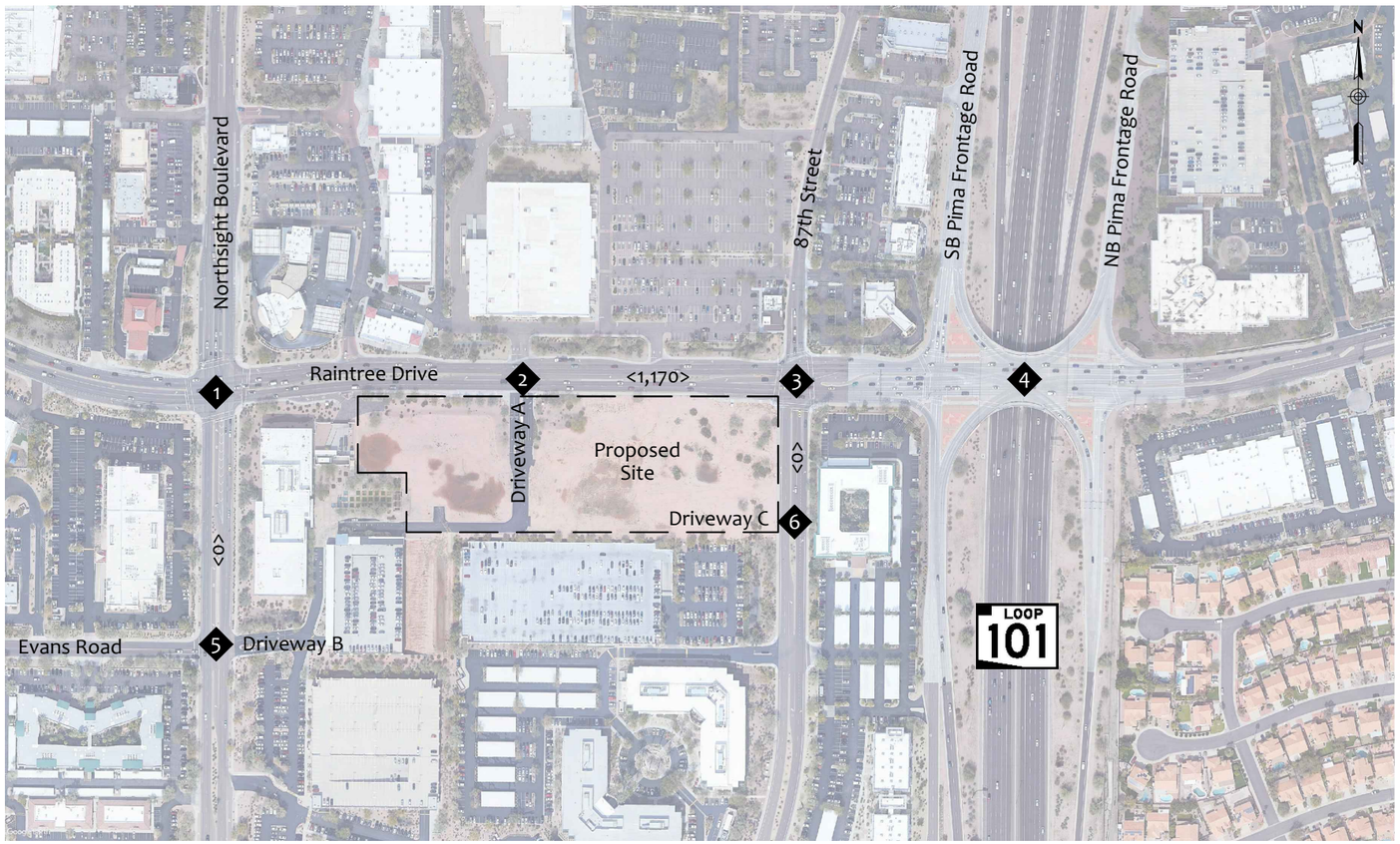
Intersection	Year 2022 Build			
	AM PEAK		PM PEAK	
Intersections	LOS	DELAY	LOS	DELAY
Raintree Drive and Driveway A (2)				
Eastbound Left	A	9.4	A	9.1
Westbound Left	B	10.5	B	13.4
Northbound Shared Left-Through	E	41.4	F	341.9
Northbound Right	B	10.8	D	33.1
Southbound Shared Left-Through	F	372.5	F	1059.6
Southbound Right	B	11.5	B	11.2
Northsight Boulevard and Driveway B (5)				
Eastbound Shared Left-Through	E	47.9	F	73.4
Eastbound Right	B	10.8	B	10.5
Westbound Shared Left-Through	D	29.5	D	31.1
Westbound Right	A	8.8	B	10.9
Northbound Left	A	9.0	A	8.5
Southbound Left	A	8.0	A	8.6
87th Street and Driveway C (6)				
Eastbound Right	B	10.0	A	8.6

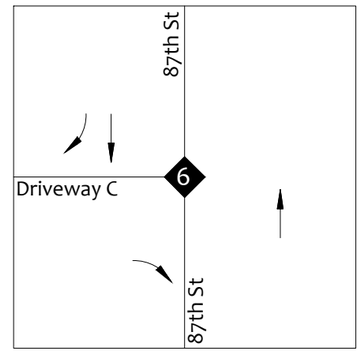








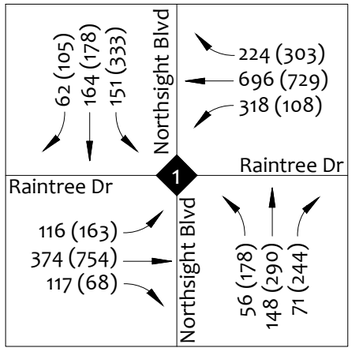


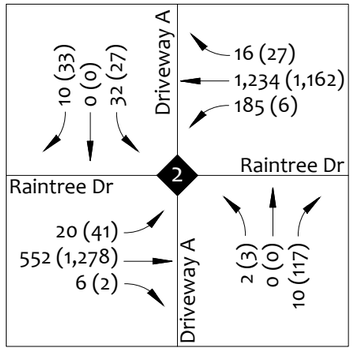


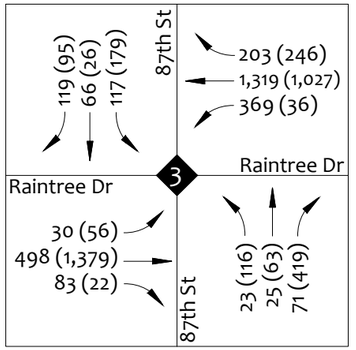
Legend

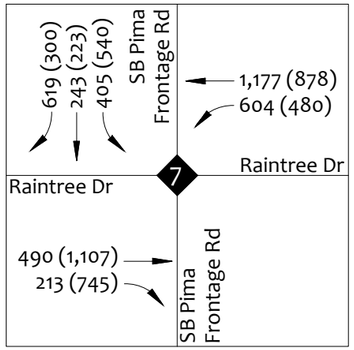
AM (PM)	Peak Hour Traffic Volumes
X	Intersection
<ADT>	Average Daily Traffic Volume

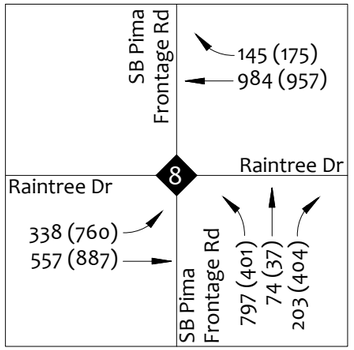
FIGURE 9 | SURROUNDING DEVELOPMENT TRAFFIC VOLUMES

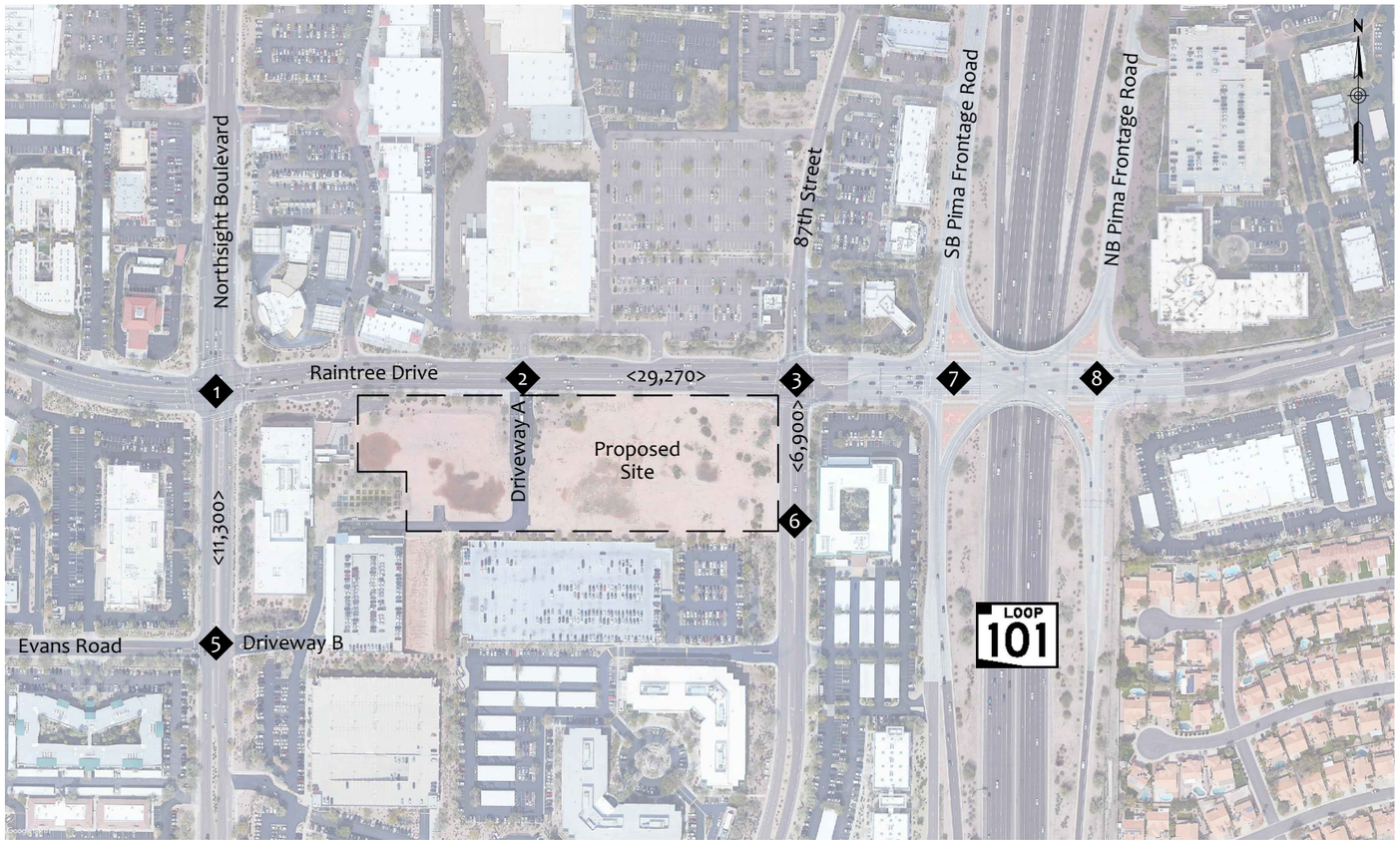


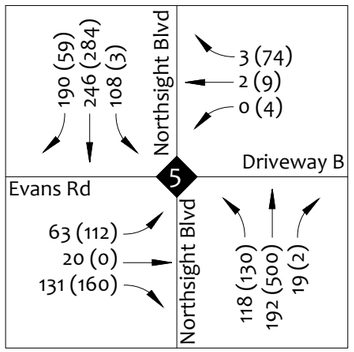


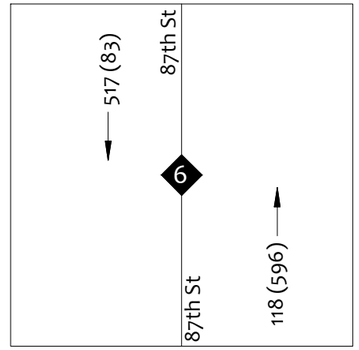








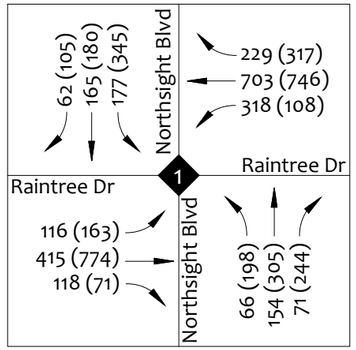


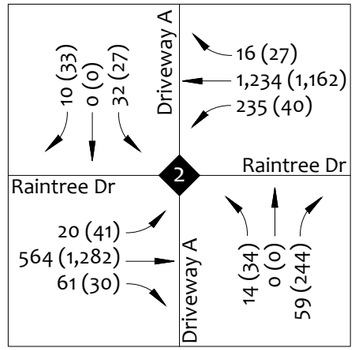


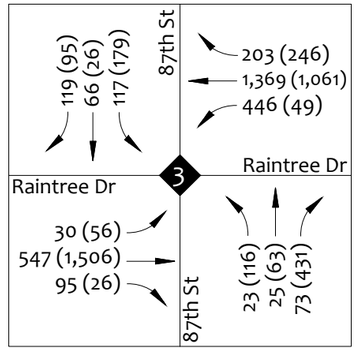
Legend

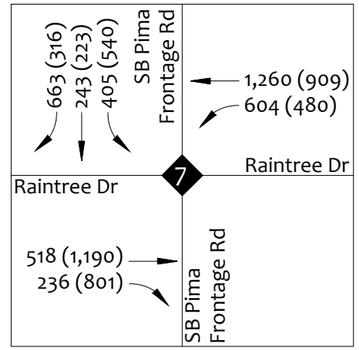
AM (PM)	Peak Hour Traffic Volumes
X	Intersection
<ADT>	Average Daily Traffic Volume

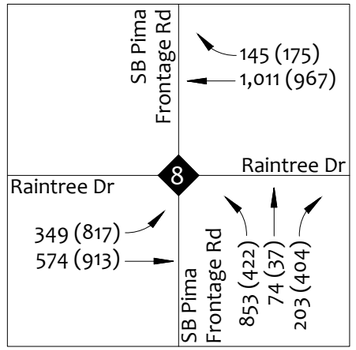
FIGURE 10 | YEAR 2022 BACKGROUND TRAFFIC VOLUMES

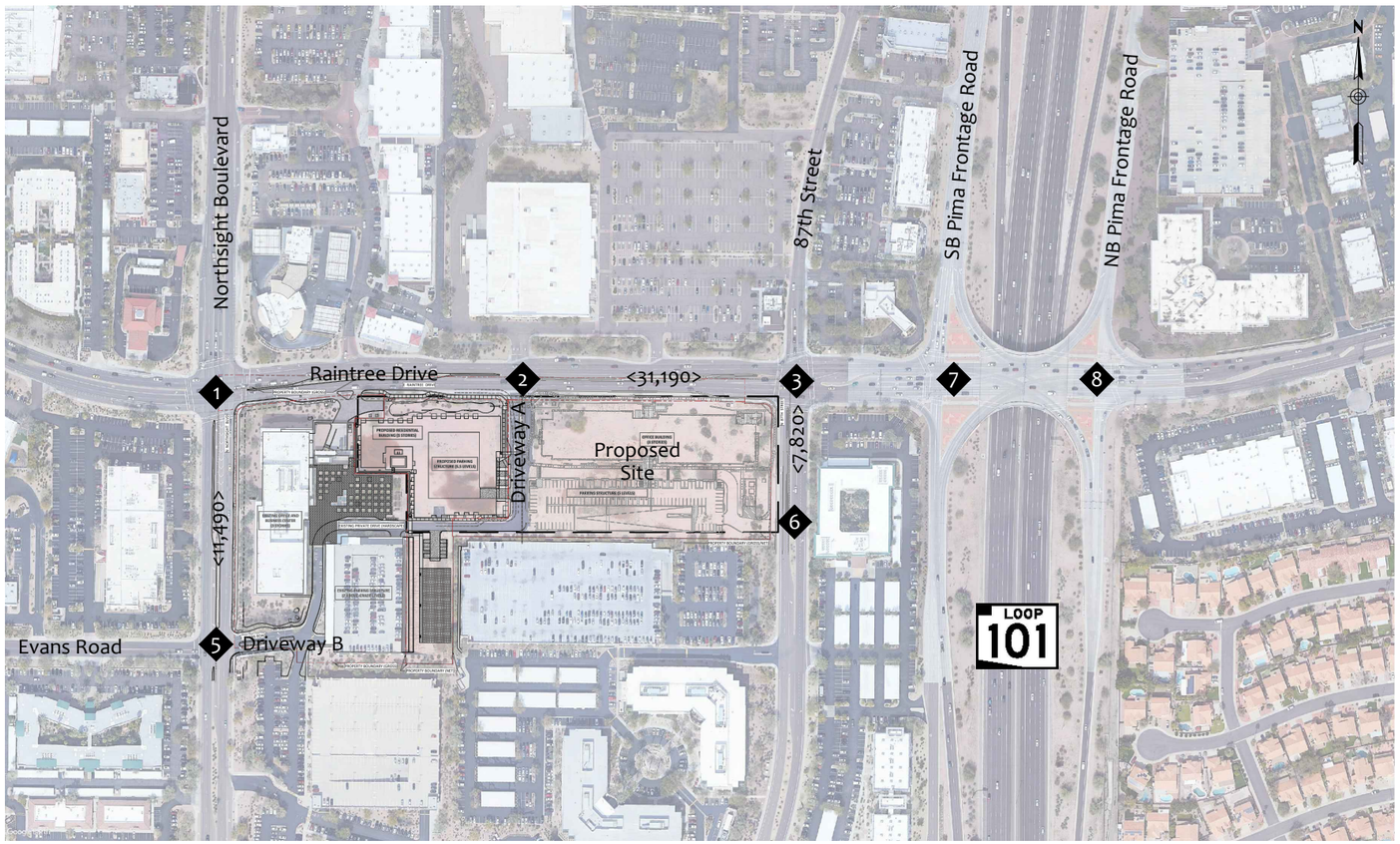


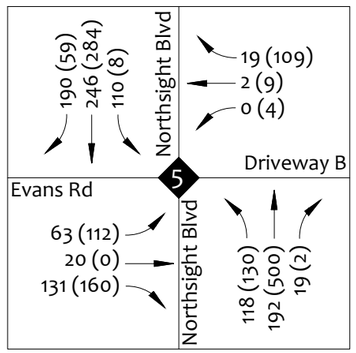


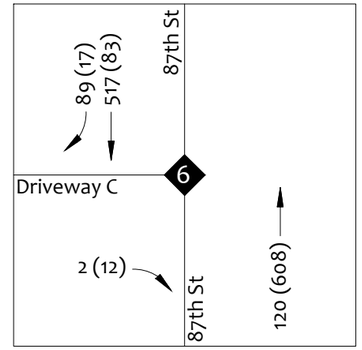












Legend

AM (PM)	Peak Hour Traffic Volumes
X	Intersection
<ADT>	Average Daily Traffic Volume

FIGURE 11 | YEAR 2022 BUILD TRAFFIC VOLUMES

19-ZN-2019
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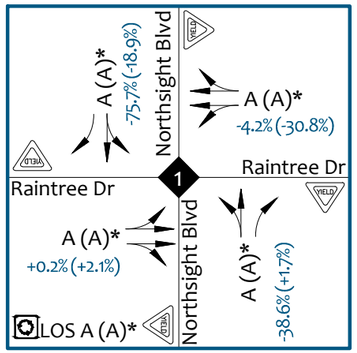
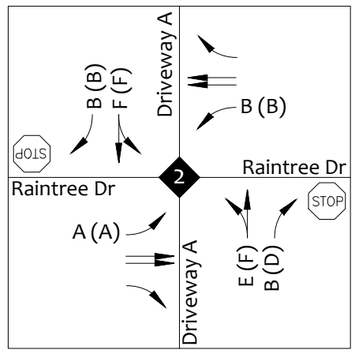
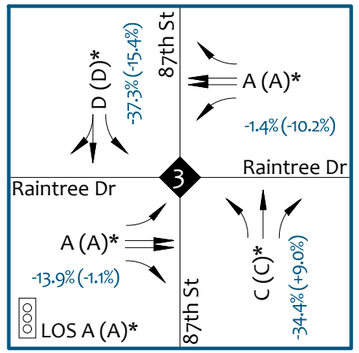
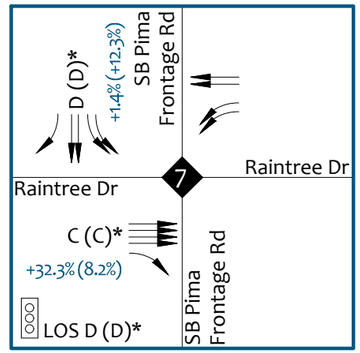
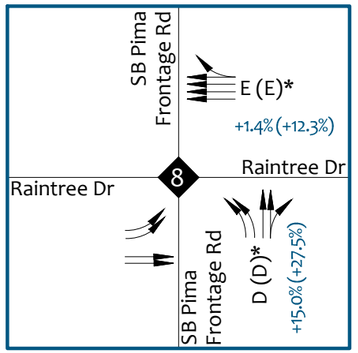
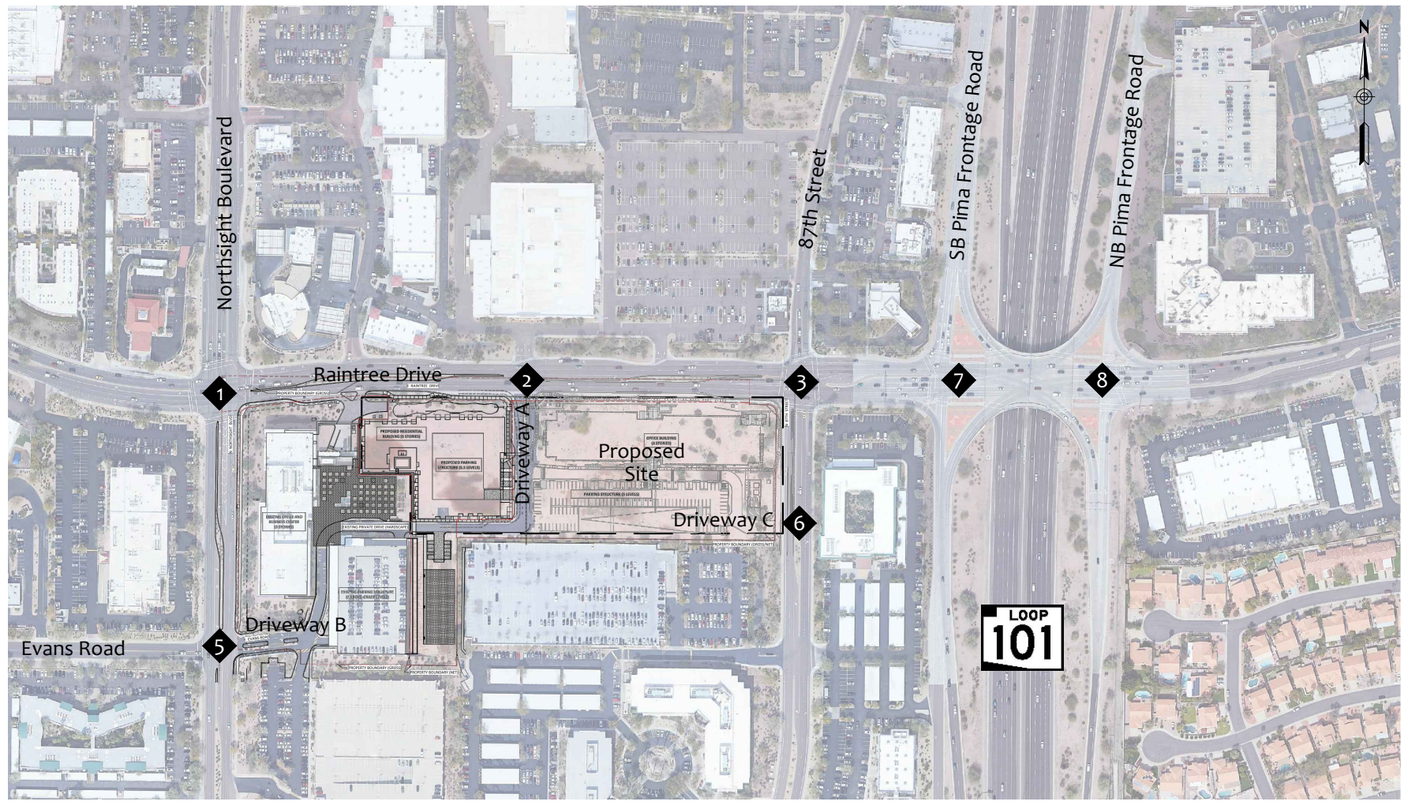


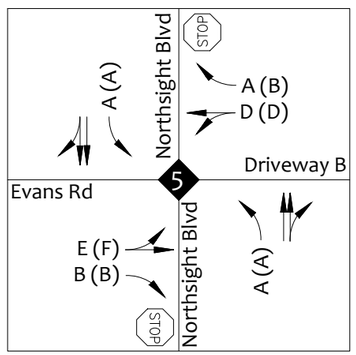


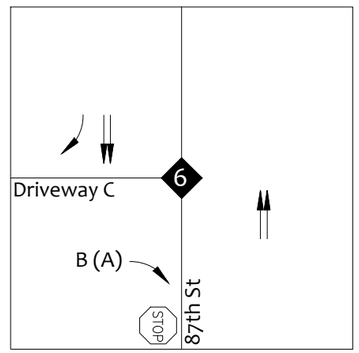












Legend

AM (PM)	Peak Hour Capacity Analysis
	Intersection
	Lane Configuration
*	2030 Approach LOS Per Raintree Drive Extension Design Concept Report (DCR), dated June 2014
AM% (PM%)	Approach Volume Percentage Difference - DCR versus Proposed Site Build Out

FIGURE 12 | YEAR 2022 BUILD CAPACITY ANALYSIS

7. RAINTREE DRIVE EXTENSION DESIGN CONCEPT REPORT

In June 2014, a Raintree Drive Extension Design Concept Report (DCR) was prepared for the City of Scottsdale. The DCR analyzed the segment between Thunderbird Road/Scottsdale Road to SR 101L and focused on addressing transportation and access issues. This DCR ultimately recommended a preferred configuration for the Raintree corridor.

The recommendation included the construction of a roundabout at the intersection of Raintree Drive and Northsight Boulevard (1). In addition, several configurations of the two intersections, Raintree Drive and 87th Street (3), and Raintree Drive and Northbound/Southbound Pima Frontage Road (4) were evaluated. While multiple alternatives have been provided for this interchange, it is anticipated the existing Single Point Urban Interchange (SPUI) will be modified to a Tight Diamond Interchange (TDI).

As part of the DCR, year 2030 conditions were analyzed. This analysis results in the intersection operating at acceptable LOS during the AM and PM peak hours.

Section 3.3 of the DCR states:

> *The historical trafc data for the area indicate that growth rates are relatvely fat within the vicinity of the Raintree Drive corridor. In comparing the existng conditons of the regional MAG model to the 2035 MAG model, the results indicate that growth rates on Raintree Drive vary between 0.5 percent and 1.0 percent per year. Therefore, based on discussion with the City of Scotsdale, the following assumptons were made to project future trafc volumes:*
>
> - *The average growth rate of one percent per year was used east of Hayden Road to approximately Northsight Boulevard.*
> - *The ultimate capacity of the SR 101L TI will be dependent upon the proposed improvements at the corridor intersections, including 87th Street. The existing TI is nearly at capacity and can support only a 10 to 15 percent increase in total peak hour traffic volumes. Therefore, an initial growth factor of approximately 0.5 percent per year was used in projecting future traffic.*

Acknowledging the comprehensive efforts of the DCR including meticulous modeling efforts, in traffic software such as RODEL and Vissim, the DCR year 2030 LOS is shown in **Figure 12**. Additionally, for comparison purposes, **Table 8** provides the approach volumes shown in the DCR for year 2030 along with the year 2022 build traffic volumes for the proposed Raintree Multi-Family development. The difference in these volumes presented as percentages are also shown in **Figure 12**.

Table 8 – Traffic Volume Comparison

Intersection	DCR - YEAR 2030 VOLUMES		YEAR 2022 BUILD VOLUMES		AM PEAK HOUR DIFFERENCE	PM PEAK HOUR DIFFERENCE
	AM PEAK HOUR	PM PEAK HOUR	AM PEAK HOUR	PM PEAK HOUR		
Raintree Drive and Northsight Boulevard (1)						
Eastbound Approach Volume	650	1,030	649	1,008	0.2%	2.1%
Westbound Approach Volume	1,200	950	1,250	1,243	-4.2%	-30.8%
Northbound Approach Volume	210	760	291	747	-38.6%	1.7%
Southbound Approach Volume	230	530	404	630	-75.7%	-18.9%
Raintree Drive and 87th Street (3)						
Eastbound Approach Volume	590	1,570	672	1,588	-13.9%	-1.1%
Westbound Approach Volume	1,990	1,230	2,018	1,356	-1.4%	-10.2%
Northbound Approach Volume	90	670	121	610	-34.4%	9.0%
Southbound Approach Volume	220	260	302	300	-37.3%	-15.4%
Raintree Drive and Southbound Pima Frontage Road (7) Raintree Drive and Northbound Pima Frontage Road (8)						
Eastbound Approach Volume	570	2,170	754	1,991	-32.3%	8.2%
Westbound Approach Volume	1,490	1,140	1,156	1,142	22.4%	-0.2%
Northbound Approach Volume	1,330	1,190	1,130	863	15.0%	27.5%
Southbound Approach Volume	1,330	1,230	1,311	1,079	1.4%	12.3%

8. RECOMMENDATIONS & CONCLUSIONS

The proposed Raintree Multi-Family development will be located on the southwest corner of Raintree Drive and 87th Street, in Scottsdale, Arizona. The proposed development will be comprised of residential and office land uses. A total of 190 residential units will be provided on the west half of the site. Of the 190 total units, there will be 150 one-bedroom, 36 two-bedroom, and four three-bedroom units. In addition, approximately 178,564 square feet (SF) of office space will be located on the east half of the proposed site.

Recommendations

In summary and as included in the discussion and analyses throughout this report, the following are the recommended improvements:

87th Street and Driveway B (6)

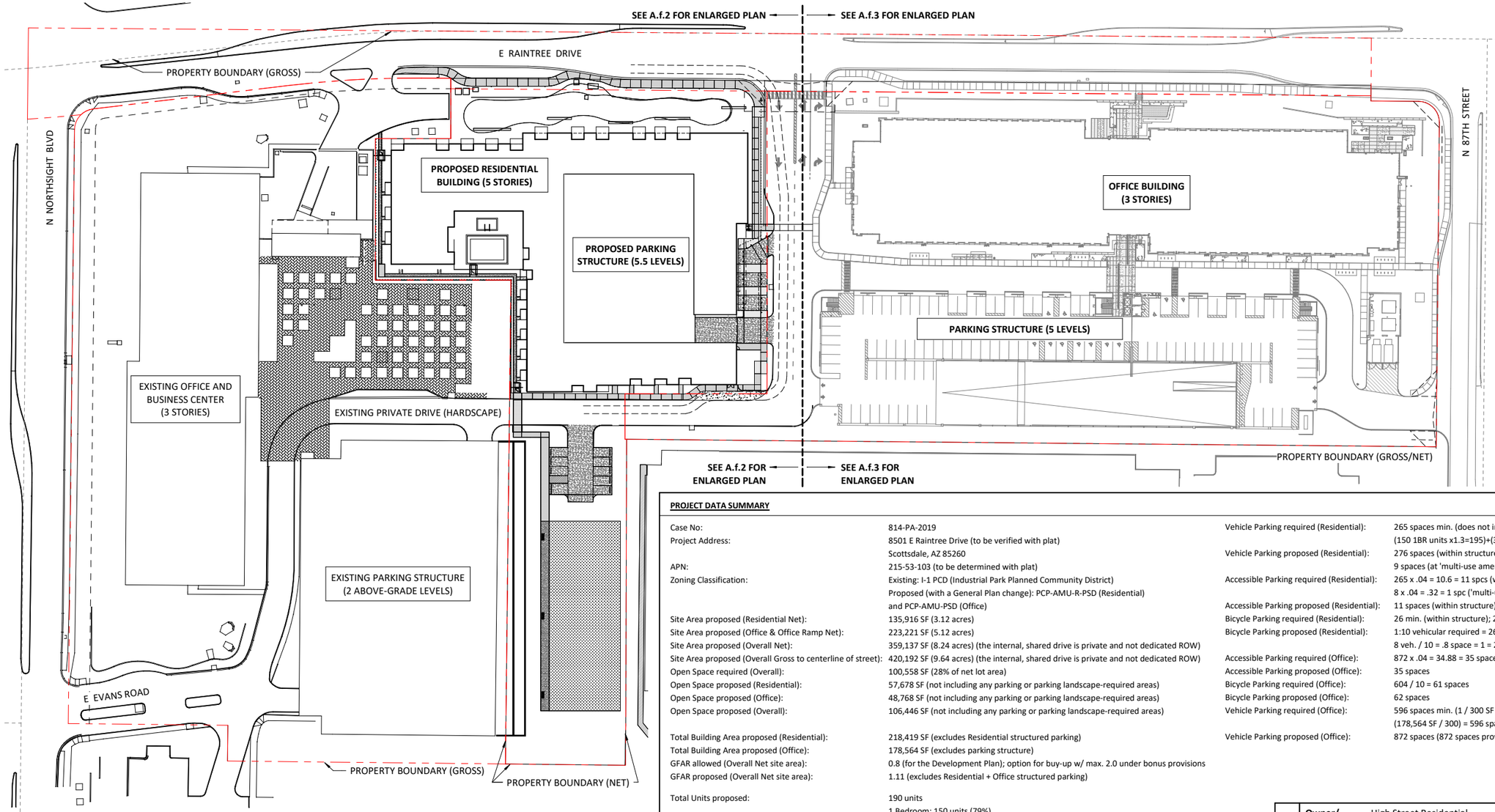
- Buildout of right-in and right-out access, including southbound right turn deceleration lane.

As with any new development and potential change in traffic patterns, the following is recommended:

- **Monitor and Adjust Signal Timing**
  Monitor traffic patterns in the area and if necessary, adjust nearby signal timing

Appendix A – Proposed Site Plan

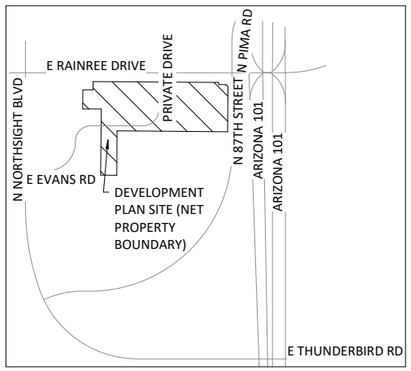
19-ZN-2019
3/10/2020



1 A.f.1 **OVERALL SITE PLAN**
1" = 50'-0"

0 25 50 100 200

NOTE: SITE AREA, OPEN SPACE, GFAR AND SETBACKS SUBJECT TO CHANGE DUE TO PENDING REVIEW/APPROVAL OF THE PROJECT'S SUBDIVISION PLAT THROUGH CITY OF SCOTTSDALE.



VICINITY MAP (NOT TO SCALE)

3/2/2020 2:30:41 PM

PROJECT DATA SUMMARY

Case No:	814-PA-2019
Project Address:	8501 E Raintree Drive (to be verified with plat) Scottsdale, AZ 85260
APN:	215-53-103 (to be determined with plat)
Zoning Classification:	Existing: I-1 PCD (Industrial Park Planned Community District) Proposed (with a General Plan change): PCP-AMU-R-PSD (Residential) and PCP-AMU-PSD (Office)
Site Area proposed (Residential Net):	135,916 SF (3.12 acres)
Site Area proposed (Office & Office Ramp Net):	223,221 SF (5.12 acres)
Site Area proposed (Overall Net):	359,137 SF (8.24 acres) (the internal, shared drive is private and not dedicated ROW)
Site Area proposed (Overall Gross to centerline of street):	420,192 SF (9.64 acres) (the internal, shared drive is private and not dedicated ROW)
Open Space required (Overall):	100,558 SF (28% of net lot area)
Open Space proposed (Residential):	57,678 SF (not including any parking or parking landscape-required areas)
Open Space proposed (Office):	48,768 SF (not including any parking or parking landscape-required areas)
Open Space proposed (Overall):	106,446 SF (not including any parking or parking landscape-required areas)
Total Building Area proposed (Residential):	218,419 SF (excludes Residential structured parking)
Total Building Area proposed (Office):	178,564 SF (excludes parking structure)
GFAR allowed (Overall Net site area):	0.8 (for the Development Plan); option for buy-up w/ max. 2.0 under bonus provisions
GFAR proposed (Overall Net site area):	1.11 (excludes Residential + Office structured parking)
Total Units proposed:	190 units 1 Bedroom: 150 units (79%) 2 Bedroom: 36 units (19%) 3 Bedroom: 4 units (2%)
Ground Level allowed (Overall):	Dwelling use limited to a maximum of 50% of the ground floor bldg area of the Development Plan Office use limited to a maximum of 50% of the ground floor bldg area of the Development Plan
Ground Level proposed:	Overall Development Plan Ground Level (without parking ramps): 101,853 s.f. Residential: 30,265 s.f. (30%) Support uses (lobby, fitness, amenity, restrooms, storage): 23,148 s.f. (22%)...
Stepbacks required:	1:1 beginning 38 ft above setback line / only relevant along Raintree Drive and 87th Street
Stepbacks proposed:	no encroachments
Building Height allowed (Overall Site):	62' maximum (including all rooftop appurtenances); 104' max under bonus provisions
Building Height proposed (Residential):	5.5 floors (64'-2" to top of overrun roof parapet) plus rooftop appurtenances = maximum 69'-0"
Building Height proposed (Office):	3 floors (50'-8" to top of roof parapet) plus rooftop appurtenances = 60'-2" total

Vehicle Parking required (Residential):	265 spaces min. (does not include accessible) (150 1BR units x1.3=195)+(36 2BR+ units x1.7=62)+(4 3BR units x1.9=8) =265
Vehicle Parking proposed (Residential):	276 spaces (within structure; includes accessible spaces) 9 spaces (at 'multi-use amenity' space; includes accessible spaces)
Accessible Parking required (Residential):	265 x .04 = 10.6 = 11 spcs (w/in structure) 8 x .04 = .32 = 1 spc ('multi-use amenity' spc)
Accessible Parking proposed (Residential):	11 spaces (within structure) + 1 space (at 'multi-use amenity' space)
Bicycle Parking required (Residential):	26 min. (within structure); 2 min. (at 'multi-use amenity' space)
Bicycle Parking proposed (Residential):	1:10 vehicular required = 265 veh. / 10 = 26.5 = 27 spaces (w/in structure) 8 veh. / 10 = .8 space = 1 = 2 as a min. req'd (at 'multi-use amenity' spc)
Accessible Parking required (Office):	872 x .04 = 34.88 = 35 spaces
Accessible Parking proposed (Office):	35 spaces
Bicycle Parking required (Office):	604 / 10 = 61 spaces
Bicycle Parking proposed (Office):	62 spaces
Vehicle Parking required (Office):	596 spaces min. (1 / 300 SF min.) (178,564 SF / 300) = 596 spaces
Vehicle Parking proposed (Office):	872 spaces (872 spaces provided)

PROJECT TEAM

Owner/ Developer:	High Street Residential 2575 East Camelback, Suite 400 Phoenix, AZ 85016 Ph: 602-222-4000 Fx: 602-285-3141	
Legal:	Berry Riddell LLC 6750 East Camelback, Suite 100 Scottsdale, AZ 85251 Ph: 480-385-2727 Fx: 480-385-2757	
Architect:	(RESIDENTIAL) Elness Swenson Graham Architects, Inc. 500 Washington Ave. South, Suite 1080 Minneapolis, MN 55415 Ph: 612-339-5508 Fx: 612-339-5382	(OFFICE, OFFICE RAMP) RSP Architects, Ltd. 502 S College Ave Ste 203 Tempe, AZ 85281 Ph: 480-889-2000
Civil Engineer:	Wood Patel 2051 W Northern Ave #100 Phoenix, AZ 85021 Ph: 602-335-8500 Fx: 602-335-8580	
Landscape Architect:	(RESIDENTIAL) Norris Design 901 East Madison Street Phoenix, AZ 85034 Ph: 602-254-9600	(OFFICE, OFFICE RAMP) Trueform Landscape Arch. Studio 2009 N 7th Street, Ste F Phoenix, AZ 85006 Ph: 480-382-4244
Electrical Engineer:	(RESIDENTIAL) TBD	(OFFICE, OFFICE RAMP) MSA Engineering Consultants 7878 N 16th Street, Ste 140 Phoenix, AZ 85020 Ph: 602-943-8424

Raintree Drive Residential

8501 E Raintree Drive
Scottsdale, AZ 85260

HIGHSTREET RESIDENTIAL

RSP

esg ARCHITECTURE & DESIGN

500 Washington Avenue South, Suite 1080
Minneapolis, MN 55415
p 612.339.5508 | f 612.339.5382
www.esgarch.com

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed architect under the laws of the State of Arizona

Signature

Typed or Printed Name

License # Date

NOT FOR CONSTRUCTION

REZONING APP SUBMITTAL

ORIGINAL ISSUE: 12/4/2019

REVISIONS

No.	Description	Date

219514
PROJECT NUMBER

ESG DRAWN BY ESG CHECKED BY

KEY PLAN

Raintree Drive Residential

OVERALL SITE PLAN

19-ZN-2019
3/10/2020

Appendix B – Crash Data

19-ZN-2019
3/10/2020

CITY OF SCOTTSDALE

COLLISION SUMMARY

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST FROM	INJ. SEV. #1	INJ. SEV. #2	PHYS. COND. #1	PHYS. COND. #2	VIOLATION #1	VIOLATION #2	ACTION #1	ACTION #2	TRAV. DIR. #1	TRAV. DIR. #2	MANNER OF COLLISION	COMMENTS
16-01160	160115	1312	87	ST	RAINTREE	DR	AT		99	1	99	0	99	1	99	3	EB	EB	4	HIT AND RUN
16-05233	160303	1539	87	ST	RAINTREE	DR	AT		1	1	0	0	4	1	1	3	EB	EB	4	MULTI VEH 3
16-06937	160323	1814	87	ST	RAINTREE	DR	AT		2	2	0	0	6	1	1	1	WB	SB	2	
16-13697	160614	1111	87	ST	RAINTREE	DR	AT		1	1	0	0	6	1	1	1	EB	NB	2	
16-13967	160617	1625	87	ST	RAINTREE	DR	AT		2	2	0	0	2	1	1	1	EB	EB	4	MULTI VEH 3
16-14405	160623	1337	87	ST	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	NB	WB	3	
16-15323	160705	1508	87	ST	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	WB	EB	3	
16-16420	160721	1721	87	ST	RAINTREE	DR	AT		1	1	0	0	1	1	1	1	EB	EB	4	MULTI VEH 3
16-16478	160722	1410	87	ST	RAINTREE	DR	AT		3	1	0	0	6	1	1	1	WB	NB	2	MULTI VEH 3
16-19675	160902	1107	87	ST	RAINTREE	DR	E	78	1	1	0	0		1	2	3	EB	EB	4	
16-23967	161027	1147	87	ST	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	SB	EB	3	
16-24637	161104	1405	87	ST	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	NB	WB	3	
16-24942	161108	1820	87	ST	RAINTREE	DR	N	25	1	1	0	0	2	1	1	1	NB	NB	4	
16-25998	161121	1421	87	ST	RAINTREE	DR	AT		1	1	0	0	12	1	1	1	NB	NB	2	
16-27781	161212	1755	87	ST	RAINTREE	DR	AT		1	1	0	0	12	1	8	1	EB	EB	6	
16-28259	161218	1332	87	ST	RAINTREE	DR	AT		1	1	0	0		1	1	4	WB	SB	97	
1702571	170201	1308	87	ST	RAINTREE	DR	AT		1	2	0	0	20	1	4	1	SB	EB	3	
1703732	170215	0809	87	ST	RAINTREE	DR	AT		1	1	0	0	7	1	4	1	SB	EB	3	
1704779	170227	1814	87	ST	RAINTREE	DR	AT		1	2	0	0	2	1	1	3	EB	EB	4	MULTI VEH 3
1713968	170623	1340	87	ST	RAINTREE	DR	N	10	1	1	0	0	20	1	4	5	NB	NB	6	
1715443	170712	1012	87	ST	RAINTREE	DR	AT		1	1	0	0	2	1	1	1	EB	SB	2	
1718586	170822	1329	87	ST	RAINTREE	DR	AT		3	99	0	0	99	99	1	1	WB	SB	2	
1722030	171005	0651	87	ST	RAINTREE	DR	AT		1	1	0	0	6	1	1	1	SB	EB	2	
1726631	171202	0835	87	ST	RAINTREE	DR	AT		2	2	0	0	6	1	1	4	WB	SB	2	
1726787	171204	0628	87	ST	RAINTREE	DR	AT		1	2	0	0	6	1	1	1	WB	SB	2	
1800756	180111	1226	87	ST	RAINTREE	DR	AT		1	1	0	0	2	1	5	5	SB	SB	4	
1804139	180222	1312	87	ST	RAINTREE	DR	E	50	1	1	0	0	97	97	1	1	WB	WB	4	MULTI VEH 3
1804463	180226	1850	87	ST	RAINTREE	DR	AT		1	1	0	0	6	1	1	1	EB	NB	2	
1805763	180314	1141	87	ST	RAINTREE	DR	AT		99	4	0	0	20	1	4	17	EB	NB	3	CAR/PEDESTRIAN
1811385	180522	1847	87	ST	RAINTREE	DR	W	100	1	2	3	0	2	1	1	3	EB	EB	4	
1814056	180625	1723	87	ST	RAINTREE	DR	AT		1	1	0	0	2	1	1	3	EB	EB	4	
1821365	180929	1548	87	ST	RAINTREE	DR	AT		1	1	0	0	1	1	3	2	EB	EB	4	
1822484	181015	1047	87	ST	RAINTREE	DR	AT		1	1	0	0	12	1	1	1	EB	EB	6	
1826585	181210	0938	87	ST	RAINTREE	DR	E	100	1	1	0	0	12	1	1	1	WB	WB	6	
1826838	181213	0551	87	ST	RAINTREE	DR	AT		1	1	0	0	7	97	4	1	NB	WB	2	
16-17250	160802	0813	NORTHSIGHT	BL	EVANS	RD	AT		1	3	0	0	20	1	4	1	EB	SB	2	

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST FROM	INJ. SEV. #1	INJ. SEV. #2	PHYS. COND. #1	PHYS. COND. #2	VIOLATION #1	VIOLATION #2	ACTION #1	ACTION #2	TRAV. DIR. #1	TRAV. DIR. #2	MANNER OF COLLISION	COMMENTS
1700686	170110	0825	NORTHSIGHT	BL	EVANS	RD	AT		1	1	0	0	20	1	4	1	EB	SB	2	
1703621	170213	1936	NORTHSIGHT	BL	EVANS	RD	AT		1	1	0	0	20	1	4	1	EB	NB	2	
1712189	170530	1139	NORTHSIGHT	BL	EVANS	RD	AT		1	2	0	0	20	1	4	1	EB	SB	2	
1724329	171102	1219	NORTHSIGHT	BL	EVANS	RD	AT		1	1	0	0	2	1	4	3	NB	NB	4	
16-00446	160106	1546	NORTHSIGHT	BL	RAINTREE	DR	AT		1	3	99	0	20	1	5	17	NB	WB	2	CAR/BICYCLE, HIT AND RUN
16-00556	160107	1806	NORTHSIGHT	BL	RAINTREE	DR	AT		99	99	0	0	7	99	5	4	EB	EB	2	
16-06061	160313	1455	NORTHSIGHT	BL	RAINTREE	DR	AT		1	3	0	0	20	1	4	1	NB	WB	97	
16-06916	160323	1409	NORTHSIGHT	BL	RAINTREE	DR	AT		1	3	0	0	6	1	1	1	WB	NB	2	MULTI VEH 3
16-07337	160328	1205	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	4	1	1	3	SB	SB	4	
16-08469	160410	1337	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	NB	WB	3	
16-13138	160607	1045	NORTHSIGHT	BL	RAINTREE	DR	AT		2	1	0	0	2	1	4	1	SB	EB	3	
16-13730	160614	1750	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	2	1	1	3	WB	WB	4	
16-14967	160630	1823	NORTHSIGHT	BL	RAINTREE	BL	AT		1	1	0	0	2	1	4	4	SB	SB	4	
16-16086	160716	1651	NORTHSIGHT	BL	RAINTREE	DR	AT		1		0		2		4		SB		3	
16-17419	160804	1713	NORTHSIGHT	BL	RAINTREE	DR	AT		1	2	0	0	20	1	4	1	NB	WB	3	
16-17767	160809	1133	NORTHSIGHT	BL	RAINTREE	DR	E	30	1	2	0	0	2	1	1	3	WB	WB	4	
16-18574	160819	1507	NORTHSIGHT	BL	RAINTREE	DR	AT		1	2	0	0	20	1	4	1	SB	NB	3	
16-21456	160924	1236	NORTHSIGHT	BL	RAINTREE	DR	AT		3	1	0	0	20	1	4	1	EB	WB	2	
16-22967	161014	1804	NORTHSIGHT	BL	RAINTREE	DR	AT		3	1	0	0	6	1	4	1	SB	NB	3	
16-25788	161118	1915	NORTHSIGHT	BL	RAINTREE	DR	AT		99	99	0	0	20	1	4	1	SB	NB	3	
16-28586	161222	1419	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	99	99	1	1	WB	WB	6	
16-28984	161229	1110	NORTHSIGHT	BL	RAINTREE	DR	W	40	1	2	0	0	2	1	2	3	EB	EB	4	
1702368	170130	1157	NORTHSIGHT	BL	RAINTREE	DR	AT		99	1	99	0	97	1	10	3	SB	SB	4	HIT AND RUN
1702685	170202	2154	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	EB	WB	3	
1706373	170318	0817	NORTHSIGHT	BL	RAINTREE	DR	AT		3		0	0	20	1	5	17	NB	WB	1	
1707955	170406	1303	NORTHSIGHT	BL	RAINTREE	DR	AT		1	2	0	0	99	99	4	1	NB	SB	3	
1708286	170411	1058	NORTHSIGHT	BL	RAINTREE	DR	AT		2	1	0	0	7	1	4	1	SB	EB	2	
1710060	170503	1709	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	2	1	1	1	WB	WB	4	
1710448	170508	1509	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	SB	NB	3	
1711702	170524	1419	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	SB	EB	3	
1713554	170617	1034	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	4	1	1	3	SB	SB	4	
1715481	170712	1727	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	7	1	4	1	NB	WB	3	
1716042	170719	1653	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	2	1	1	3	EB	EB	4	
1716335	170723	1335	NORTHSIGHT	BL	RAINTREE	DR	AT		1	3	0	0	6	1	1	1	NB	WB	2	
1718536	170821	1712	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	4	1	2	3	SB	SB	4	
1719744	170906	1339	NORTHSIGHT	BL	RAINTREE	DR	W	50	1	1	0	0	2	1	2	3	EB	EB	4	MULTI VEH 3
1720755	170919	1744	NORTHSIGHT	BL	RAINTREE	DR	AT		1	2	0	0	20	1	4	1	WB	NB	3	
1724346	171102	1448	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	SB	EB	3	

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST FROM	INJ. SEV. #1	INJ. SEV. #2	PHYS. COND. #1	PHYS. COND. #2	VIOLATION #1	VIOLATION #2	ACTION #1	ACTION #2	TRAV. DIR. #1	TRAV. DIR. #2	MANNER OF COLLISION	COMMENTS
1725446	171116	1820	NORTHSIGHT	BL	RAINTREE	DR	AT		99	1	99	0	2	1	1	3	NB	NB	4	HIT AND RUN
1728041	171219	1251	NORTHSIGHT	BL	RAINTREE	DR	AT		1	2	0	0	1	1	4	4	SB	SB	6	
1800669	180110	0901	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	6	1	1	4	NB	WB	2	
1801282	180117	1817	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	5	1	NB	EB	2	
1803462	180212	2039	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	EB	NB	3	
1803472	180213	0604	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	99	0	13	1	1	1	WB	WB	6	HIT AND RUN
1805680	180313	1040	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	SB	EB	3	
1805764	180314	1200	NORTHSIGHT	BL	RAINTREE	DR	S	97	1	1	0	0	99	99	8	1	NB	NB	6	
1808127	180411	1922	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	12	1	8	1	NB	NB	6	
1808357	180414	1421	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	5	4	NB	SB	2	
1809860	180503	1619	NORTHSIGHT	BL	RAINTREE	DR	AT		99	1	99	0	20	1	4	1	NB	WB	3	HIT AND RUN
1815306	180711	1644	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	99	99	4	5	WB	WB	3	
1816813	180731	2019	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	SB	NB	2	
1817589	180810	1348	NORTHSIGHT	BL	RAINTREE	DR	W	8	2	2	0	0	20	1	4	5	NB	SB	6	
1823995	181104	1458	NORTHSIGHT	BL	RAINTREE	DR	AT		1	1	0	0	20	1	4	1	SB	NB	2	
1824629	181113	1155	NORTHSIGHT	BL	RAINTREE	DR	AT		1	3	0	0	2	1	5	5	NB	NB	4	
1827882	181227	2309	NORTHSIGHT	BL	RAINTREE	DR	AT		3	1	0	0	99	99	1	1	NB	WB	2	

KEY

INJURY SEVERITY:
1=NO INJURY, 2=POSSIBLE INJURY, 3=NON-INCAPACITATING INJURY, 4=INCAPACITATING INJURY, 5=FATAL INJURY, 99=NOT REPORTED / UNKNOWN

PHYSICAL CONDITION:
0=NO APPARENT INFLUENCE, 1=ILLNESS, 2=PHYSICAL IMPAIRMENT, 3=FELL ASLEEP / FATIGUED 4=ALCOHOL, 5=DRUGS, 6=MEDICATIONS, A=NO TEST GIVEN, B=TEST GIVEN, C=TEST REFUSED, D=TESTING UNKNOWN, 97=OTHER, 99=UNKNOWN

VIOLATION:
1=NO IMPROPER ACTION, 2=SPEED TOO FAST FOR CONDITIONS, 3=EXCEEDED LAWFUL SPEED 4=FOLLOWED TOO CLOSELY. 5=RAN STOP SIGN, 6=DISREGAREDED TRAFFIC SIGNAL7=MADE IMPROPER TURN, 8=DROVE/RODE IN OPPOSING TRAFFIC LANE, 9=KNOWINGLY OPERATED WITH FAULTY / MISSING EQUIPMENT, 10=REQUIRED MOTORCYCLE SAFETY EQUIPMENT NOT USED, 11=PASSED IN NO PASSING ZONE, 12=UNSAFE LANE CHANGE, 13=FAILED TO KEEP IN PROPER LANE, 14=DISREGARDED PAVEMENT MARKINGS, 15=OTHER UNSAFE PASSING, 16=INATTENTION/DISTRACTION, 17=DID NOT USE CROSSWALK, 18=WALKED ON WRONG SIDE OF ROAD, 19=ELECTRONIC COMMUNICATIONS DEVICE, 20=FAILED TO YIELD RIGHT OF WAY (added August 2014), 97=OTHER, 99 UNKNOWN

ACTION:
1=GOING STRAIGHT AHEAD, 2=SLOWING IN TRAFFICWAY, 3=STOPPED IN TRAFFICWAY, 4=MAKING LEFT TURN, 5=MAKING RIGHT TURN, 6=MAKING U-TURN, 7=OVERTAKING/PASSING, 8=CHANGING LANES, 9=NEGOTIATING A CURVE, 10=BACKING, 11=AVOIDING VEH/OBJ/PED/CYCLIST/ANIMAL, 12=ENTERING PARKING POSITION, 13=LEAVING PARKING POSITION, 14=PROPERLY PARKED, 15=IMPROPERLY PARKED, 16=DRIVERLESS MOVING VEHICLE, 17=CROSING ROAD, 18=WALKING WITH TRAFFIC, 19=WALKING AGAINST TRAFFIC, 20=STANDING, 21=LYING, 22=GETTING ON OR OFF VEHICLE, 23=WORKING ON/PUSHING VEHICLE, 24=WORKING ON ROAD, 97=OTHER, 99=UKNOWN

MANNER OF COLLISION:
1=SINGLE VEHICLE, 2=ANGLE (front to side, other than left turn), 3=LEFT TURN, 4=REAR END (front to rear), 5=HEAD-ON (front to front, other than left turn), 6=SIDESWIPE (same direction), 7=SIDESWIPE (opposite direction), 8=REAR-TO-SIDE, 9=REAR TO REAR, 97=OTHER, 99=UNKNOWN

TOTAL **91**

CITY OF SCOTTSDALE

COLLISION SUMMARY

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST FROM	INJ. SEV. #1	INJ. SEV. #2	PHYS. COND. #1	PHYS. COND. #2	VIOLATION #1	VIOLATION #2	ACTION #1	ACTION #2	TRAV. DIR. #1	TRAV. DIR. #2	MANNER OF COLLISION	COMMENTS
16-02313	160129	1603	101		RAINTREE	DR	W	250	1	1	0	0	97	1	5	1	SB	WB	2	
1812418	180604	1638	87	ST	NORTHSIGHT	BL	N	1000	1		99				99		SB		1	
16-20476	160912	1115	87	ST	RAINTREE	DR	E	287	1	1	0	0	3	1	1	3	EB	EB	4	
1700727	170110	1641	87	ST	RAINTREE	DR	W	585	1	2	0	0	2	1	2	3	EB	EB	4	
1801271	180117	1519	87	ST	RAINTREE	DR	E	200	99	2	99	0	2	1	1	3	EB	EB	4	HIT AND RUN
1808275	180413	1521	87	ST	RAINTREE	DR	W	655	1	1	0	0	97	1	10	97	NB	SB	4	
1810968	180517	1204	87	ST	RAINTREE	DR	S	600	1	1	0	0	7	1	5	1	NB	NB	97	
1826875	181213	1506	87	ST	RAINTREE	DR	E	307	1	4	0	0	12	1	8	4	NB	NB	6	
1827140	181216	1250	87	ST	RAINTREE	RD	W	150	1	1	0	0	7	1	5	5	WB	WB	6	
16-17943	160811	1541	NORTHSIGHT	BL	RAINTREE	DR	E	480	1	1	0	0	12	1	8	1	WB	WB	6	
1706638	170321	1249	NORTHSIGHT	BL	RAINTREE	DR	E	960	1	1	0	0	12	1	1	1	EB	EB	6	
1712842	170608	1520	NORTHSIGHT	BL	RAINTREE	DR	S	200	1	1	0	0	4	1	8	1	SB	SB	4	
1713133	170612	0937	NORTHSIGHT	BL	RAINTREE	DR	E	750	1	3	0	0	20	1	4	1	SB	EB	2	
1715633	170714	1421	NORTHSIGHT	BL	RAINTREE	DR	S	521	99	1	99	0	2	1	1	3	SB	SB	4	HIT AND RUN
1723125	171019	1155	NORTHSIGHT	BL	RAINTREE	DR	E	671	1	1	0	0	3	1	1	3	WB	WB	4	MULTI VEH 4
1726735	171203	1046	NORTHSIGHT	BL	RAINTREE	DR	E	260	1	2	0	0	20	18	5	19	SB	EB	1	CAR/PEDESTRIAN
1817510	180809	1450	NORTHSIGHT	BL	RAINTREE	DR	E	277	3	3	0	0	2	1	1	3	WB	WB	4	MULTI VEH 3

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1=GOING STRAIGHT AHEAD, 2=SLOWING IN TRAFFICWAY, 3=STOPPED IN TRAFFICWAY, 4=MAKING LEFT TURN, 5=MAKING RIGHT TURN, 6=MAKING U-TURN, 7=OVERTAKING/PASSING, 8=CHANGING LANES, 9=NEGOTIATING A CURVE, 10=BACKING, 11=AVOIDING VEH/OBJ/PED/CYCLIST/ANIMAL, 12=ENTERING PARKING POSITION, 13=LEAVING PARKING POSITION, 14=PROPERLY PARKED, 15=IMPROPERLY PARKED, 16=DRIVERLESS MOVING VEHICLE, 17=CROSING ROAD, 18=WALKING WITH TRAFFIC, 19=WALKING AGAINST TRAFFIC, 20=STANDING, 21=LYING, 22=GETTING ON OR OFF VEHICLE, 23=WORKING ON/PUSHING VEHICLE, 24=WORKING ON ROAD, 97=OTHER, 99=UKNOWN

MANNER OF COLLISION:
1=SINGLE VEHICLE, 2=ANGLE (front to side, other than left turn), 3=LEFT TURN, 4=REAR END (front to rear), 5=HEAD-ON (front to front, other than left turn), 6=SIDESWIPE (same direction), 7=SIDESWIPE (opposite direction), 8=REAR-TO-SIDE, 9=REAR TO REAR, 97=OTHER, 99=UNKNOWN

TOTAL **17**

REPORT	YYMMDD	HHMM	NS_ST	NS_SF	EW_ST	EW_SF	DIR_FROM	DIST_FROM	AUX_REF_ST	DIR_FROM_A	DOB_1	DOB_2	INJ_SEV_1	INJ_SEV_2	PHYSICAL_C	PHYSICAL_1	VIOL_1	VIOL_2	ACTION_1	ACTION_2	TRAVEL_DIR	TRAVEL_D_1	MANNER	COMMENTS
1822484	181015	1047	87	ST	RAINTREE	DR	AT	0	90	W	2/19/1963	8/24/1965	1	1	0	0	12	1	1	1	EB	EB	6	
1827140	181216	1250	87	ST	RAINTREE	RD	W	150			2/13/1961	1/7/1966	1	1	0	0	7	1	5	5	WB	WB	6	
1826585	181210	938	87	ST	RAINTREE	DR	E	100			11/1/1949	9/22/1957	1	1	0	0	12	1	1	1	WB	WB	6	
1800756	180111	1226	87	ST	RAINTREE	DR	AT	0	101	W	11/1/1974	12/11/1969	1	1	0	0	2	1	5	5	SB	SB	4	
1801271	180117	1519	87	ST	RAINTREE	DR	E	200	101	W		2/10/1964	99	2	99	0	2	1	1	3	EB	EB	4	HIT AND RUN
1817510	180809	1450	NORTHSIGHT	BL	RAINTREE	DR	E	277			1/3/1972	12/21/1955	3	3	0	0	2	1	1	3	WB	WB	4	MULTI VEH 3
1808275	180413	1521	87	ST	RAINTREE	DR	W	655			3/18/1998	7/24/1992	1	1	0	0	97	1	10	97	NB	SB	4	
1814056	180625	1723	87	ST	RAINTREE	DR	AT	0	101	W	7/8/1975	5/30/1964	1	1	0	0	2	1	1	3	EB	EB	4	
1811385	180522	1847	87	ST	RAINTREE	DR	W	100	NORTHSIGHT	E	5/10/1962	11/4/1992	1	2	3	0	2	1	1	3	EB	EB	4	
1821365	180929	1548	87	ST	RAINTREE	DR	AT	0	101	W	8/10/1945	5/16/1964	1	1	0	0	1	1	3	2	EB	EB	4	
1804139	180222	1312	87	ST	RAINTREE	DR	E	50	NORTHSIGHT	W	10/16/1999	1/4/2000	1	1	0	0	97	97	1	1	WB	WB	4	MULTI VEH 3
1813205	180614	1631	101 FRONTAGE	RD	RAINTREE	DR	AT	0			6/2/1993	1/1/1901	1	1	0	0	4	1	2	2	EB	EB	4	
1824749	181115	1008	101	FY	RAINTREE	DR	AT	0			10/27/1954	6/26/1965	1	1	0	0	99	99	5	5	EB	EB	4	
1805763	180314	1141	87	ST	RAINTREE	DR	AT	0	101	W	4/4/1957	1/29/1972	99	4	0	0	20	1	4	17	EB	NB	3	CAR/PEDESTRIAN
1804463	180226	1850	87	ST	RAINTREE	DR	AT	0	NORTHSIGHT	E	12/4/1987	7/16/1965	1	1	0	0	6	1	1	1	EB	NB	2	
1826838	181213	551	87	ST	RAINTREE	DR	AT	0			12/10/1989	5/19/1983	1	1	0	0	7	97	4	1	NB	WB	2	

REPORT	YYMMDD	HHMM	NS_ST	NS_SF	EW_ST	EW_SF	DIR_FROM	DIST_FROM	AUX_REF_ST	DIR_FROM_A	DOB_1	DOB_2	INJ_SEV_1	INJ_SEV_2	PHYSICAL_C	PHYSICAL_1	VIOL_1	VIOL_2	ACTION_1	ACTION_2	TRAVEL_DIR	TRAVEL_D_1	MANNER	COMMENTS
1726735	171203	1046	NORTHSIGHT	BL	RAINTREE	DR	E	260			3/25/1985	10/18/1955	1	2	0	0	20	18	5	19	SB	EB	1	CAR/PEDESTRIAN
1723125	171019	1155	NORTHSIGHT	BL	RAINTREE	DR	E	671			6/17/1987	9/13/1996	1	1	0	0	3	1	1	3	WB	WB	4	MULTI VEH 4
1713133	170612	937	NORTHSIGHT	BL	RAINTREE	DR	E	750			6/28/1992	3/27/1975	1	3	0	0	20	1	4	1	SB	EB	2	
1700727	170110	1641	87	ST	RAINTREE	DR	W	585	101	W	11/18/1998	5/2/1987	1	2	0	0	2	1	2	3	EB	EB	4	
1706638	170321	1249	NORTHSIGHT	BL	RAINTREE	DR	E	960			9/15/1996	4/12/1979	1	1	0	0	12	1	1	1	EB	EB	6	
1704779	170227	1814	87	ST	RAINTREE	DR	AT	0	101	W	5/29/1941	7/17/1993	1	2	0	0	2	1	1	3	EB	EB	4	MULTI VEH 3
1713968	170623	1340	87	ST	RAINTREE	DR	N	10	101 FY	W	5/14/1993	9/24/1942	1	1	0	0	20	1	4	5	NB	NB	6	
1715443	170712	1012	87	ST	RAINTREE	DR	AT	0	NORTHSIGHT	E	1/3/1984	11/25/1981	1	1	0	0	2	1	1	1	EB	SB	2	
1726631	171202	835	87	ST	RAINTREE	DR	AT	0	NORTHSIGHT	E	11/22/1998	12/31/1972	2	2	0	0	6	1	1	4	WB	SB	2	
1726787	171204	628	87	ST	RAINTREE	DR	AT	0	NORTHSIGHT	E	2/20/1959	10/22/1956	1	2	0	0	6	1	1	1	WB	SB	2	
1702571	170201	1308	87	ST	RAINTREE	DR	AT	0	101	W	11/29/1984	11/24/1975	1	2	0	0	20	1	4	1	SB	EB	3	
1703732	170215	809	87	ST	RAINTREE	DR	AT	0	101	W	9/5/1995	4/24/1975	1	1	0	0	7	1	4	1	SB	EB	3	
1718586	170822	1329	87	ST	RAINTREE	DR	AT	0	NORTHSIGHT	E	8/24/1989	10/4/1951	3	99	0	0	99	99	1	1	WB	SB	2	
1722030	171005	651	87	ST	RAINTREE	DR	AT	0	NORTHSIGHT	E	12/11/1974	12/10/1991	1	1	0	0	6	1	1	1	SB	EB	2	

REPORT	YYMMDD	HHMM	NS_ST	NS_SF	EW_ST	EW_SF	DIR_FROM	DIST_FROM	AUX_REF_ST	DIR_FROM_A	DOB_1	DOB_2	INJ_SEV_1	INJ_SEV_2	PHYSICAL_C	PHYSICAL_1	VIOL_1	VIOL_2	ACTION_1	ACTION_2	TRAVEL_DIR	TRAVEL_D_1	MANNER	COMMENTS
1617943	160811	1541	NORTHSIGHT	BL	RAINTREE	DR	E	480			7/16/2000	11/13/1960	1	1	0	0	12	1	8	1	WB	WB	6	
1605233	160303	1539	87	ST	RAINTREE	DR	AT	0	101	W	1/31/1957	5/6/1970	1	1	0	0	4	1	1	3	EB	EB	4	MULTI VEH 3
1619675	160902	1107	87	ST	RAINTREE	DR	E	78	101	W	9/4/1983	11/28/1955	1	1	0	0		1	2	3	EB	EB	4	
1613967	160617	1625	87	ST	RAINTREE	DR	AT	0	101	W	1/19/1980	12/28/1974	2	2	0	0	2	1	1	1	EB	EB	4	MULTI VEH 3
1601160	160115	1312	87	ST	RAINTREE	DR	AT	0	101	W		10/25/1981	99	1	99	0	99	1	99	3	EB	EB	4	HIT AND RUN
1625998	161121	1421	87	ST	RAINTREE	DR	AT	0	101	W	12/23/1979	4/26/1962	1	1	0	0	12	1	1	1	NB	NB	2	
1606937	160323	1814	87	ST	RAINTREE	DR	AT	0	101	W	6/10/1998	9/27/1951	2	2	0	0	6	1	1	1	WB	SB	2	
1613697	160614	1111	87	ST	RAINTREE	DR	AT	0	101	W	8/24/1946	11/21/1981	1	1	0	0	6	1	1	1	EB	NB	2	
1615323	160705	1508	87	ST	RAINTREE	DR	AT	0	NORTHSIGHT	E	8/27/1997	2/27/1989	1	1	0	0	20	1	4	1	WB	EB	3	
1624637	161104	1405	87	ST	RAINTREE	DR	AT	0	101	W	1/7/1986	10/29/1974	1	1	0	0	20	1	4	1	NB	WB	3	
1628259	161218	1332	87	ST	RAINTREE	DR	AT	0	101	W	1/26/1980	9/9/1976	1	1	0	0		1	1	4	WB	SB	97	
1623967	161027	1147	87	ST	RAINTREE	DR	AT	0	101	W	2/17/1994	7/29/1994	1	1	0	0	20	1	4	1	SB	EB	3	
1627781	161212	1755	87	ST	RAINTREE	DR	AT	0	101	W	11/23/1997	1/15/1956	1	1	0	0	12	1	8	1	EB	EB	6	
1614405	160623	1337	87	ST	RAINTREE	DR	AT	0	101	W	12/18/1997	11/3/1977	1	1	0	0	20	1	4	1	NB	WB	3	
1616478	160722	1410	87	ST	RAINTREE	DR	AT	0	101	W	9/5/1992	5/21/1948	3	1	0	0	6	1	1	1	WB	NB	2	MULTI VEH 3
1616420	160721	1721	87	ST	RAINTREE	DR	AT	0	101	W	1/1/1990	9/27/1971	1	1	0	0	1	1	1	1	EB	EB	4	MULTI VEH 3

REPORT	YYMMDD	HHMM	NS_ST	NS_SF	EW_ST	EW_SF	DIR_FROM	DIST_FROM	AUX_REF_ST	DIR_FROM_A	DOB_1	DOB_2	INJ_SEV_1	INJ_SEV_2	PHYSICAL_C	PHYSICAL_1	VIOL_1	VIOL_2	ACTION_1	ACTION_2	TRAVEL_DIR	TRAVEL_D_1	MANNER	COMMENTS
1815747	181717	1252	NORTHSIGHT	BL	RAINTREE	DR	N	540			8/25/1945	7/21/1953	1	1	0	0	12	1	8	1	SB	SB	6	
1818648	180824	824	NORTHSIGHT	BL	RAINTREE	DR	N	616			5/4/1949	11/1/1980	1	3	0	0	12	1	8	1	SB	SB	6	
1803472	180213	604	NORTHSIGHT	BL	RAINTREE	DR	AT	0				9/26/1970	1	1	99	0	13	1	1	1	WB	WB	6	HIT AND RUN
1805764	180314	1200	NORTHSIGHT	BL	RAINTREE	DR	S	97			5/28/1982	1/1/1952	1	1	0	0	99	99	8	1	NB	NB	6	
1817589	180810	1348	NORTHSIGHT	BL	RAINTREE	DR	W	8			11/15/1963	7/25/1965	2	2	0	0	20	1	4	5	NB	SB	6	
1808127	180411	1922	NORTHSIGHT	BL	RAINTREE	DR	AT	0			10/6/1957	5/9/1965	1	1	0	0	12	1	8	1	NB	NB	6	
1824629	181113	1155	NORTHSIGHT	BL	RAINTREE	DR	AT	0			5/18/1989	11/5/1967	1	3	0	0	2	1	5	5	NB	NB	4	
1815306	180711	1644	NORTHSIGHT	BL	RAINTREE	DR	AT	0			7/26/1997	4/20/1961	1	1	0	0	99	99	4	5	WB	WB	3	
1803462	180212	2039	NORTHSIGHT	BL	RAINTREE	DR	AT	0			3/4/1961	11/16/1989	1	1	0	0	20	1	4	1	EB	NB	3	
1805680	180313	1040	NORTHSIGHT	BL	RAINTREE	DR	AT	0			7/24/1946	3/28/1965	1	1	0	0	20	1	4	1	SB	EB	3	
1809860	180503	1619	NORTHSIGHT	BL	RAINTREE	DR	AT	0				10/23/1987	99	1	99	0	20	1	4	1	NB	WB	3	HIT AND RUN
1800669	180110	901	NORTHSIGHT	BL	RAINTREE	DR	AT	0			1/16/1933	5/15/1987	1	1	0	0	6	1	1	4	NB	WB	2	
1808357	180414	1421	NORTHSIGHT	BL	RAINTREE	DR	AT	0			7/25/1934	3/27/2002	1	1	0	0	20	1	5	4	NB	SB	2	
1816813	180731	2019	NORTHSIGHT	BL	RAINTREE	DR	AT	0			12/22/1948	3/7/1974	1	1	0	0	20	1	4	1	SB	NB	2	
1823995	181104	1458	NORTHSIGHT	BL	RAINTREE	DR	AT	0			5/21/1947	1/29/1965	1	1	0	0	20	1	4	1	SB	NB	2	
1827882	181227	2309	NORTHSIGHT	BL	RAINTREE	DR	AT	0			12/21/1990	1/4/1990	3	1	0	0	99	99	1	1	NB	WB	2	
1801282	180117	1817	NORTHSIGHT	BL	RAINTREE	DR	AT	0			5/22/1990	11/3/1971	1	1	0	0	20	1	5	1	NB	EB	2	

REPORT	YYMMDD	HHMM	NS_ST	NS_SF	EW_ST	EW_SF	DIR_FROM	DIST_FROM	AUX_REF_ST	DIR_FROM_A	DOB_1	DOB_2	INJ_SEV_1	INJ_SEV_2	PHYSICAL_C	PHYSICAL_1	VIOL_1	VIOL_2	ACTION_1	ACTION_2	TRAVEL_DIR	TRAVEL_D_1	MANNER	COMMENTS
1704811	170228	643	NORTHSIGHT	BL	RAINTREE	DR	N	500			10/10/1938	7/11/1989	1	3	0	0	20	1	4	17	NB	NB	3	CAR/PEDESTRIAN
1724345	171102	1507	NORTHSIGHT	BL	RAINTREE	DR	N	105			10/17/1956	9/11/1957	1	1	0	0		1	1	3	SB	SB	4	
1712842	170608	1520	NORTHSIGHT	BL	RAINTREE	DR	S	200			2/26/1996	10/1/1987	1	1	0	0	4	1	8	1	SB	SB	4	
1703621	170213	1936	NORTHSIGHT	BL	EVANS	RD	AT	0			5/7/1942	5/24/1975	1	1	0	0	20	1	4	1	EB	NB	2	
1724329	171102	1219	NORTHSIGHT	BL	EVANS	RD	AT	0			9/2/1961	11/24/1957	1	1	0	0	2	1	4	3	NB	NB	4	
1700686	170110	825	NORTHSIGHT	BL	EVANS	RD	AT	0			1/5/1933	1/7/1985	1	1	0	0	20	1	4	1	EB	SB	2	
1712189	170530	1139	NORTHSIGHT	BL	EVANS	RD	AT	0			6/21/1954	7/4/1962	1	2	0	0	20	1	4	1	EB	SB	2	
1715633	170714	1421	NORTHSIGHT	BL	RAINTREE	DR	S	521				8/16/1964	99	1	99	0	2	1	1	3	SB	SB	4	HIT AND RUN
1720755	170919	1744	NORTHSIGHT	BL	RAINTREE	DR	AT	0			6/25/1969	11/14/1984	1	2	0	0	20	1	4	1	WB	NB	3	
1702368	170130	1157	NORTHSIGHT	BL	RAINTREE	DR	AT	0				12/13/1977	99	1	99	0	97	1	10	3	SB	SB	4	HIT AND RUN
1710060	170503	1709	NORTHSIGHT	BL	RAINTREE	DR	AT	0			11/22/1966	6/11/1958	1	1	0	0	2	1	1	1	WB	WB	4	
1725446	171116	1820	NORTHSIGHT	BL	RAINTREE	DR	AT	0				11/26/1982	99	1	99	0	2	1	1	3	NB	NB	4	HIT AND RUN
1716042	170719	1653	NORTHSIGHT	BL	RAINTREE	DR	AT	0			8/16/2000	7/29/1982	1	1	0	0	2	1	1	3	EB	EB	4	
1719744	170906	1339	NORTHSIGHT	BL	RAINTREE	DR	W	50			12/30/1954	2/3/1952	1	1	0	0	2	1	2	3	EB	EB	4	MULTI VEH 3
1707955	170406	1303	NORTHSIGHT	BL	RAINTREE	DR	AT	0			9/26/1955	3/12/1985	1	2	0	0	99	99	4	1	NB	SB	3	
1710448	170508	1509	NORTHSIGHT	BL	RAINTREE	DR	AT	0			5/31/1959	2/25/1985	1	1	0	0	20	1	4	1	SB	NB	3	
1716335	170723	1335	NORTHSIGHT	BL	RAINTREE	DR	AT	0			3/4/1944	4/17/1942	1	3	0	0	6	1	1	1	NB	WB	2	
1728041	171219	1251	NORTHSIGHT	BL	RAINTREE	DR	AT	0			7/21/1946	4/27/1970	1	2	0	0	1	1	4	4	SB	SB	6	
1702685	170202	2154	NORTHSIGHT	BL	RAINTREE	DR	AT	0			2/6/1994	12/4/1971	1	1	0	0	20	1	4	1	EB	WB	3	
1706373	170318	817	NORTHSIGHT	BL	RAINTREE	DR	AT	0			11/13/1992		3	0	0	0	20	1	5	17	NB	WB	1	
1708286	170411	1058	NORTHSIGHT	BL	RAINTREE	DR	AT	0			5/22/1938	1/22/1990	2	1	0	0	7	1	4	1	SB	EB	2	
1711702	170524	1419	NORTHSIGHT	BL	RAINTREE	DR	AT	0			5/7/1987	6/5/1970	1	1	0	0	20	1	4	1	SB	EB	3	
1715481	170712	1727	NORTHSIGHT	BL	RAINTREE	DR	AT	0			3/21/1954	9/15/1986	1	1	0	0	7	1	4	1	NB	WB	3	
1724346	171102	1448	NORTHSIGHT	BL	RAINTREE	DR	AT	0			5/26/1993	1/7/1953	1	1	0	0	20	1	4	1	SB	EB	3	
1718536	170821	1712	NORTHSIGHT	BL	RAINTREE	DR	AT	0			3/19/1988	7/13/1997	1	1	0	0	4	1	2	3	SB	SB	4	
1713554	170617	1034	NORTHSIGHT	BL	RAINTREE	DR	AT	0			2/8/1963	12/11/1981	1	1	0	0	4	1	1	3	SB	SB	4	

REPORT	YYMMDD	HHMM	NS_ST	NS_SF	EW_ST	EW_SF	DIR_FROM	DIST_FROM	AUX_REF_ST	DIR_FROM_A	DOB_1	DOB_2	INJ_SEV_1	INJ_SEV_2	PHYSICAL_C	PHYSICAL_1	VIOL_1	VIOL_2	ACTION_1	ACTION_2	TRAVEL_DIR	TRAVEL_D_1	MANNER	COMMENTS
1628984	161229	1110	NORTHSIGHT	BL	RAINTREE	DR	W	40			1/1/2001	8/2/1962	1	2	0	0	2	1	2	3	EB	EB	4	
1617250	160802	813	NORTHSIGHT	BL	EVANS	RD	AT	0	RAINTREE	DR	10/15/1948	9/10/1959	1	3	0	0	20	1	4	1	EB	SB	2	
1606061	160313	1455	NORTHSIGHT	BL	RAINTREE	DR	AT	0			1/15/1936	1/26/1996	1	3	0	0	20	1	4	1	NB	WB	97	
1622967	161014	1804	NORTHSIGHT	BL	RAINTREE	DR	AT	0			7/6/1992	11/30/1963	3	1	0	0	6	1	4	1	SB	NB	3	
1625788	161118	1915	NORTHSIGHT	BL	RAINTREE	DR	AT	0			4/19/1969	12/19/1958	99	99	0	0	20	1	4	1	SB	NB	3	
1628586	161222	1419	NORTHSIGHT	BL	RAINTREE	DR	AT	0			12/9/1964	11/24/1964	1	1	0	0	99	99	1	1	WB	WB	6	
1606916	160323	1409	NORTHSIGHT	BL	RAINTREE	DR	AT	0			1/23/1964	1/28/1989	1	3	0	0	6	1	1	1	WB	NB	2	MULTI VEH 3
1607337	160328	1205	NORTHSIGHT	BL	RAINTREE	DR	AT	0			4/3/1978	11/21/1972	1	1	0	0	4	1	1	3	SB	SB	4	
1608469	160410	1337	NORTHSIGHT	BL	RAINTREE	DR	AT	0			8/21/1979	4/15/1932	1	1	0	0	20	1	4	1	NB	WB	3	
1613138	160607	1045	NORTHSIGHT	BL	RAINTREE	DR	AT	0			2/14/1933	2/12/1966	2	1	0	0	2	1	4	1	SB	EB	3	
1618574	160819	1507	NORTHSIGHT	BL	RAINTREE	DR	AT	0			7/20/1955	5/13/1990	1	2	0	0	20	1	4	1	SB	NB	3	
1621456	160924	1236	NORTHSIGHT	BL	RAINTREE	DR	AT	0			8/30/1952	5/12/1956	3	1	0	0	20	1	4	1	EB	WB	2	
1617419	160804	1713	NORTHSIGHT	BL	RAINTREE	DR	AT	0			6/27/1961	2/22/1968	1	2	0	0	20	1	4	1	NB	WB	3	
1600446	160106	1546	NORTHSIGHT	BL	RAINTREE	DR	AT	0				3/7/1986	1	3	99	0	20	1	5	17	NB	WB	2	CAR/BICYCLE, HIT AND RUN
1613730	160614	1750	NORTHSIGHT	BL	RAINTREE	DR	AT	0			11/22/1988	6/30/1964	1	1	0	0	2	1	1	3	WB	WB	4	
1614967	160630	1823	NORTHSIGHT	BL	RAINTREE	BL	AT	0			8/17/1988	4/30/1977	1	1	0	0	2	1	4	4	SB	SB	4	
1616086	160716	1651	NORTHSIGHT	BL	RAINTREE	DR	AT	0			5/8/1984		1	0	0		2		4		SB		3	
1603805	160216	802	NORTHSIGHT	BL	RAINTREE	DR	N	550			7/25/1996	10/1/1976	1	1	0	0	2	1	8	8	NB	NB	97	
1625395	161114	1409	NORTHSIGHT	BL	RAINTREE	DR	N	600				3/25/1933	99	1	99	0	97	1	10	13	SB	SB	7	HIT AND RUN
1600556	160107	1806	NORTHSIGHT	BL	RAINTREE	DR	AT	0			9/9/1971	5/19/1949	99	99	0	0	7	99	5	4	EB	EB	2	
1617767	160809	1133	NORTHSIGHT	BL	RAINTREE	DR	E	30			7/26/1982	11/24/1963	1	2	0	0	2	1	1	3	WB	WB	4	
1604456	160223	1918	NORTHSIGHT	BL	BUTHERUS	DR	AT	0			7/27/1956	7/27/1948	1	2	0	0	8	1	1	1	SB	NB	2	

REPORT	YYMMDD	HHMM	NS_ST	NS_SF	EW_ST	EW_SF	DIR_FROM	DIST_FROM	AUX_REF_ST	DIR_FROM_A	DOB_1	DOB_2	INJ_SEV_1	INJ_SEV_2	PHYSICAL_C	PHYSICAL_1	VIOL_1	VIOL_2	ACTION_1	ACTION_2	TRAVEL_DIR	TRAVEL_D_1	MANNER	COMMENTS
1810968	180517	1204	87	ST	RAINTREE	DR	S	600	NORTHSIGHT	E	9/17/1939	8/19/1989	1	1	0	0	7	1	5	1	NB	NB	97	
1812418	180604	1638	87	ST	NORTHSIGHT	BL	N	1000			9/16/1986		1	0	99				99		SB		1	

Appendix C – Parcel Information

19-ZN-2019
3/10/2020

215-53-103 Commercial Parcel

This is a commercial parcel and the current owner is PR III/CROW RAINTREE OFFICE LLC. It is located in the Northsight And Raintree Mld subdivision and MCR 140116. Its current year full cash value is $8,584,700.

Property Information

MCR #	140116
Description:	NORTHSIGHT AND RAINTREE MLD MCR 1401-16
Lat/Long	
Lot Size	359,050 sq ft.
Zoning	I-1
Lot #	1
High School District	PARADISE VALLEY UNIFIED #69
Elementary School District	PARADISE VALLEY UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	12 3N 4E
Market Area/Neighborhood	05/013
Subdivision (2 Parcels)	NORTHSIGHT AND RAINTREE MLD

Owner Information

PR III/CROW RAINTREE OFFICE LLC

Mailing Address	2231 E CAMELBACK RD STE 102, PHOENIX, AZ 85016
Deed Number	190313865
Last Deed Date	05/01/2019
Sale Date	n/a
Sale Price	n/a

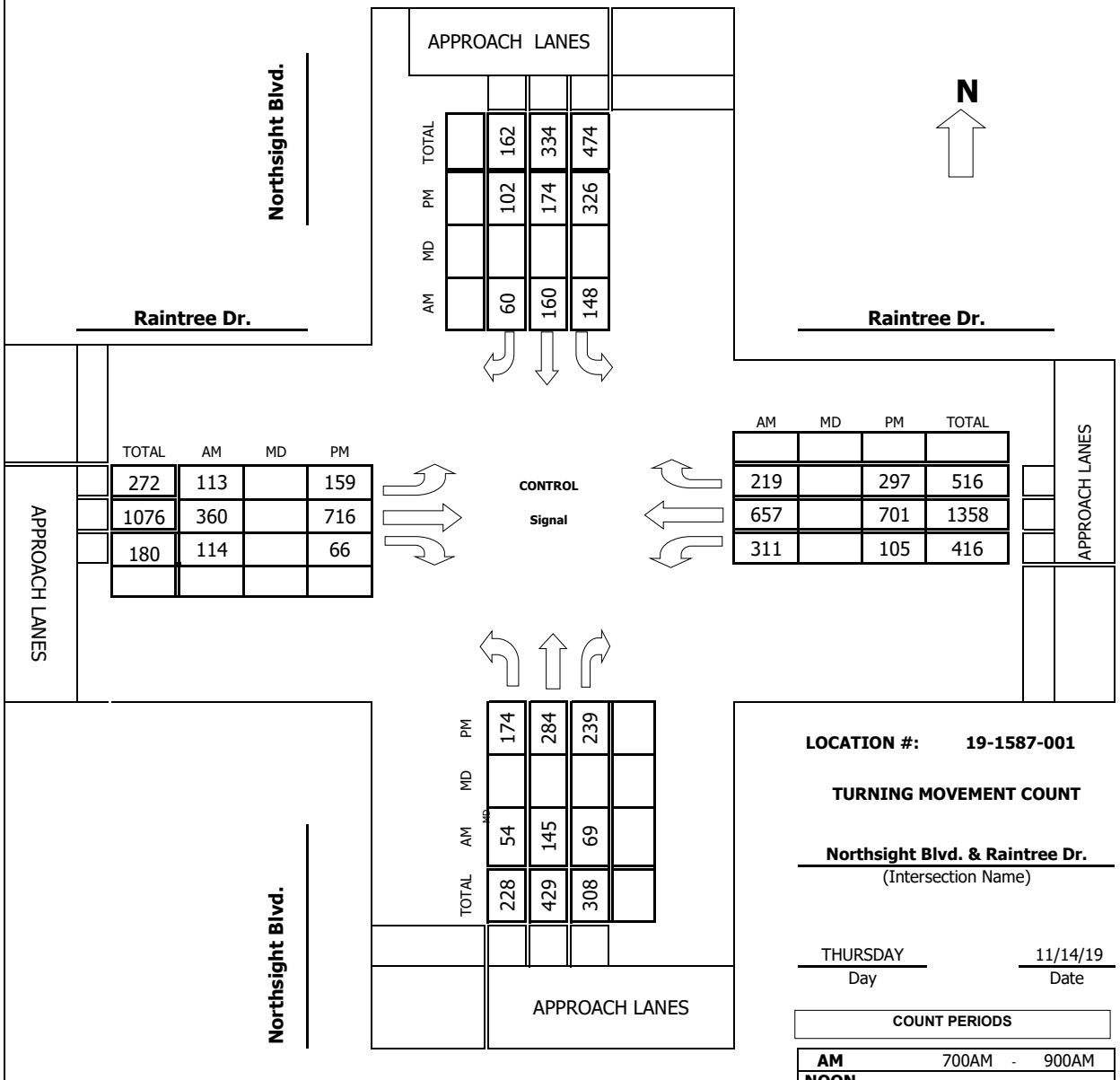
Appendix D – Traffic Count Data

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1587-001

TMC SUMMARY OF Northsight Blvd. & Raintree Dr.



LOCATION #: 19-1587-001

TURNING MOVEMENT COUNT

Northsight Blvd. & Raintree Dr.
(Intersection Name)

THURSDAY (Day) 11/14/19 (Date)

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

19-ZN-2019
3/10/2020

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Northsight Blvd.	DATE:	11/14/19	LOCATION:	Scottsdale
E-W STREET:	Raintree Dr.	DAY:	THURSDAY	PROJECT#	19-1587-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	2	2	1	1	2	1	1	2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	6	17	13	25	19	5	13	70	15	39	105	31	358
7:15 AM	11	20	13	26	20	10	10	88	11	49	119	46	423
7:30 AM	7	29	10	35	43	9	16	72	31	52	137	41	482
7:45 AM	22	28	8	34	34	9	23	92	22	84	165	38	559
8:00 AM	16	28	13	38	41	15	26	99	40	87	147	49	599
8:15 AM	10	32	11	42	44	14	25	87	28	69	152	46	560
8:30 AM	15	47	24	37	40	11	27	82	25	73	149	57	587
8:45 AM	13	38	21	31	35	20	35	92	21	82	209	67	664
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	100	239	113	268	276	93	175	682	193	535	1183	375	4232
Approach %	22.12	52.88	25.00	42.07	43.33	14.60	16.67	64.95	18.38	25.56	56.52	17.92	
App/Depart	452	/	789	637	/	1004	1050	/	1063	2093	/	1376	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	54	145	69	148	160	60	113	360	114	311	657	219	2410
Approach %	20.15	54.10	25.75	40.22	43.48	16.30	19.25	61.33	19.42	26.20	55.35	18.45	
PEAK HR. FACTOR:		0.779			0.920			0.889			0.829		0.907

CONTROL:	Signal
COMMENT 1:	
GPS:	33.618253, -111.897777

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Northsight Blvd. 0	DATE:	11/14/19	LOCATION:	Scottsdale
E-W STREET:	Raintree Dr.	DAY:	THURSDAY	PROJECT#	19-1587-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	2	2	1	1	2	1	1	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	44	66	68	82	36	20	34	169	22	36	189	62	828
4:15 PM	44	60	53	74	40	23	31	161	11	27	170	63	757
4:30 PM	40	61	81	79	42	28	41	195	11	31	178	75	862
4:45 PM	46	52	54	83	51	16	37	146	18	25	179	72	779
5:00 PM	55	110	65	92	35	28	40	203	19	30	170	70	917
5:15 PM	33	61	39	72	46	30	41	172	18	19	174	80	785
5:30 PM	29	63	32	70	47	22	31	156	13	17	145	70	695
5:45 PM	19	58	31	91	33	21	23	120	13	20	127	60	616
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	310	531	423	643	330	188	278	1322	125	205	1332	552	6239
Approach %	24.53	42.01	33.47	55.38	28.42	16.19	16.12	76.64	7.25	9.81	63.76	26.42	
App/Depart	1264	/	1361	1161	/	660	1725	/	2388	2089	/	1830	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	174	284	239	326	174	102	159	716	66	105	701	297	3343
Approach %	24.96	40.75	34.29	54.15	28.90	16.94	16.90	76.09	7.01	9.52	63.55	26.93	

PEAK HR. FACTOR:	0.758	0.971	0.898	0.971	0.911

CONTROL:	Signal
COMMENT 1:	0
GPS:	33.618253, -111.897777

19-ZN-2019
3/10/2020

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: Northsight Blvd.
E-W STREET: Raintree Dr.

Date: 11/14/19
Day: THURSDAY

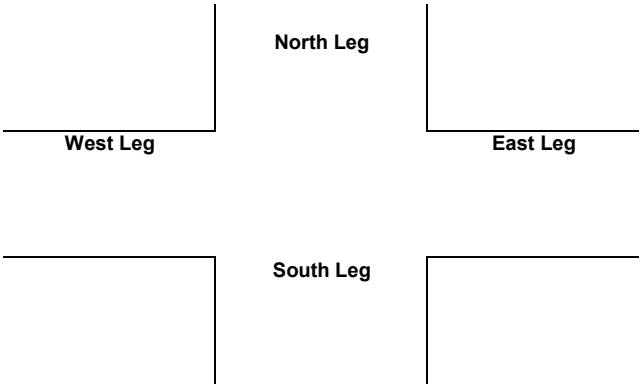
City: Scottsdale
Project #: 19-1587-001

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	4	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL	**0**	**4**	**0**	**0**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	1	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL	**0**	**0**	**1**	**0**

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	1	1
4:15 PM	0	1	0	1
4:30 PM	0	0	1	0
4:45 PM	0	0	0	0
5:00 PM	0	0	1	0
5:15 PM	0	0	1	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**1**	**4**	**2**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**

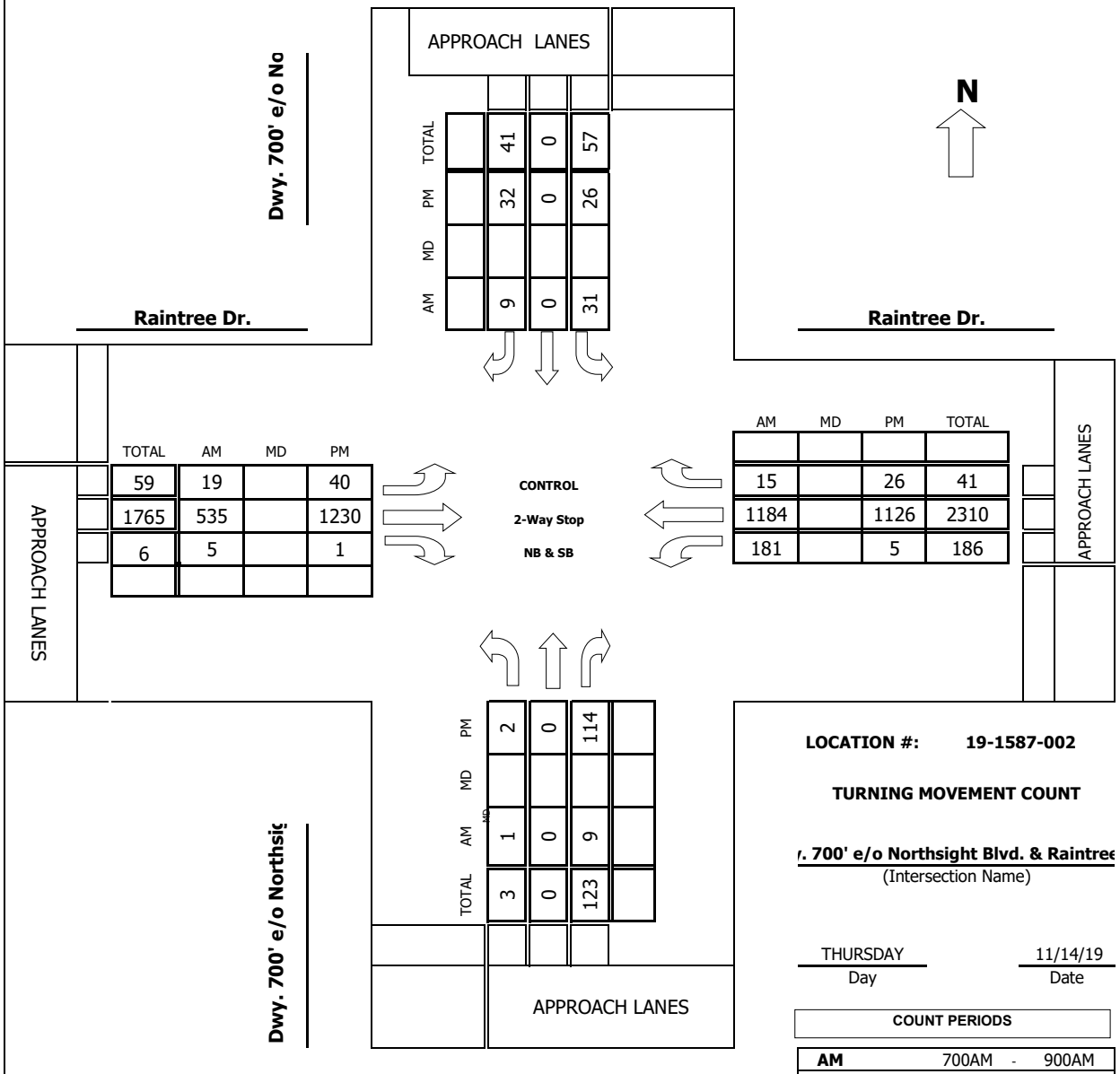


Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1587-002

TMC SUMMARY OF Dwy. 700' e/o Northsight Blvd. & Raintree Dr.



LOCATION #: 19-1587-002

TURNING MOVEMENT COUNT

. 700' e/o Northsight Blvd. & Raintree
(Intersection Name)

THURSDAY — Day
11/14/19 — Date

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Dwy. 700' e/o Northsight Blvd.	DATE:	11/14/19	LOCATION:	Scottsdale
E-W STREET:	Raintree Dr.	DAY:	THURSDAY	PROJECT#	19-1587-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	0	2	0	1	2	1	1	2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	0	6	0	0	3	89	0	28	200	0	326
7:15 AM	0	0	1	9	0	0	1	125	2	29	219	2	388
7:30 AM	1	0	2	4	0	0	1	115	3	34	250	2	412
7:45 AM	0	0	1	4	0	3	3	119	4	34	292	3	463
8:00 AM	0	0	2	7	0	2	5	135	1	40	291	6	489
8:15 AM	0	0	2	7	0	2	3	136	1	73	254	3	481
8:30 AM	0	0	5	7	0	2	6	123	2	43	288	3	479
8:45 AM	1	0	0	10	0	3	5	141	1	25	351	3	540
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	2	0	13	54	0	12	27	983	14	306	2145	22	3578
Approach %	13.33	0.00	86.67	81.82	0.00	18.18	2.64	96.00	1.37	12.37	86.74	0.89	
App/Depart	15	/	49	66	/	320	1024	/	1050	2473	/	2159	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	1	0	9	31	0	9	19	535	5	181	1184	15	1989
Approach %	10.00	0.00	90.00	77.50	0.00	22.50	3.40	95.71	0.89	13.12	85.80	1.09	
PEAK HR. FACTOR:		0.500			0.769			0.951			0.910		0.921

CONTROL:	2-Way Stop (NB & SB)
COMMENT 1:	
GPS:	33.618318, -111.895344

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Dwy. 700' e/o Northsight Blvd. 0	DATE:	11/14/19	LOCATION:	Scottsdale
E-W STREET:	Raintree Dr.	DAY:	THURSDAY	PROJECT#	19-1587-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	0	2	0	1	2	1	1	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	0	18	2	0	7	16	308	0	2	287	4	644
4:15 PM	1	0	28	10	1	5	20	259	0	2	260	0	586
4:30 PM	0	0	39	4	0	9	8	326	0	1	304	2	693
4:45 PM	2	0	19	8	0	3	9	279	1	2	277	9	609
5:00 PM	0	0	37	4	0	12	10	347	0	2	259	7	678
5:15 PM	0	0	19	10	0	8	13	278	0	0	286	8	622
5:30 PM	0	0	29	12	0	5	15	243	0	1	248	7	560
5:45 PM	0	0	11	14	0	3	11	231	0	1	230	4	505
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	3	0	200	64	1	52	102	2271	1	11	2151	41	4897
Approach %	1.48	0.00	98.52	54.70	0.85	44.44	4.30	95.66	0.04	0.50	97.64	1.86	
App/Depart	203	/	143	117	/	13	2374	/	2535	2203	/	2206	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	2	0	114	26	0	32	40	1230	1	5	1126	26	2602
Approach %	1.72	0.00	98.28	44.83	0.00	55.17	3.15	96.77	0.08	0.43	97.32	2.25	
PEAK HR. FACTOR:		0.744			0.806			0.890			0.942		0.939

CONTROL: 2-Way Stop (NB & SB)
COMMENT 1: 0
GPS: 33.618318, -111.895344

19-ZN-2019
3/10/2020

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: Dwy. 700' e/o Northsight Blvd.
E-W STREET: Raintree Dr.

Date: 11/14/19
Day: THURSDAY

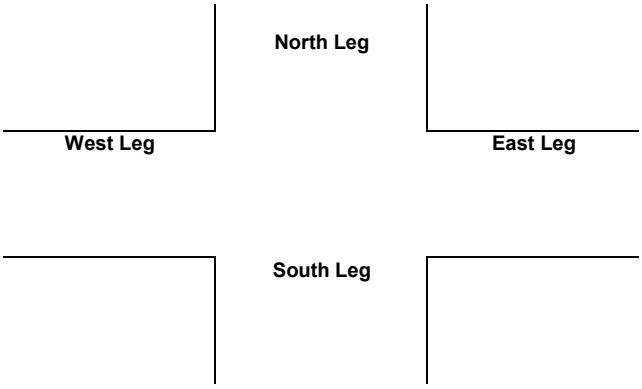
City: Scottsdale
Project #: 19-1587-002

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	0
7:15 AM	0	1	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	1	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL	**0**	**2**	**0**	**0**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	0
7:15 AM	1	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL	**1**	**0**	**0**	**0**

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	1	0	0	0
5:00 PM	0	0	0	0
5:15 PM	1	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**2**	**0**	**0**	**0**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**

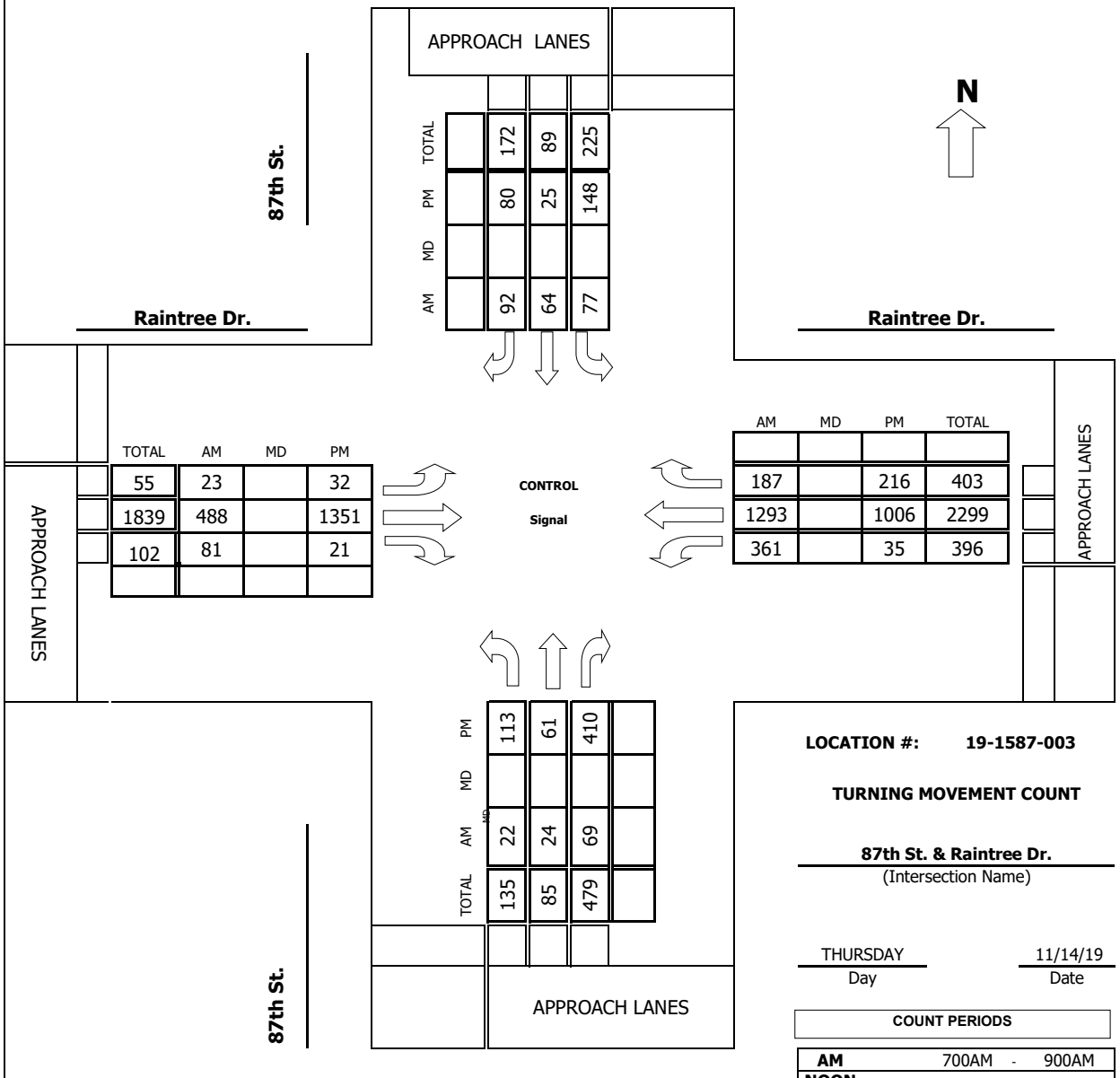


Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1587-003

TMC SUMMARY OF 87th St. & Raintree Dr.



LOCATION #: 19-1587-003

TURNING MOVEMENT COUNT

87th St. & Raintree Dr.
(Intersection Name)

THURSDAY (Day) 11/14/19 (Date)

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

19-ZN-2019
3/10/2020

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	87th St.	DATE:	11/14/19	LOCATION:	Scottsdale
E-W STREET:	Raintree Dr.	DAY:	THURSDAY	PROJECT#	19-1587-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	1	0	1	2	1	1	2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	5	11	10	8	10	2	78	15	65	212	21	438
7:15 AM	3	3	9	15	8	14	6	111	17	57	243	41	527
7:30 AM	7	4	7	20	6	18	4	91	14	68	259	33	531
7:45 AM	4	6	8	5	19	16	7	111	23	92	340	35	666
8:00 AM	5	3	16	13	16	21	5	108	25	114	308	55	689
8:15 AM	3	2	14	15	18	20	7	129	23	104	316	43	694
8:30 AM	7	10	15	24	16	25	7	122	11	71	311	46	665
8:45 AM	7	9	24	25	14	26	4	129	22	72	358	43	733
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	37	42	104	127	105	150	42	879	150	643	2347	317	4943
Approach %	20.22	22.95	56.83	33.25	27.49	39.27	3.92	82.07	14.01	19.44	70.97	9.59	
App/Depart	183	/	401	382	/	898	1071	/	1110	3307	/	2534	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	22	24	69	77	64	92	23	488	81	361	1293	187	2781
Approach %	19.13	20.87	60.00	33.05	27.47	39.48	3.89	82.43	13.68	19.61	70.23	10.16	
PEAK HR. FACTOR:		0.719			0.896			0.931			0.965		0.948

CONTROL: Signal
COMMENT 1:
GPS: 33.618300, -111.893182

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	87th St. 0	DATE:	11/14/19	LOCATION:	Scottsdale
E-W STREET:	Raintree Dr.	DAY:	THURSDAY	PROJECT#	19-1587-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	1	0	1	2	1	1	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	35	10	122	37	9	18	9	306	4	11	249	60	870
4:15 PM	24	5	109	32	8	22	6	301	2	6	222	53	790
4:30 PM	26	19	105	25	7	21	6	360	7	11	268	57	912
4:45 PM	30	5	92	43	7	23	7	316	6	9	245	44	827
5:00 PM	27	25	111	32	6	16	7	401	5	8	244	57	939
5:15 PM	30	12	102	48	5	20	12	274	3	7	249	58	820
5:30 PM	9	7	68	44	3	25	12	305	1	1	222	61	758
5:45 PM	14	4	77	41	5	21	5	241	1	4	191	58	662
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	195	87	786	302	50	166	64	2504	29	57	1890	448	6578
Approach %	18.26	8.15	73.60	58.30	9.65	32.05	2.46	96.42	1.12	2.38	78.91	18.71	
App/Depart	1068	/	599	518	/	136	2597	/	3592	2395	/	2251	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	113	61	410	148	25	80	32	1351	21	35	1006	216	3498
Approach %	19.35	10.45	70.21	58.50	9.88	31.62	2.28	96.23	1.50	2.78	80.03	17.18	
PEAK HR. FACTOR:		0.896			0.866			0.850			0.935		0.931

CONTROL: Signal
COMMENT 1: 0
GPS: 33.618300, -111.893182

19-ZN-2019
3/10/2020

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: 87th St.
E-W STREET: Raintree Dr.

Date: 11/14/19
Day: THURSDAY

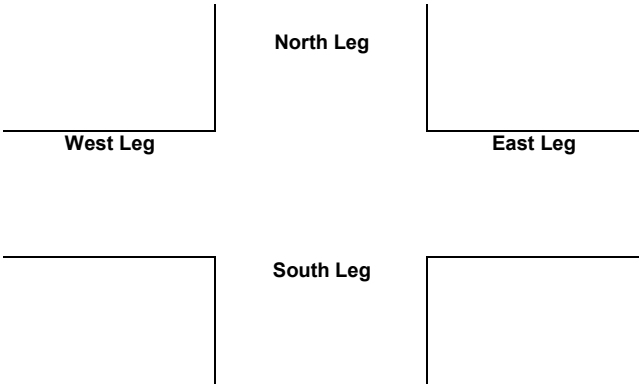
City: Scottsdale
Project #: 19-1587-003

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	1	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL	**1**	**0**	**0**	**0**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	0
7:15 AM	0	0	0	1
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL	**0**	**0**	**0**	**1**

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	0	1
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	1
5:00 PM	0	1	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**1**	**0**	**2**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**

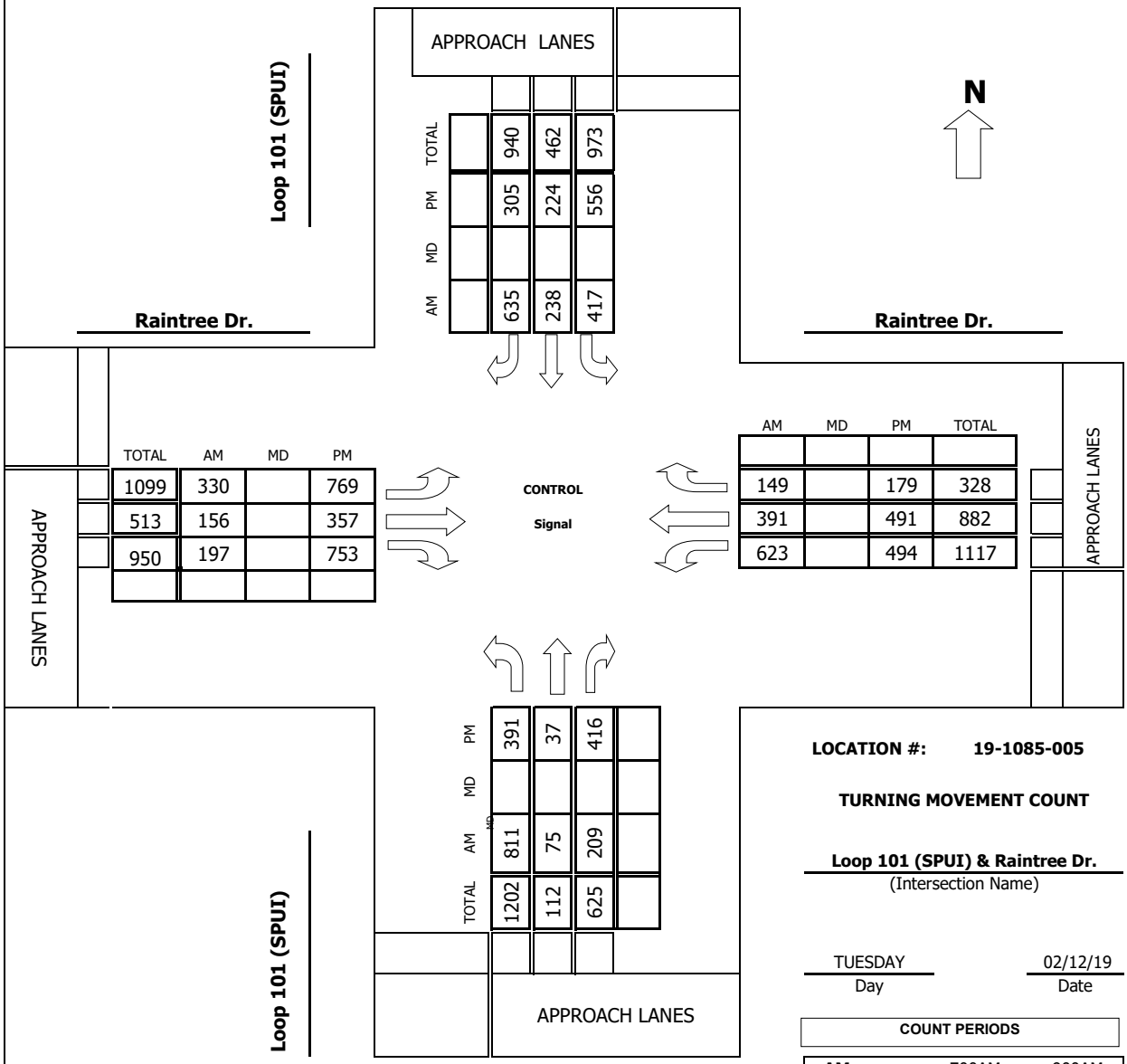


Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1085-005

TMC SUMMARY OF Loop 101 (SPUI) & Raintree Dr.



LOCATION #: 19-1085-005

TURNING MOVEMENT COUNT

Loop 101 (SPUI) & Raintree Dr.
(Intersection Name)

TUESDAY (Day) 02/12/19 (Date)

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

19-ZN-2019
3/10/2020

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Loop 101 (SPUI)	DATE:	02/12/19	LOCATION:	Scottsdale
E-W STREET:	Raintree Dr.	DAY:	TUESDAY	PROJECT#	19-1085-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	1.5	0.5	2	2	1	2	2	1	2	2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	178	13	38	71	31	88	46	27	36	125	43	44	740
7:15 AM	154	19	46	90	47	120	50	24	33	189	76	35	883
7:30 AM	187	8	16	75	44	123	58	31	36	161	79	38	856
7:45 AM	226	13	26	89	67	162	64	24	51	180	99	24	1025
8:00 AM	209	14	33	101	63	149	73	49	48	138	87	34	998
8:15 AM	189	17	71	123	60	183	90	44	42	180	83	40	1122
8:30 AM	219	17	48	96	59	142	72	43	58	142	85	45	1026
8:45 AM	194	27	57	97	56	161	95	20	49	163	136	30	1085
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	1556	128	335	742	427	1128	548	262	353	1278	688	290	7735
Approach %	77.07	6.34	16.59	32.30	18.59	49.11	47.12	22.53	30.35	56.65	30.50	12.85	
App/Depart	2019	/	966	2297	/	2058	1163	/	1339	2256	/	3372	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	811	75	209	417	238	635	330	156	197	623	391	149	4231
Approach %	74.06	6.85	19.09	32.33	18.45	49.22	48.32	22.84	28.84	53.57	33.62	12.81	
PEAK HR. FACTOR:		0.964			0.881			0.970			0.884		0.943

CONTROL: Signal
COMMENT 1:
GPS: 33.618298, -111.891344

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Loop 101 (SPUI) 0	DATE:	02/12/19	LOCATION:	Scottsdale
E-W STREET:	Raintree Dr.	DAY:	TUESDAY	PROJECT#	19-1085-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	1.5	0.5	2	2	1	2	2	1	2	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	112	8	91	137	52	98	160	99	226	123	120	39	1265
4:15 PM	102	10	77	141	69	76	182	79	169	127	131	28	1191
4:30 PM	104	10	83	118	49	71	186	122	199	131	130	52	1255
4:45 PM	84	9	105	128	47	86	189	110	169	118	128	39	1212
5:00 PM	98	8	100	164	67	65	199	63	219	130	116	49	1278
5:15 PM	105	10	128	146	61	83	195	62	166	115	117	39	1227
5:30 PM	111	1	143	155	60	54	149	65	191	86	98	32	1145
5:45 PM	86	16	155	115	59	55	126	74	121	93	99	29	1028
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	802	72	882	1104	464	588	1386	674	1460	923	939	307	9601
Approach %	45.67	4.10	50.23	51.21	21.52	27.27	39.38	19.15	41.48	42.55	43.29	14.15	
App/Depart	1756	/	1765	2156	/	2847	3520	/	2660	2169	/	2329	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	391	37	416	556	224	305	769	357	753	494	491	179	4972
Approach %	46.33	4.38	49.29	51.24	20.65	28.11	40.93	19.00	40.07	42.44	42.18	15.38	
PEAK HR. FACTOR:		0.868			0.916			0.927			0.930		0.973

CONTROL:	Signal
COMMENT 1:	0
GPS:	33.618298, -111.891344

19-ZN-2019
3/10/2020

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: Loop 101 (SPUI)
E-W STREET: Raintree Dr.

Date: 02/12/19
Day: TUESDAY

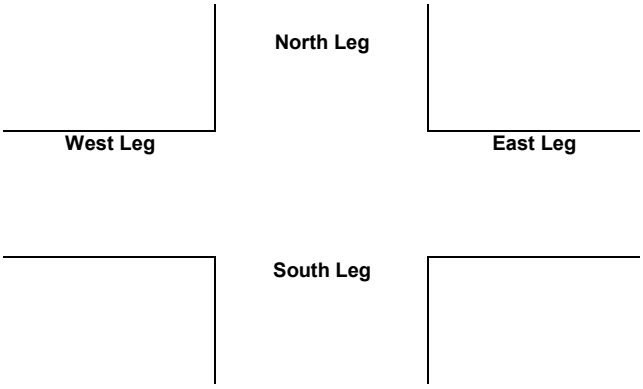
City: Scottsdale
Project #: 19-1085-005

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	1	0	0
8:45 AM	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	1	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**

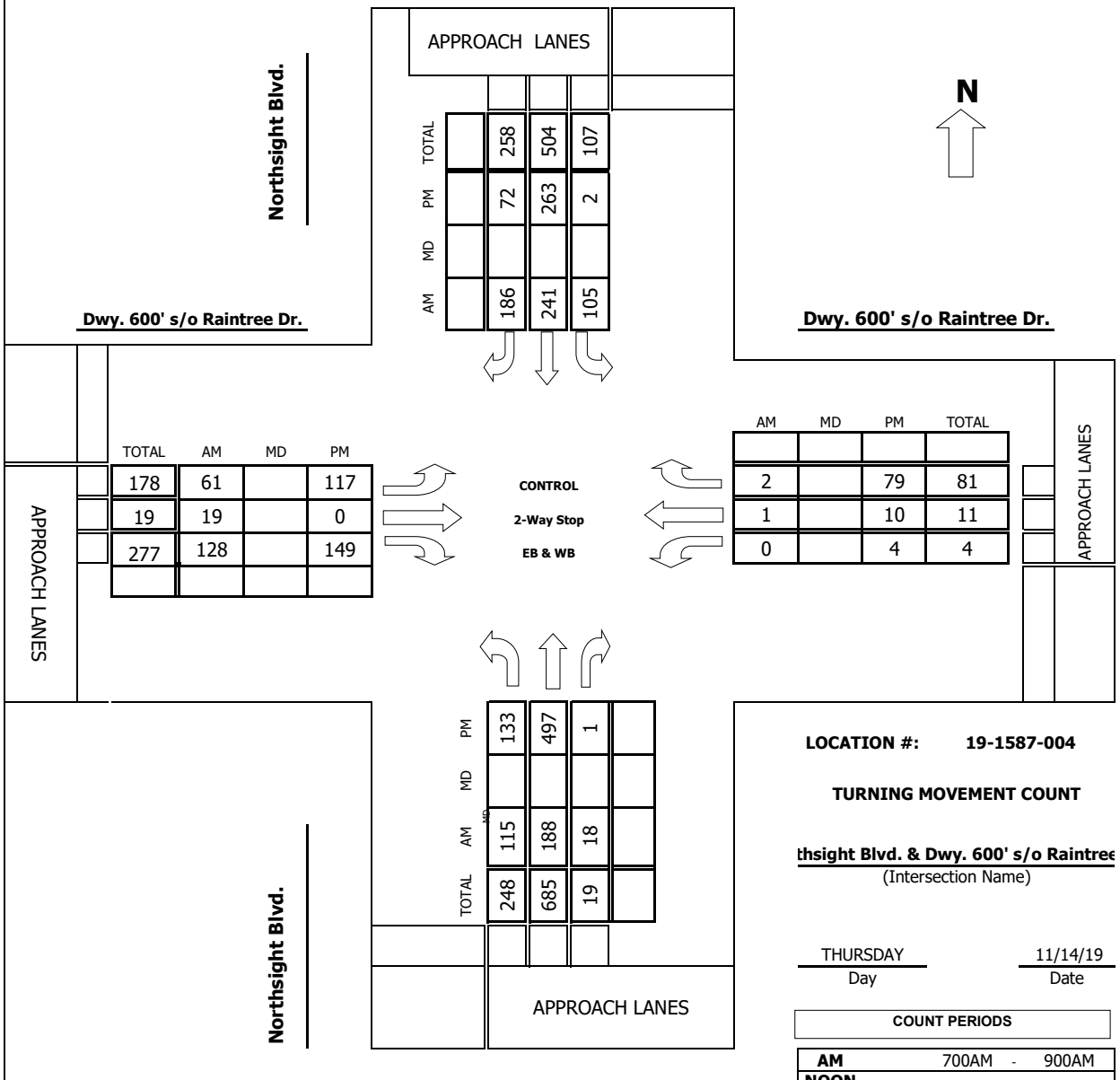


Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1587-004

TMC SUMMARY OF Northsight Blvd. & Dwy. 600' s/o Raintree Dr.



LOCATION #: 19-1587-004

TURNING MOVEMENT COUNT

thsight Blvd. & Dwy. 600' s/o Raintree
(Intersection Name)

THURSDAY — Day
11/14/19 — Date

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 415 PM

19-ZN-2019
3/10/2020

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Northsight Blvd.	DATE:	11/14/19	LOCATION:	Scottsdale
E-W STREET:	Dwy. 600' s/o Raintree Dr.	DAY:	THURSDAY	PROJECT#	19-1587-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	0	1	1	0.5	0.5	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	18	21	2	16	35	19	11	6	8	0	0	2	138
7:15 AM	15	31	0	18	24	24	11	6	17	0	1	0	147
7:30 AM	21	35	2	19	47	23	6	5	25	1	0	0	184
7:45 AM	31	53	6	25	68	44	7	5	32	0	0	3	274
8:00 AM	27	43	3	32	63	45	9	4	35	0	0	0	261
8:15 AM	20	47	9	40	66	37	9	6	35	0	0	0	269
8:30 AM	23	52	3	17	57	40	17	5	27	0	0	1	242
8:45 AM	45	46	3	16	55	64	26	4	31	0	1	1	292
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	200	328	28	183	415	296	96	41	210	1	2	7	1807
Approach %	35.97	58.99	5.04	20.47	46.42	33.11	27.67	11.82	60.52	10.00	20.00	70.00	
App/Depart	556	/	431	894	/	626	347	/	252	10	/	498	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	115	188	18	105	241	186	61	19	128	0	1	2	1064
Approach %	35.83	58.57	5.61	19.74	45.30	34.96	29.33	9.13	61.54	0.00	33.33	66.67	
PEAK HR. FACTOR:		0.854			0.930			0.852			0.375		0.911

CONTROL: 2-Way Stop (EB & WB)
COMMENT 1:
GPS: 33.616525, -111.897792

19-ZN-2019
3/10/2020

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Northsight Blvd. 0	DATE:	11/14/19	LOCATION:	Scottsdale
E-W STREET:	Dwy. 600' s/o Raintree Dr.	DAY:	THURSDAY	PROJECT#	19-1587-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	0	1	1	0.5	0.5	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	23	120	0	0	64	22	35	0	28	1	3	14	310
4:15 PM	27	110	0	0	48	28	27	0	30	1	4	20	295
4:30 PM	40	101	1	1	66	17	42	0	39	0	2	20	329
4:45 PM	32	109	0	0	76	15	24	0	30	2	1	15	304
5:00 PM	34	177	0	1	73	12	24	0	50	1	3	24	399
5:15 PM	21	103	0	0	63	13	19	0	37	0	2	13	271
5:30 PM	14	98	0	1	59	18	18	0	29	1	5	9	252
5:45 PM	19	82	0	0	59	6	25	0	14	0	2	7	214
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	210	900	1	3	508	131	214	0	257	6	22	122	2374
Approach %	18.90	81.01	0.09	0.47	79.13	20.40	45.44	0.00	54.56	4.00	14.67	81.33	
App/Depart	1111	/	1236	642	/	771	471	/	4	150	/	363	

PM Peak Hr Begins at: 415 PM

PEAK													
Volumes	133	497	1	2	263	72	117	0	149	4	10	79	1327
Approach %	21.08	78.76	0.16	0.59	78.04	21.36	43.98	0.00	56.02	4.30	10.75	84.95	
PEAK HR. FACTOR:		0.748			0.926			0.821			0.830		0.831

CONTROL:	2-Way Stop (EB & WB)
COMMENT 1:	0
GPS:	33.616525, -111.897792

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: Northsight Blvd.
E-W STREET: Dwy. 600' s/o Raintree Dr.

Date: 11/14/19
Day: THURSDAY

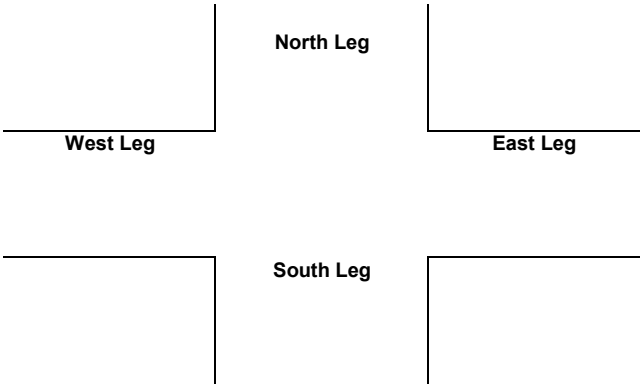
City: Scottsdale
Project #: 19-1587-004

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	2	3
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	2	0
TOTAL	**0**	**0**	**4**	**3**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	0	0
4:15 PM	0	0	1	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**0**	**1**	**0**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**



Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Thursday, November 14, 2019 City: Scottsdale Project #: 19-1587-005

Location: Raintree Dr. east of Northsight Blvd.

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			6		3			12:00			286		313		
00:15			7		10			12:15			226		306		
00:30			4		5			12:30			284		304		
00:45			7	24	3	21	45	12:45			266	1062	277	1200	2262
01:00			4		6			13:00			296		251		
01:15			3		4			13:15			265		227		
01:30			4		2			13:30			269		222		
01:45			8	19	4	16	35	13:45			258	1088	223	923	2011
02:00			0		1			14:00			274		219		
02:15			3		7			14:15			248		198		
02:30			0		1			14:30			289		194		
02:45			4	7	6	15	22	14:45			253	1064	212	823	1887
03:00			3		5			15:00			277		203		
03:15			1		8			15:15			288		249		
03:30			3		17			15:30			256		252		
03:45			6	13	32	62	75	15:45			293	1114	258	962	2076
04:00			4		16			16:00			334		283		
04:15			11		19			16:15			301		263		
04:30			4		30			16:30			359		299		
04:45			10	29	69	134	163	16:45			316	1310	282	1127	2437
05:00			17		51			17:00			382		263		
05:15			22		73			17:15			310		301		
05:30			21		86			17:30			286		255		
05:45			34	94	135	345	439	17:45			255	1233	233	1052	2285
06:00			30		134			18:00			274		201		
06:15			56		152			18:15			216		185		
06:30			57		173			18:30			206		141		
06:45			87	230	225	684	914	18:45			151	847	122	649	1496
07:00			99		231			19:00			217		104		
07:15			140		253			19:15			158		86		
07:30			128		288			19:30			144		57		
07:45			126	493	323	1095	1588	19:45			102	621	55	302	923
08:00			143		336			20:00			103		52		
08:15			145		331			20:15			65		42		
08:30			141		339			20:30			81		27		
08:45			152	581	381	1387	1968	20:45			77	326	29	150	476
09:00			144		336			21:00			93		13		
09:15			147		318			21:15			76		15		
09:30			139		303			21:30			36		17		
09:45			149	579	343	1300	1879	21:45			29	234	16	61	295
10:00			167		268			22:00			21		10		
10:15			169		321			22:15			13		8		
10:30			182		280			22:30			26		5		
10:45			178	696	293	1162	1858	22:45			18	78	5	28	106
11:00			222		272			23:00			17		3		
11:15			236		329			23:15			26		11		
11:30			251		321			23:30			12		6		
11:45			244	953	322	1244	2197	23:45			9	64	4	24	88
Total Vol.			3718		7465		**11183**				9041		7301		**16342**

GPS Coordinates: 33.618318, -111.894449

Daily Totals

NB	SB	EB	WB	Combined
		12759	14766	**27525**

	AM			PM		
Split %	33.2%	66.8%	**40.6%**	55.3%	44.7%	**59.4%**
Peak Hour	11:45	08:00	**11:15**	16:30	12:00	**16:30**
Volume	1040	1387	**2302**	1367	1200	**2512**
P.H.F.	0.91	0.91	**0.96**	0.89	0	

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Thursday, November 14, 2019 City: Scottsdale Project #: 19-1587-006

Location: Northsight Blvd. south of Raintree Dr.

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		3					12:00	165		111				
00:15	6		1					12:15	121		102				
00:30	5		2					12:30	144		113				
00:45	1	12	0	6			18	12:45	122	552	148	474			1026
01:00	1		0					13:00	124		111				
01:15	0		0					13:15	96		124				
01:30	1		0					13:30	106		105				
01:45	1	3	2	2			5	13:45	111	437	96	436			873
02:00	0		0					14:00	124		108				
02:15	3		1					14:15	91		96				
02:30	0		1					14:30	142		103				
02:45	2	5	2	4			9	14:45	88	445	108	415			860
03:00	0		1					15:00	128		94				
03:15	0		1					15:15	134		67				
03:30	1		5					15:30	134		81				
03:45	3	4	14	21			25	15:45	142	538	75	317			855
04:00	0		3					16:00	179		103				
04:15	3		6					16:15	161		79				
04:30	1		7					16:30	183		83				
04:45	7	11	13	29			40	16:45	157	680	101	366			1046
05:00	5		9					17:00	229		88				
05:15	16		26					17:15	136		82				
05:30	6		17					17:30	129		73				
05:45	20	47	32	84			131	17:45	110	604	64	307			911
06:00	12		41					18:00	122		52				
06:15	18		46					18:15	95		54				
06:30	18		55					18:30	62		52				
06:45	36	84	61	203			287	18:45	54	333	46	204			537
07:00	43		79					19:00	87		24				
07:15	45		83					19:15	59		30				
07:30	44		133					19:30	28		34				
07:45	55	187	149	444			631	19:45	20	194	24	112			306
08:00	58		169					20:00	18		18				
08:15	59		141					20:15	17		30				
08:30	87		139					20:30	18		20				
08:45	76	280	143	592			872	20:45	17	70	21	89			159
09:00	76		102					21:00	12		13				
09:15	75		100					21:15	4		11				
09:30	86		90					21:30	7		9				
09:45	69	306	102	394			700	21:45	6	29	8	41			70
10:00	81		99					22:00	7		4				
10:15	80		85					22:15	5		9				
10:30	86		92					22:30	5		8				
10:45	93	340	97	373			713	22:45	2	19	1	22			41
11:00	101		79					23:00	3		3				
11:15	125		96					23:15	12		5				
11:30	130		93					23:30	4		3				
11:45	116	472	119	387			859	23:45	3	22	3	14			36
Total Vol.		1751		2539			**4290**			3923		2797			**6720**

GPS Coordinates: 33.617392, -111.897801

Daily Totals

NB	SB	EB	WB	**Combined**
5674	5336			**11010**

	AM			PM		
Split %	40.8%	59.2%	**39.0%**	58.4%	41.6%	**61.0%**
Peak Hour	11:45	07:45	**11:45**	16:15	12:30	**16:15**
Volume	546	598	**991**	730	496	**1081**
P.H.F.	0.83	0.88	**0.90**	0.80	0.84	

19-ZN-2019
3/10/2020

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Thursday, November 14, 2019 City: Scottsdale Project #: 19-1587-007

Location: 87th St. south of Raintree Dr.

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	3		1					12:00	116		55				
00:15	0		0					12:15	89		52				
00:30	2		1					12:30	94		56				
00:45	1	6	0	2			8	12:45	76	375	75	238			613
01:00	1		1					13:00	89		61				
01:15	1		0					13:15	63		55				
01:30	2		0					13:30	69		54				
01:45	0	4	0	1			5	13:45	57	278	63	233			511
02:00	0		0					14:00	76		42				
02:15	0		0					14:15	71		40				
02:30	0		0					14:30	82		32				
02:45	0	0	1	1			1	14:45	69	298	31	145			443
03:00	3		0					15:00	100		25				
03:15	1		0					15:15	82		34				
03:30	1		3					15:30	101		20				
03:45	0	5	0	3			8	15:45	132	415	27	106			521
04:00	3		0					16:00	161		29				
04:15	0		2					16:15	143		20				
04:30	0		4					16:30	149		22				
04:45	3	6	7	13			19	16:45	130	583	23	94			677
05:00	1		7					17:00	159		20				
05:15	2		10					17:15	145		19				
05:30	4		19					17:30	83		10				
05:45	5	12	42	78			90	17:45	98	485	11	60			545
06:00	3		27					18:00	114		17				
06:15	9		45					18:15	81		7				
06:30	9		49					18:30	59		14				
06:45	14	35	93	214			249	18:45	61	315	6	44			359
07:00	19		92					19:00	72		7				
07:15	18		87					19:15	39		10				
07:30	20		90					19:30	21		6				
07:45	22	79	141	410			489	19:45	18	150	9	32			182
08:00	23		159					20:00	19		7				
08:15	20		149					20:15	9		6				
08:30	33		103					20:30	13		5				
08:45	39	115	101	512			627	20:45	11	52	3	21			73
09:00	29		95					21:00	11		6				
09:15	29		57					21:15	7		5				
09:30	28		49					21:30	10		3				
09:45	28	114	63	264			378	21:45	6	34	3	17			51
10:00	38		43					22:00	6		0				
10:15	34		42					22:15	8		1				
10:30	54		32					22:30	2		2				
10:45	62	188	37	154			342	22:45	10	26	4	7			33
11:00	74		25					23:00	4		2				
11:15	112		39					23:15	0		3				
11:30	96		38					23:30	1		0				
11:45	93	375	47	149			524	23:45	1	6	0	5			11
Total Vol.		939		1801			**2740**			3017		1002			**4019**

GPS Coordinates: 33.617453, -111.893209

Daily Totals

NB	SB	EB	WB	Combined
3956	2803			**6759**

	AM			PM		
Split %	34.3%	65.7%	**40.5%**	75.1%	24.9%	**59.5%**
Peak Hour	11:15	07:45	**07:45**	15:45	12:30	**15:45**
Volume	417	552	**650**	585	247	**683**
P.H.F.	0.90	0.87	**0.89**	0.91	0.82	

19-ZN-2019
3/10/2020

Appendix E – Signal Timing

E

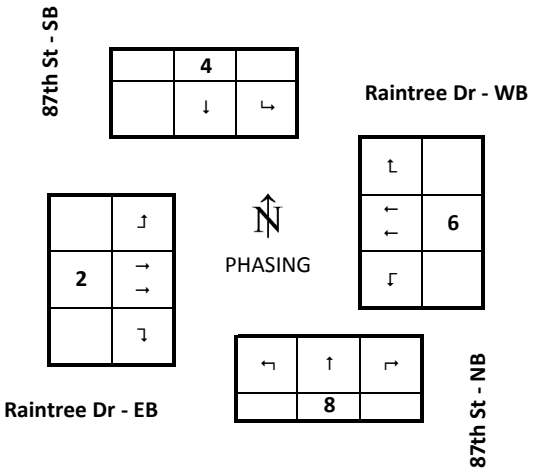
Raintree Dr & 87th St

System # 267

BASIC TIMING PLAN

Section #	I.P. Address	Date Designed
	MM1-5-1	
	172.17.12.67	2/20/2018

	Phase		2		4		6		8
	Movement		EBT		SBT		WBT		NBT
	NOTES								
TIMING PLAN - MM-2-1	MIN GRN		10		7		10		7
	BK MGRN								
	CS MGRN								
	DLY GRN								
	WALK		8		8		8		8
	WALK2								
	WLK MAX								
	PED CLR/FDW		20		33		20		33
	PD CLR2								
	PC MAX								
	PED CO								
	VEH EXT		1		2		1		2
	VH EXT2								
	MAX 1		50		50		50		50
	MAX 2		60		60		60		60
	MAX 3								
	DYM MAX								
	DYM STP								
	YELLOW		4.0		4.4		4		4.4
	RED CLR		1.7		2.0		1.7		2.0
	RED MAX								
	RED RVT		2		2		2		2
	ACT B4								
	SEC/ACT								
	MAX INT								
	TIME B4								
	CARS WT								
	STPTDUC								
	TTREDUC								
	MIN GAP								
RECALLS - MM-2-8	LOCK DET								
	VEH RECALL		X				X		
	PED RECALL								
	MAX RECALL								
	SOFT RECALL								
	NO REST								
	ADD INIT CAL								



PHASING SEQUENCES				
TOD: MORNING				
R1	2		4	
R2	6		8	
		B		B
Use Timing plan:				
TOD: MIDDAY				
R1	2		4	
R2	6		8	
		B		B
Use Timing plan:				
TOD: EVENING				
R1	2		4	
R2	6		8	
		B		B
Use Timing plan:				
TOD: WEEKEND				
R1	2		4	
R2	6		8	
		B		B
Use Timing plan:				
FREE				
R1	2		4	
R2	6		8	
		B		B
Use Timing plan: 254				

NOTES

EXPIRES XX/XX/XXXX

19-ZN-2019
3/10/2020

Raintree Dr & 87th St

System #	267

COORDINATOR	Section #	Date Updated
	101	2/20/2018

PHASE	1	2	3	4	5	6	7	8
FDW		20		33		20		33
YELLOW		4		4.4		4		4.4
ALL RED		1.7		2		1.7		2
WALK		20		33		20		33

PLAN 1 AM PLAN OPERATIVE TIMES (6:30)

										COORD PATTERN	OFFSET
R1	2	→			4	↓					
R2	6	←			8	↑				Balanced	100
	RING 1				RING 2						
PHASE		2		4		6		8			
SPLIT		85		35		85		35		Target Cycle Length	
COORD		X				X				120	
RECALLS		V				V				Actual Cycle Length	
GREEN		79.3		28.6		79.3		28.6		120	

PLAN 4 MIDDAY PLAN OPERATIVE TIMES (9:00)

										COORD PATTERN	OFFSET
R1	2	→			4	↓					
R2	6	←			8	↑				Balanced	68
	RING 1				RING 2						
PHASE		2		4		6		8			
SPLIT		82		38		82		38		Target Cycle Length	
COORD		X				X				120	
RECALLS		V				V				Actual Cycle Length	
GREEN		76.3		31.6		76.3		31.6		120	

PLAN 7 PM PLAN OPERATIVE TIMES (14:30)

										COORD PATTERN	OFFSET
R1	2	→			4	↓					
R2	6	←			8	↑				Balanced	105
	RING 1				RING 2						
PHASE		2		4		6		8			
SPLIT		75		45		75		45		Target Cycle Length	
COORD		X				X				120	
RECALLS		V				V				Actual Cycle Length	
GREEN		69.3		38.6		69.3		38.6		120	

PLAN 10 MIDNIGHT PLAN OPERATIVE TIMES (20:00)

										COORD PATTERN	OFFSET
R1	2	→			4	↓					
R2	6	←			8	↑				Balanced	60
	RING 1				RING 2						
PHASE		2		4		6		8			
SPLIT		67		23		67		23		Target Cycle Length	
COORD		X				X				90	
RECALLS		V				V				Actual Cycle Length	
GREEN		61.3		16.6		61.3		16.6		90	

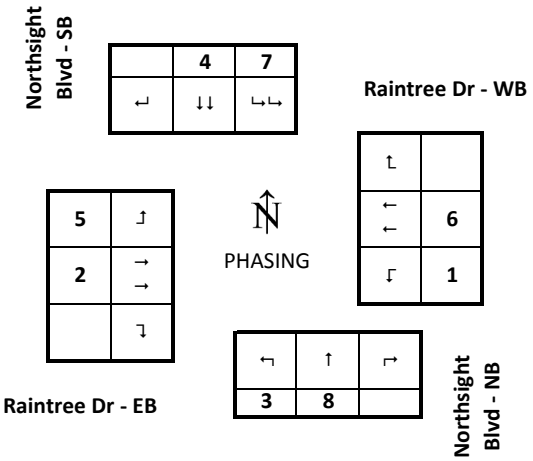
Raintree Dr & Northsight Blvd

System # 237

BASIC TIMING PLAN

Section #	I.P. Address	Date Designed
	MM1-5-1	
101	172.17.12.37	2/5/2019

	Phase	1	2	3	4	5	6	7	8
	Movement	WBL	EBT	NBL	SBT	EBL	WBT	SBL	NBT
	NOTES	p&P		P		p&P		P	
TIMING PLAN - MM-2-1	MIN GRN	5	10	5	7	5	10	5	7
	BK MGRN								
	CS MGRN								
	DLY GRN								
	WALK		7		7		7		7
	WALK2								
	WLK MAX								
	PED CLR/FDW		20		20		23		20
	PD CLR2								
	PC MAX								
	PED CO								
	VEH EXT	2	2	2	2	2	2	2	2
	VH EXT2								
	MAX 1	25	45	25	45	25	45	25	45
	MAX 2	35	60	35	60	35	60	35	60
	MAX 3								
	DYM MAX								
	DYM STP								
	YELLOW	3.3	4.0	3.6	4.4	3.3	4	3.6	4.4
	RED CLR	2	1.3	1	1.1	2	1.3	1	1.1
	RED MAX								
	RED RVT	2	2	2	2	2	2	2	2
	ACT B4								
	SEC/ACT								
	MAX INT								
	TIME B4								
	CARS WT								
	STPTDUC								
	TTREDUC								
	MIN GAP								
RECALLS - MM-2-8	LOCK DET								
	VEH RECALL		X				X		
	PED RECALL								
	MAX RECALL								
	SOFT RECALL								
	NO REST								
	ADD INIT CAL								



PHASING SEQUENCES

TOD: MORNING
R1: 2 1 4 3
R2: 6 5 8 7
B B B
Use Timing plan:

TOD: MIDDAY
R1: 2 1 4 3
R2: 6 5 8 7
B B B
Use Timing plan:

TOD: EVENING
R1: 2 1 4 3
R2: 6 5 8 7
B B B
Use Timing plan:

TOD: WEEKEND
R1: 2 1 4 3
R2: 6 5 8 7
B B B
Use Timing plan:

FREE
R1: 2 1 4 3
R2: 6 5 8 7
B B B
Use Timing plan: 254

NOTES

EXPIRES XX/XX/XXXX

19-ZN-2019
3/10/2020

Raintree Dr & Northsight Blvd

System #	237

COORDINATOR	Section #	Date Updated
	101	2/5/2019

	PHASE	1	2	3	4	5	6	7	8
	FDW		20		20		23		20
	YELLOW	3.3	4	3.6	4.4	3.3	4	3.6	4.4
	ALL RED	2	1.3	1	1.1	2	1.3	1	1.1
	WALK		20		20		23		20

PLAN 1 AM PLAN OPERATIVE TIMES **6:30**	R1	2	→	1	↓	4	↓	3	↰	COORD PATTERN	OFFSET
	R2	6	←	5	↑	8	↑	7	↳	Balanced	76
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	37	35	15	33	18	54	15	33	Target Cycle Length	
	COORD									120	
	RECALLS									Actual Cycle Length	
	GREEN	31.7	29.7	10.4	27.5	12.7	48.7	10.4	27.5	120	

PLAN 2 MIDDAY PLAN OPERATIVE TIMES **9:00**	R1	2	→	1	↓	4	↓	3	↰	COORD PATTERN	OFFSET
	R2	6	←	5	↑	8	↑	7	↳	Balanced	90
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	19	50	18	33	20	49	18	33	Target Cycle Length	
	COORD									120	
	RECALLS									Actual Cycle Length	
	GREEN	13.7	44.7	13.4	27.5	14.7	43.7	13.4	27.5	120	

PLAN 3 PM PLAN OPERATIVE TIMES **14:30**	R1	2	→	1	↓	4	↓	3	↰	COORD PATTERN	OFFSET
	R2	6	←	5	↑	8	↑	7	↳	Balanced	31
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	16	50	25	29	16	50	17	37	Target Cycle Length	
	COORD									120	
	RECALLS									Actual Cycle Length	
	GREEN	10.7	44.7	20.4	23.5	10.7	44.7	12.4	31.5	120	

PLAN 4 MIDNIGHT PLAN OPERATIVE TIMES	R1	2	→	1	↓	4	↓	3	↰	COORD PATTERN	OFFSET
	R2	6	←	5	↑	8	↑	7	↳	Balanced	
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT									Target Cycle Length	
	COORD										
	RECALLS									Actual Cycle Length	
	GREEN	-5.3	-5.3	-4.6	-5.5	-5.3	-5.3	-4.6	-5.5	0	

PLAN 254 **FREE** PLAN OPERATIVE TIMES 20:00	R1	2	→	1	↓	4	↓	3	↰	COORD PATTERN	OFFSET
	R2	6	←	5	↑	8	↑	7	↳	Balanced	
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT									Target Cycle Length	
	COORD									XXX	
	RECALLS									Actual Cycle Length	
	GREEN	-5.3	-5.3	-4.6	-5.5	-5.3	-5.3	-4.6	-5.5	0	

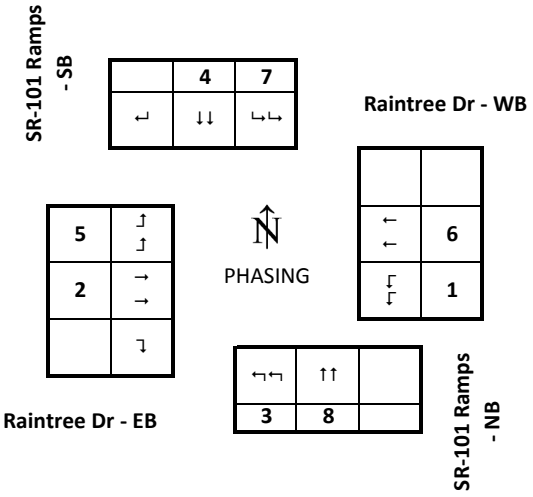
Raintree Dr & SR-101 Ramps

System # 173

BASIC TIMING PLAN

Section #	I.P. Address	Date Designed
	MM1-5-1	
	172.17.11.73	2/26/2018

	Phase	1	2	3	4	5	6	7	8
TIMING PLAN - MM-2-1	Movement	WBL	EBT	NBL	SBT	EBL	WBT	SBL	NBT
	NOTES	PROT		PROT		PROT		PROT	
	MIN GRN	5	10	5	10	5	10	5	10
	BK MGRN								
	CS MGRN								
	DLY GRN								
	WALK		4		7		4		7
	WALK2								
	WLK MAX								
	PED CLR/FDW		14		27		17		27
	PD CLR2								
	PC MAX								
	PED CO								
	VEH EXT	2	2	2	2	2	2	2	2
	VH EXT2								
	MAX 1	35	50	35	50	35	50	35	50
	MAX 2	45	60	45	60	45	60	45	60
	MAX 3								
	DYM MAX								
	DYM STP								
	YELLOW	3.6	4.0	4	4.7	3.3	4.4	4.0	4.7
	RED CLR	2	2.8	1.4	1.4	2.4	2.4	1.4	1.4
	RED MAX								
	RED RVT	2	2	2	2	2	2	2	2
	ACT B4								
	SEC/ACT								
	MAX INT								
	TIME B4								
	CARS WT								
	STPTDUC								
	TTREDUC								
	MIN GAP								
RECALLS - MM-2-8	LOCK DET								
	VEH RECALL	X	X			X	X		
	PED RECALL								
	MAX RECALL								
	SOFT RECALL								
	NO REST								
	ADD INIT CAL								



PHASING SEQUENCES				
TOD: MORNING				
R1	2	1	4	3
R2	6	5	8	7
		B		B
Use Timing plan:				
TOD: MIDDAY				
R1	2	1	4	3
R2	6	5	8	7
		B		B
Use Timing plan:				
TOD: EVENING				
R1	2	1	4	3
R2	6	5	8	7
		B		B
Use Timing plan:				
TOD: NIHGt				
R1	2	1	4	3
R2	6	5	8	7
		B		B
Use Timing plan:				
FREE				
R1	2	1	4	3
R2	6	5	8	7
		B		B
Use Timing plan: 254				

NOTES

EXPIRES XX/XX/XXXX

19-ZN-2019
3/10/2020

Raintree Dr & SR-101 Ramps

System # 173

COORDINATOR

Section # 101

Date Updated 2/26/2018

	PHASE	1	2	3	4	5	6	7	8	
	FDW		14		27		17		27	
	YELLOW	3.6	4	4	4.7	3.3	4.4	4	4.7	
	ALL RED	2	2.8	1.4	1.4	2.4	2.4	1.4	1.4	
	WALK		14		27		17		27	

PLAN 1 AM PLAN OPERATIVE TIMES (6:30)	R1	1	↱	2	→	4	↓	3	↰	COORD PATTERN	OFFSET
	R2	5	↱	6	←	8	↑	7	↳	Balanced	17
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	37	24	39	20	30	31	21	38	Target Cycle Length	
	COORD		X				X			120	
	RECALLS		V				V			Actual Cycle Length	
	GREEN	31.4	17.2	33.6	13.9	24.3	24.2	15.6	31.9	120	

PLAN 4 MIDDAY PLAN OPERATIVE TIMES (9:00)	R1	2	→	1	↱	4	↓	3	↰	COORD PATTERN	OFFSET
	R2	6	←	5	↱	8	↑	7	↳	Balanced	101
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	31	38	31	20	35	34	27	24	Target Cycle Length	
	COORD		X				X			120	
	RECALLS		V				V			Actual Cycle Length	
	GREEN	25.4	31.2	25.6	13.9	29.3	27.2	21.6	17.9	120	

PLAN 7 PM PLAN OPERATIVE TIMES (14:30)	R1	2	→	1	↱	4	↓	3	↰	COORD PATTERN	OFFSET
	R2	6	←	5	↱	8	↑	7	↳	Balanced	19
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	36	34	26	24	36	34	28	22	Target Cycle Length	
	COORD		X				X			120	
	RECALLS		V				V			Actual Cycle Length	
	GREEN	30.4	27.2	20.6	17.9	30.3	27.2	22.6	15.9	120	

PLAN 254 **FREE** PLAN OPERATIVE TIMES (20:00)	R1	2	→	1	↱	4	↓	3	↰	COORD PATTERN	OFFSET
	R2	6	←	5	↱	8	↑	7	↳	Balanced	0
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT									Target Cycle Length	
	COORD										
	RECALLS									Actual Cycle Length	
	GREEN									0	

Appendix F – Existing Capacity Analysis

19-ZN-2019
3/10/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	360	114	311	657	219	54	145	69	148	160	60
Future Volume (veh/h)	113	360	114	311	657	219	54	145	69	148	160	60
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	124	396	125	342	722	241	59	159	76	163	176	66
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	846	492	219	1024	823	367	149	216	99	219	252	112
Arrive On Green	0.44	0.14	0.14	1.00	0.46	0.46	0.08	0.09	0.09	0.06	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	2370	1082	3456	3554	1585
Grp Volume(v), veh/h	124	396	125	342	722	241	59	117	118	163	176	66
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1676	1728	1777	1585
Q Serve(g_s), s	0.7	13.0	8.9	0.0	22.1	14.1	3.8	7.7	8.2	5.6	5.8	4.8
Cycle Q Clear(g_c), s	0.7	13.0	8.9	0.0	22.1	14.1	3.8	7.7	8.2	5.6	5.8	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.65	1.00		1.00
Lane Grp Cap(c), veh/h	846	492	219	1024	823	367	149	162	153	219	252	112
V/C Ratio(X)	0.15	0.81	0.57	0.33	0.88	0.66	0.40	0.72	0.77	0.74	0.70	0.59
Avail Cap(c_a), veh/h	846	880	392	1024	1442	643	154	407	384	299	814	363
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)	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	18.7	50.1	48.4	0.0	30.7	28.5	52.1	53.1	53.3	55.2	54.5	54.1
Incr Delay (d2), s/veh	0.0	13.1	10.3	0.1	12.7	8.9	0.6	2.3	3.1	3.8	1.3	1.8
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	1.9	6.6	4.1	0.0	8.6	5.1	1.7	3.5	3.5	2.5	2.6	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	63.3	58.7	0.1	43.4	37.4	52.7	55.4	56.4	59.0	55.8	55.9
LnGrp LOS	B	E	E	A	D	D	D	E	E	E	E	E
Approach Vol, veh/h		645			1305			294			405	
Approach Delay, s/veh		53.8			30.9			55.3			57.1	
Approach LOS		D			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	69.5	21.9	14.6	14.0	58.3	33.1	12.2	16.4
Change Period (Y+Rc), s	* 5.3	* 5.3	* 4.6	5.5	* 5.3	* 5.3	* 4.6	5.5
Max Green Setting (Gmax), s	* 32	* 30	* 10	27.5	* 13	* 49	* 10	27.5
Max Q Clear Time (g_c+I1), s	2.0	15.0	5.8	7.8	2.7	24.1	7.6	10.2
Green Ext Time (p_c), s	0.5	1.6	0.0	0.7	0.1	3.7	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

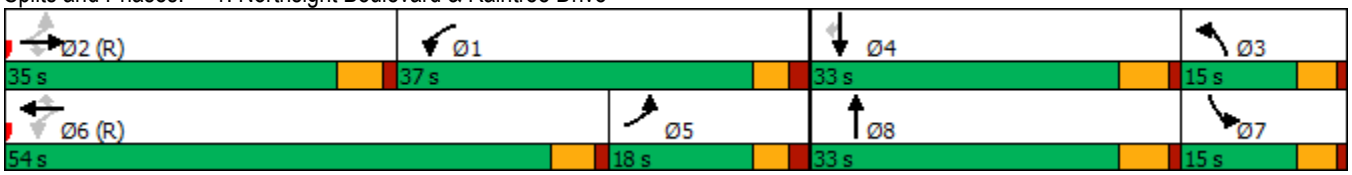
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	113	360	114	311	657	219	54	145	148	160	60
Future Volume (vph)	113	360	114	311	657	219	54	145	148	160	60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6					4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	7.0	5.0	7.0	7.0
Minimum Split (s)	10.3	32.3	32.3	10.3	35.3	35.3	9.6	32.5	9.6	32.5	32.5
Total Split (s)	18.0	35.0	35.0	37.0	54.0	54.0	15.0	33.0	15.0	33.0	33.0
Total Split (%)	15.0%	29.2%	29.2%	30.8%	45.0%	45.0%	12.5%	27.5%	12.5%	27.5%	27.5%
Yellow Time (s)	3.3	4.0	4.0	3.3	4.0	4.0	3.6	4.4	3.6	4.4	4.4
All-Red Time (s)	2.0	1.3	1.3	2.0	1.3	1.3	1.0	1.1	1.0	1.1	1.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	4.6	5.5	4.6	5.5	5.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
Act Effct Green (s)	71.3	61.1	61.1	83.3	68.3	68.3	10.1	10.7	10.1	12.7	12.7
Actuated g/C Ratio	0.59	0.51	0.51	0.69	0.57	0.57	0.08	0.09	0.08	0.11	0.11
v/c Ratio	0.27	0.22	0.14	0.45	0.36	0.24	0.40	0.66	0.57	0.47	0.21
Control Delay	10.8	18.8	1.9	14.1	24.0	12.0	58.8	47.4	60.4	55.5	1.6
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	10.8	18.8	1.9	14.1	24.0	12.0	58.8	47.4	60.4	55.5	1.6
LOS	B	B	A	B	C	B	E	D	E	E	A
Approach Delay		14.0			19.2			49.7		48.7	
Approach LOS		B			B			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 54.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Northsight Boulevard & Raintree Drive



Intersection	
Int Delay, s/veh	1.3

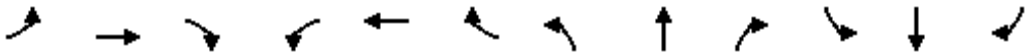
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	535	5	181	1185	15	1	0	9	31	0	9
Future Vol, veh/h	19	535	5	181	1185	15	1	0	9	31	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	105	175	-	135	-	-	0	-	-	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	21	582	5	197	1288	16	1	0	10	34	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1304	0	0	587	0	0	1662	2322	291	2015	2311	644
Stage 1	-	-	-	-	-	-	624	624	-	1682	1682	-
Stage 2	-	-	-	-	-	-	1038	1698	-	333	629	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*882	-	-	1304	-	-	*356	78	*871	*268	82	*589
Stage 1	-	-	-	-	-	-	*773	688	-	*255	272	-
Stage 2	-	-	-	-	-	-	*556	263	-	*822	684	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*882	-	-	1304	-	-	*304	65	*871	*230	68	*589
Mov Cap-2 Maneuver	-	-	-	-	-	-	*304	65	-	*230	68	-
Stage 1	-	-	-	-	-	-	*755	671	-	*249	231	-
Stage 2	-	-	-	-	-	-	*464	224	-	*793	668	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.1	10	20.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	304	871	* 882	-	-	1304	-	-	230	589
HCM Lane V/C Ratio	0.004	0.011	0.023	-	-	0.151	-	-	0.147	0.017
HCM Control Delay (s)	16.9	9.2	9.2	-	-	8.3	-	-	23.3	11.2
HCM Lane LOS	C	A	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0	0	0.1	-	-	0.5	-	-	0.5	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	488	81	361	1293	187	22	24	69	77	64	92
Future Volume (veh/h)	23	488	81	361	1293	187	22	24	69	77	64	92
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	514	85	380	1361	197	23	25	73	81	67	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	2734	1219	690	2734	1219	105	243	206	213	90	130
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	331	3554	1585	820	3554	1585	1222	1870	1585	1297	691	1000
Grp Volume(v), veh/h	24	514	85	380	1361	197	23	25	73	81	0	164
Grp Sat Flow(s),veh/h/ln	331	1777	1585	820	1777	1585	1222	1870	1585	1297	0	1690
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	2.2	1.4	5.0	7.0	0.0	11.2
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	13.4	1.4	5.0	8.5	0.0	11.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	315	2734	1219	690	2734	1219	105	243	206	213	0	220
V/C Ratio(X)	0.08	0.19	0.07	0.55	0.50	0.16	0.22	0.10	0.35	0.38	0.00	0.75
Avail Cap(c_a), veh/h	315	2734	1219	690	2734	1219	237	446	378	354	0	403
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.37	0.37	0.37	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	56.8	46.0	47.6	49.8	0.0	50.3
Incr Delay (d2), s/veh	0.5	0.2	0.1	1.2	0.2	0.1	0.4	0.1	0.4	0.4	0.0	1.9
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	0.0	0.1	0.0	0.2	0.1	0.0	0.7	0.7	2.0	2.3	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.5	0.2	0.1	1.2	0.2	0.1	57.2	46.1	48.0	50.2	0.0	52.2
LnGrp LOS	A	A	A	A	A	A	E	D	D	D	A	D
Approach Vol, veh/h		623			1938			121			245	
Approach Delay, s/veh		0.2			0.4			49.3			51.5	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		98.0		22.0		98.0		22.0				
Change Period (Y+Rc), s		* 5.7		6.4		* 5.7		6.4				
Max Green Setting (Gmax), s		* 79		28.6		* 79		28.6				
Max Q Clear Time (g_c+I1), s		2.0		13.2		2.0		15.4				
Green Ext Time (p_c), s		1.6		0.7		6.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		6.7
HCM 6th LOS		A

Notes

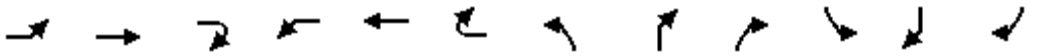
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	23	488	81	361	1293	187	22	24	69	77	64
Future Volume (vph)	23	488	81	361	1293	187	22	24	69	77	64
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		2			6			8			4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	6	6	6	8	8	8	4	4
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	33.7	33.7	33.7	33.7	33.7	33.7	47.4	47.4	47.4	47.4	47.4
Total Split (s)	85.0	85.0	85.0	85.0	85.0	85.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	70.8%	70.8%	70.8%	70.8%	70.8%	70.8%	29.2%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.7	1.7	1.7	1.7	1.7	1.7	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.7	5.7	6.4	6.4	6.4	6.4	6.4
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None
Act Effct Green (s)	95.4	95.4	95.4	95.4	95.4	95.4	12.5	12.5	12.5	12.5	12.5
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.80	0.80	0.10	0.10	0.10	0.10	0.10
v/c Ratio	0.09	0.18	0.07	0.56	0.48	0.15	0.28	0.13	0.32	0.57	0.72
Control Delay	4.0	2.5	1.1	7.6	4.6	1.1	56.1	47.8	14.1	65.2	51.0
Queue Delay	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.0	2.5	1.1	8.2	5.1	1.1	56.1	47.8	14.1	65.2	51.0
LOS	A	A	A	A	A	A	E	D	B	E	D
Approach Delay		2.4			5.3			29.1			55.7
Approach LOS		A			A			C			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 9.9	Intersection LOS: A
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: 87th Street & Raintree Drive



Movement	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR	NBR2	SBL	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	314	149	188	592	372	142	771	72	199	397	227	604
Future Volume (vph)	314	149	188	592	372	142	771	72	199	397	227	604
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.8	6.8	5.6	6.8		5.4	6.1		5.4	6.1	6.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.88		0.97	0.88	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.85		1.00	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3393		3433	2787		3433	2787	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3393		3433	2787		3433	2787	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	334	159	200	630	396	151	820	77	212	422	241	643
RTOR Reduction (vph)	0	0	168	0	140	0	0	193	0	0	0	341
Lane Group Flow (vph)	334	159	32	630	407	0	820	96	0	422	241	302
Turn Type	Prot	NA	Perm	Prot	NA		Prot	Prot		Prot	Prot	Prot
Protected Phases	5	2		1	6		3	8		7	4	4
Permitted Phases			2									
Actuated Green, G (s)	16.0	19.0	19.0	26.2	29.1		31.6	10.8		40.1	19.3	19.3
Effective Green, g (s)	16.0	19.0	19.0	26.2	29.1		31.6	10.8		40.1	19.3	19.3
Actuated g/C Ratio	0.13	0.16	0.16	0.22	0.24		0.26	0.09		0.33	0.16	0.16
Clearance Time (s)	5.7	6.8	6.8	5.6	6.8		5.4	6.1		5.4	6.1	6.1
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	457	560	250	749	822		904	250		1147	448	254
v/s Ratio Prot	0.10	0.04		c0.18	c0.12		c0.24	0.03		0.12	0.09	c0.19
v/s Ratio Perm			0.02									
v/c Ratio	0.73	0.28	0.13	0.84	0.49		0.91	0.38		0.37	0.54	1.19
Uniform Delay, d1	49.9	44.5	43.4	44.9	39.1		42.8	51.5		30.3	46.3	50.4
Progression Factor	0.86	1.20	4.61	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.1	1.3	1.0	8.1	2.1		12.3	0.4		0.1	0.6	117.8
Delay (s)	47.8	54.8	201.0	53.0	41.3		55.1	51.8		30.4	46.9	168.1
Level of Service	D	D	F	D	D		E	D		C	D	F
Approach Delay (s)		93.6			47.6							
Approach LOS		F			D							

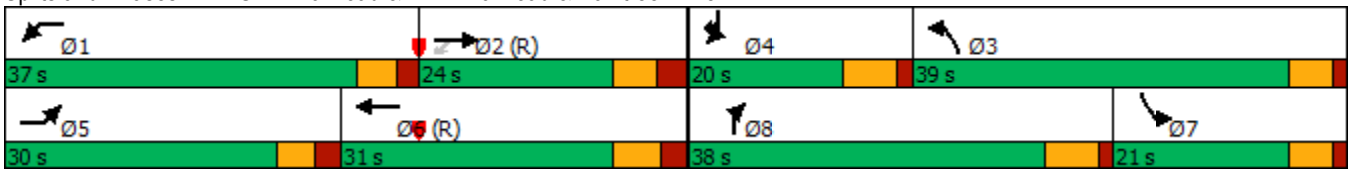
Intersection Summary			
HCM 2000 Control Delay	73.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR2	WBL	WBT	NBL	NBR	SBL	SBR	SBR2
Lane Configurations										
Traffic Volume (vph)	314	149	188	592	372	771	72	397	227	604
Future Volume (vph)	314	149	188	592	372	771	72	397	227	604
Turn Type	Prot	NA	Perm	Prot	NA	Prot	Prot	Prot	Prot	Prot
Protected Phases	5	2		1	6	3	8	7	4	4
Permitted Phases			2							
Detector Phase	5	2	2	1	6	3	8	7	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.7	24.8	24.8	10.6	27.8	10.4	40.1	10.4	40.1	40.1
Total Split (s)	30.0	24.0	24.0	37.0	31.0	39.0	38.0	21.0	20.0	20.0
Total Split (%)	25.0%	20.0%	20.0%	30.8%	25.8%	32.5%	31.7%	17.5%	16.7%	16.7%
Yellow Time (s)	3.3	4.0	4.0	3.6	4.4	4.0	4.7	4.0	4.7	4.7
All-Red Time (s)	2.4	2.8	2.8	2.0	2.4	1.4	1.4	1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	6.8	6.8	5.6	6.8	5.4	6.1	5.4	6.1	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	None	None	None	None	None
Act Effct Green (s)	16.0	19.1	19.1	26.2	29.2	31.5	10.8	40.1	19.3	19.3
Actuated g/C Ratio	0.13	0.16	0.16	0.22	0.24	0.26	0.09	0.33	0.16	0.16
v/c Ratio	0.73	0.28	0.45	0.84	0.57	0.91	0.65	0.37	0.54	1.08
Control Delay	52.1	56.8	18.2	55.7	29.0	57.6	22.6	31.8	52.0	79.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	4.3
Total Delay	52.1	56.8	18.2	55.7	29.1	58.0	22.6	31.8	52.0	83.3
LOS	D	E	B	E	C	E	C	C	D	F
Approach Delay		43.4			43.3					
Approach LOS		D			D					

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 50.1	Intersection LOS: D
Intersection Capacity Utilization 88.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: SB Pima Road & NB Pima Road & Raintree Drive



Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	19	128	0	1	2	115	188	18	105	241	186
Future Vol, veh/h	61	19	128	0	1	2	115	188	18	105	241	186
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	-	-	0	95	-	-	155	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	21	141	0	1	2	126	207	20	115	265	204

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	953	1076	235	842	1168	114	469	0	0	227	0	0
Stage 1	597	597	-	469	469	-	-	-	-	-	-	-
Stage 2	356	479	-	373	699	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	262	250	991	320	218	917	1201	-	-	1339	-	-
Stage 1	553	554	-	544	559	-	-	-	-	-	-	-
Stage 2	634	553	-	766	495	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	223	204	991	218	178	917	1201	-	-	1339	-	-
Mov Cap-2 Maneuver	223	204	-	218	178	-	-	-	-	-	-	-
Stage 1	495	507	-	487	500	-	-	-	-	-	-	-
Stage 2	565	495	-	576	453	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18	14.4	3	1.6
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1201	-	-	218	991	178	917	1339	-	-
HCM Lane V/C Ratio	0.105	-	-	0.403	0.142	0.006	0.002	0.086	-	-
HCM Control Delay (s)	8.3	-	-	32.2	9.2	25.4	8.9	7.9	-	-
HCM Lane LOS	A	-	-	D	A	D	A	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	1.8	0.5	0	0	0.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	716	66	105	701	297	174	284	239	326	174	102
Future Volume (veh/h)	159	716	66	105	701	297	174	284	239	326	174	102
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	175	787	73	115	770	326	191	312	263	358	191	112
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	554	914	408	570	931	415	372	365	301	357	326	145
Arrive On Green	0.26	0.26	0.26	0.09	0.09	0.09	0.21	0.20	0.20	0.10	0.09	0.09
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1850	1523	3456	3554	1585
Grp Volume(v), veh/h	175	787	73	115	770	326	191	299	276	358	191	112
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1596	1728	1777	1585
Q Serve(g_s), s	3.4	25.4	4.3	1.1	25.6	24.2	11.4	19.5	20.1	12.4	6.2	8.3
Cycle Q Clear(g_c), s	3.4	25.4	4.3	1.1	25.6	24.2	11.4	19.5	20.1	12.4	6.2	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.95	1.00		1.00
Lane Grp Cap(c), veh/h	554	914	408	570	931	415	372	351	315	357	326	145
V/C Ratio(X)	0.32	0.86	0.18	0.20	0.83	0.78	0.51	0.85	0.87	1.00	0.59	0.77
Avail Cap(c_a), veh/h	554	1324	590	570	1324	590	372	466	419	357	696	310
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	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	32.6	42.5	34.7	39.3	52.1	51.5	42.1	46.5	46.7	53.8	52.3	53.3
Incr Delay (d2), s/veh	0.1	10.5	1.0	0.1	8.3	13.8	0.5	9.0	12.2	48.3	0.6	3.2
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	3.9	12.3	1.7	3.1	13.3	11.9	5.0	9.3	8.9	7.7	2.7	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	53.0	35.7	39.4	60.5	65.3	42.6	55.4	58.9	102.1	52.9	56.5
LnGrp LOS	C	D	D	D	E	E	D	E	E	F	D	E
Approach Vol, veh/h		1035			1211			766			661	
Approach Delay, s/veh		48.4			59.8			53.5			80.1	
Approach LOS		D			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.7	36.2	29.7	16.5	37.1	36.8	17.0	29.2
Change Period (Y+Rc), s	* 5.3	* 5.3	* 4.6	5.5	* 5.3	* 5.3	* 4.6	5.5
Max Green Setting (Gmax), s	* 11	* 45	* 20	23.5	* 11	* 45	* 12	31.5
Max Q Clear Time (g_c+I1), s	3.1	27.4	13.4	10.3	5.4	27.6	14.4	22.1
Green Ext Time (p_c), s	0.1	3.5	0.1	0.7	0.1	3.9	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	58.9
HCM 6th LOS	E

Notes

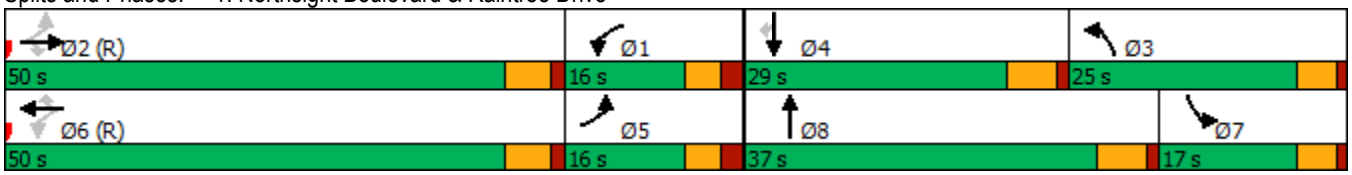
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	159	716	66	105	701	297	174	284	326	174	102
Future Volume (vph)	159	716	66	105	701	297	174	284	326	174	102
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	7	4	
Permitted Phases	2		2	6		6					4
Detector Phase	5	2	2	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	7.0	5.0	7.0	7.0
Minimum Split (s)	10.3	32.3	32.3	10.3	35.3	35.3	9.6	32.5	9.6	32.5	32.5
Total Split (s)	16.0	50.0	50.0	16.0	50.0	50.0	25.0	37.0	17.0	29.0	29.0
Total Split (%)	13.3%	41.7%	41.7%	13.3%	41.7%	41.7%	20.8%	30.8%	14.2%	24.2%	24.2%
Yellow Time (s)	3.3	4.0	4.0	3.3	4.0	4.0	3.6	4.4	3.6	4.4	4.4
All-Red Time (s)	2.0	1.3	1.3	2.0	1.3	1.3	1.0	1.1	1.0	1.1	1.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	4.6	5.5	4.6	5.5	5.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
Act Effct Green (s)	60.1	50.2	50.2	61.3	50.8	50.8	27.7	20.0	18.6	10.9	10.9
Actuated g/C Ratio	0.50	0.42	0.42	0.51	0.42	0.42	0.23	0.17	0.16	0.09	0.09
v/c Ratio	0.51	0.53	0.10	0.33	0.51	0.40	0.47	0.83	0.68	0.60	0.39
Control Delay	29.1	29.3	0.3	15.9	20.7	6.7	43.3	44.0	54.8	60.1	6.0
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	29.1	29.3	0.3	15.9	20.7	6.7	43.3	44.0	54.8	60.1	6.0
LOS	C	C	A	B	C	A	D	D	D	E	A
Approach Delay		27.2			16.5			43.8		48.1	
Approach LOS		C			B			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 31 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 30.9	Intersection LOS: C
Intersection Capacity Utilization 70.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Northsight Boulevard & Raintree Drive



Intersection	
Int Delay, s/veh	1.5

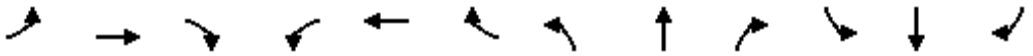
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	1230	1	5	1126	26	2	0	114	26	0	32
Future Vol, veh/h	40	1230	1	5	1126	26	2	0	114	26	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	105	175	-	135	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	1309	1	5	1198	28	2	0	121	28	0	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1226	0	0	1310	0	0	2004	2631	655	1949	2604	599
Stage 1	-	-	-	-	-	-	1395	1395	-	1208	1208	-
Stage 2	-	-	-	-	-	-	609	1236	-	741	1396	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*920	-	-	*843	-	-	*118	*103	*564	*118	*103	*615
Stage 1	-	-	-	-	-	-	*531	*466	-	*580	*508	-
Stage 2	-	-	-	-	-	-	*580	*508	-	*531	*466	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*920	-	-	*843	-	-	*107	*98	*564	*89	*98	*615
Mov Cap-2 Maneuver	-	-	-	-	-	-	*107	*98	-	*89	*98	-
Stage 1	-	-	-	-	-	-	*507	*444	-	*553	*505	-
Stage 2	-	-	-	-	-	-	*544	*505	-	*398	*444	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	13.6	34.3
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	107	564	* 920	-	-	* 843	-	-	89	615
HCM Lane V/C Ratio	0.02	0.215	0.046	-	-	0.006	-	-	0.311	0.055
HCM Control Delay (s)	39.3	13.1	9.1	-	-	9.3	-	-	62.7	11.2
HCM Lane LOS	E	B	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	0.1	0.8	0.1	-	-	0	-	-	1.2	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1351	21	35	1006	216	113	61	410	148	25	80
Future Volume (veh/h)	32	1351	21	35	1006	216	113	61	410	148	25	80
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	1453	23	38	1082	232	122	66	441	159	27	86
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	2151	959	157	2151	959	370	550	466	299	116	368
Arrive On Green	0.41	0.41	0.41	0.61	0.61	0.61	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	418	3554	1585	358	3554	1585	1280	1870	1585	892	393	1252
Grp Volume(v), veh/h	34	1453	23	38	1082	232	122	66	441	159	0	113
Grp Sat Flow(s),veh/h/ln	418	1777	1585	358	1777	1585	1280	1870	1585	892	0	1645
Q Serve(g_s), s	7.3	40.2	1.0	10.4	20.7	8.1	9.6	3.1	32.7	19.0	0.0	6.2
Cycle Q Clear(g_c), s	28.1	40.2	1.0	50.6	20.7	8.1	15.8	3.1	32.7	22.1	0.0	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	241	2151	959	157	2151	959	370	550	466	299	0	484
V/C Ratio(X)	0.14	0.68	0.02	0.24	0.50	0.24	0.33	0.12	0.95	0.53	0.00	0.23
Avail Cap(c_a), veh/h	241	2151	959	157	2151	959	405	602	510	324	0	529
HCM Platoon Ratio	0.67	0.67	0.67	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	0.70	0.70	0.70	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	26.0	14.4	35.7	13.4	11.0	38.1	31.0	41.4	39.1	0.0	32.1
Incr Delay (d2), s/veh	1.2	1.7	0.0	2.5	0.6	0.4	0.2	0.0	25.1	0.5	0.0	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	0.9	18.3	0.4	1.0	8.0	2.8	3.0	1.4	15.7	4.3	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	27.7	14.4	38.3	14.0	11.4	38.3	31.0	66.6	39.7	0.0	32.2
LnGrp LOS	C	C	B	D	B	B	D	C	E	D	A	C
Approach Vol, veh/h		1510			1352			629			272	
Approach Delay, s/veh		27.6			14.3			57.4			36.6	
Approach LOS		C			B			E			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		78.3		41.7		78.3		41.7				
Change Period (Y+Rc), s		* 5.7		6.4		* 5.7		6.4				
Max Green Setting (Gmax), s		* 69		38.6		* 69		38.6				
Max Q Clear Time (g_c+I1), s		42.2		24.1		52.6		34.7				
Green Ext Time (p_c), s		5.1		0.9		3.4		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

Notes

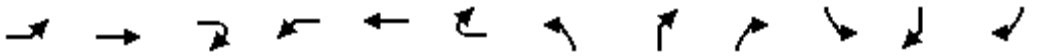
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	32	1351	21	35	1006	216	113	61	410	148	25
Future Volume (vph)	32	1351	21	35	1006	216	113	61	410	148	25
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		2			6			8			4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	6	6	6	8	8	8	4	4
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	33.7	33.7	33.7	33.7	33.7	33.7	47.4	47.4	47.4	47.4	47.4
Total Split (s)	75.0	75.0	75.0	75.0	75.0	75.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	62.5%	62.5%	62.5%	62.5%	62.5%	62.5%	37.5%	37.5%	37.5%	37.5%	37.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.7	1.7	1.7	1.7	1.7	1.7	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.7	5.7	6.4	6.4	6.4	6.4	6.4
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None
Act Effct Green (s)	72.9	72.9	72.9	72.9	72.9	72.9	35.0	35.0	35.0	35.0	35.0
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61	0.61	0.29	0.29	0.29	0.29	0.29
v/c Ratio	0.15	0.68	0.02	0.31	0.50	0.23	0.33	0.12	0.91	0.41	0.21
Control Delay	19.7	24.3	8.5	16.4	12.6	3.6	34.6	30.0	60.0	36.6	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	24.3	8.5	16.4	12.9	3.6	34.6	30.0	60.0	36.6	10.3
LOS	B	C	A	B	B	A	C	C	E	D	B
Approach Delay		23.9			11.4			51.9			25.7
Approach LOS		C			B			D			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 105 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: 87th Street & Raintree Drive



Movement	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR	NBR2	SBL	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	731	340	716	470	467	171	372	36	396	529	213	290
Future Volume (vph)	731	340	716	470	467	171	372	36	396	529	213	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.8	6.8	5.6	6.8		5.4	6.1		5.4	6.1	6.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.88		0.97	0.88	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.85		1.00	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3397		3433	2787		3433	2787	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3397		3433	2787		3433	2787	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	754	351	738	485	481	176	384	37	408	545	220	299
RTOR Reduction (vph)	0	0	283	0	94	0	0	372	0	0	0	264
Lane Group Flow (vph)	754	351	455	485	563	0	384	73	0	545	220	35
Turn Type	Prot	NA	Perm	Prot	NA		Prot	Prot		Prot	Prot	Prot
Protected Phases	5	2		1	6		3	8		7	4	4
Permitted Phases			2									
Actuated Green, G (s)	30.0	37.7	37.7	24.8	32.4		19.7	10.7		22.9	13.9	13.9
Effective Green, g (s)	30.0	37.7	37.7	24.8	32.4		19.7	10.7		22.9	13.9	13.9
Actuated g/C Ratio	0.25	0.31	0.31	0.21	0.27		0.16	0.09		0.19	0.12	0.12
Clearance Time (s)	5.7	6.8	6.8	5.6	6.8		5.4	6.1		5.4	6.1	6.1
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	858	1111	497	709	917		563	248		655	322	183
v/s Ratio Prot	c0.22	0.10		0.14	0.17		0.11	0.03		c0.16	c0.08	0.02
v/s Ratio Perm			c0.29									
v/c Ratio	0.88	0.32	0.92	0.68	0.61		0.68	0.30		0.83	0.68	0.19
Uniform Delay, d1	43.3	31.3	39.6	44.0	38.3		47.2	51.1		46.7	50.9	48.0
Progression Factor	1.08	0.95	1.03	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.5	0.5	19.1	2.2	3.1		2.7	0.2		8.5	4.7	0.2
Delay (s)	54.0	30.4	60.1	46.2	41.4		49.9	51.4		55.2	55.7	48.1
Level of Service	D	C	E	D	D		D	D		E	E	D
Approach Delay (s)		51.9			43.4							
Approach LOS		D			D							

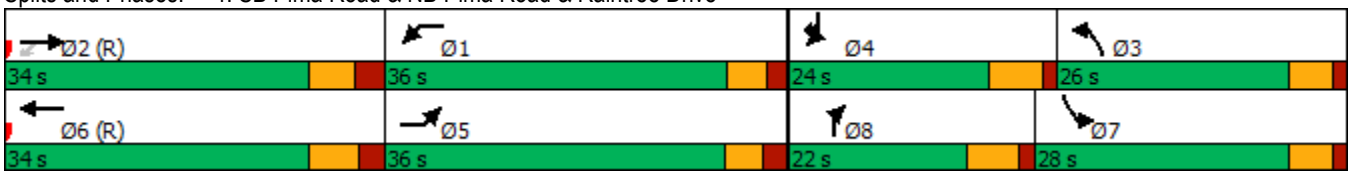
Intersection Summary			
HCM 2000 Control Delay	50.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR2	WBL	WBT	NBL	NBR	SBL	SBR	SBR2
Lane Configurations										
Traffic Volume (vph)	731	340	716	470	467	372	36	529	213	290
Future Volume (vph)	731	340	716	470	467	372	36	529	213	290
Turn Type	Prot	NA	Perm	Prot	NA	Prot	Prot	Prot	Prot	Prot
Protected Phases	5	2		1	6	3	8	7	4	4
Permitted Phases			2							
Detector Phase	5	2	2	1	6	3	8	7	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.7	24.8	24.8	10.6	27.8	10.4	40.1	10.4	40.1	40.1
Total Split (s)	36.0	34.0	34.0	36.0	34.0	26.0	22.0	28.0	24.0	24.0
Total Split (%)	30.0%	28.3%	28.3%	30.0%	28.3%	21.7%	18.3%	23.3%	20.0%	20.0%
Yellow Time (s)	3.3	4.0	4.0	3.6	4.4	4.0	4.7	4.0	4.7	4.7
All-Red Time (s)	2.4	2.8	2.8	2.0	2.4	1.4	1.4	1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	6.8	6.8	5.6	6.8	5.4	6.1	5.4	6.1	6.1
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	None	None	None	None	None
Act Effct Green (s)	30.0	37.8	37.8	24.7	32.5	19.7	10.7	22.8	13.9	13.9
Actuated g/C Ratio	0.25	0.32	0.32	0.21	0.27	0.16	0.09	0.19	0.12	0.12
v/c Ratio	0.88	0.31	0.94	0.69	0.65	0.68	0.72	0.83	0.69	0.67
Control Delay	56.2	32.7	36.8	48.7	35.1	53.9	14.4	58.6	61.8	13.2
Queue Delay	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	32.7	41.6	48.7	35.1	53.9	14.4	58.6	61.8	13.2
LOS	E	C	D	D	D	D	B	E	E	B
Approach Delay		45.9			40.9					
Approach LOS		D			D					

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 19 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 42.6	Intersection LOS: D
Intersection Capacity Utilization 88.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: SB Pima Road & NB Pima Road & Raintree Drive



Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	109	0	156	3	8	72	127	490	1	2	278	57
Future Vol, veh/h	109	0	156	3	8	72	127	490	1	2	278	57
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	-	-	0	95	-	-	155	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	133	0	190	4	10	88	155	598	1	2	339	70

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	992	1287	205	1083	1322	300	409	0	0	599	0	0
Stage 1	378	378	-	909	909	-	-	-	-	-	-	-
Stage 2	614	909	-	174	413	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	265	192	*971	*223	182	696	1325	-	-	974	-	-
Stage 1	829	745	-	*296	352	-	-	-	-	-	-	-
Stage 2	446	352	-	*916	717	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	201	169	*971	*163	160	696	1325	-	-	974	-	-
Mov Cap-2 Maneuver	201	169	-	*163	160	-	-	-	-	-	-	-
Stage 1	732	744	-	*261	311	-	-	-	-	-	-	-
Stage 2	333	311	-	*735	715	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.1	13.4	1.7	0.1
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1325	-	-	201	971	161	696	974	-	-
HCM Lane V/C Ratio	0.117	-	-	0.661	0.196	0.083	0.126	0.003	-	-
HCM Control Delay (s)	8.1	-	-	52.2	9.6	29.4	10.9	8.7	-	-
HCM Lane LOS	A	-	-	F	A	D	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	4	0.7	0.3	0.4	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Appendix G – Trip Generation

19-ZN-2019
3/10/2020

Raintree Multi-family

Completed: TG 11/4/2019
Checked: GT 12/3/2019

Trip Generation Calculations

221 Multifamily Housing (Mid-Rise) (Three to Ten Levels)

Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour			
				Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	5.44	50%	50%	0.36	26%	74%	0.44	61%	39%	1,034	517	517	68	18	50	84	51	33	Average
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	1.27	50%	50%	0.06	26%	74%	0.15	61%	39%	241	121	120	11	3	8	29	18	11	Minimum
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	12.50	50%	50%	1.61	26%	74%	1.11	61%	39%	2,375	1188	1187	306	80	226	211	129	82	Maximum
Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour			
				Equation	% In	% Out	Equation	% In	% Out	Equation	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	T=5.45(X)-1.75	50%	50%	Ln(T)=0.98Ln(X)-0.98	26%	74%	Ln(T)=0.96Ln(X)-0.63	61%	39%	1,034	517	517	64	17	47	82	50	32	Equation

Multifamily Housing (Mid-Rise)	Standard Deviation	2.03	0.19	0.19	
	Number of Studies	27	53	60	
	Average Size	205	207	208	
	R^2	0.77	0.67	0.72	

710 General Office Building

Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour			
				Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	
General Office Building	710	178.564	1000 SF GFA	9.74	50%	50%	1.16	86%	14%	1.15	16%	84%	1,739	869	870	207	178	29	205	33	172	Average
General Office Building	710	178.564	1000 SF GFA	2.71	50%	50%	0.37	86%	14%	0.47	16%	84%	484	242	242	66	57	9	84	13	71	Minimum
General Office Building	710	178.564	1000 SF GFA	27.56	50%	50%	4.23	86%	14%	3.23	16%	84%	4,921	2461	2460	755	649	106	577	92	485	Maximum
Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour			
				Equation	% In	% Out	Equation	% In	% Out	Equation	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	
General Office Building	710	178.564	1000 SF GFA	Ln(T)=0.97Ln(X)+2.50	50%	50%	T=0.94(X)+26.49	86%	14%	Ln(T)=0.95Ln(X)+0.36	16%	84%	1,862	931	931	194	167	27	197	31	166	Equation

General Office Building	Standard Deviation	5.15	0.47	0.42
	Number of Studies	66	35	32
	Average Size	171	117	114
	R^2	0.83	0.85	0.88

Appendix H – MAG Socioeconomic Projections

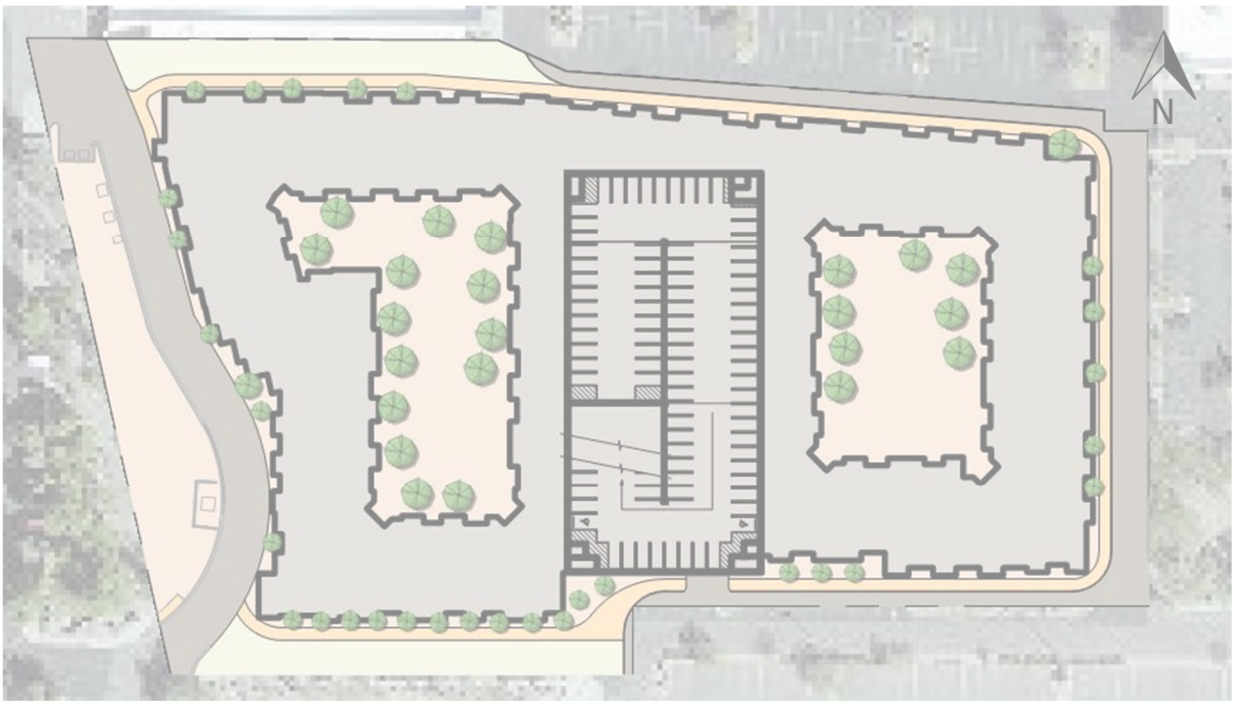
H

Regional Analysis Zone Projections (#247)							
	2018	2020	2030	2040	2050	2055	Growth Rate
Total Population	13,549	13,858	15,420	16,342	16,871	17,019	**0.62%**
Household Population	13,519	13,827	13,387	16,306	16,828	16,973	0.62%
Site Base Jobs	40,806	43,326	48,655	50,615	51,519	51,759	**0.64%**
Non-Site Based Jobs	2,332	2,590	3,048	3,099	3,147	3,272	0.92%
Source: MAG Socioeconomic Projections 2019 (https://geo.azmag.gov/maps/projections/)							

Appendix I – Raintree Traffic Impact & Mitigation Analysis Dated May 16, 2019

RAINTREE

TRAFFIC IMPACT & MITIGATION ANALYSIS



Prepared for:

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102 E. Buchanan Street
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Prepared by:

J2 Design
4649 E. Cotton Gin Loop, Suite B2
Phoenix, AZ 84040

Project Number: 19.1199
May 16, 2019

19-ZN-2019
3/10/2020

1. INTRODUCTION AND EXECUTIVE SUMMARY

1.1. PURPOSE OF REPORT AND STUDY OBJECTIVES

J2 Engineering and Environmental Design was retained by CCBG Architects to complete a Traffic Impact and Mitigation Analysis for the proposed Raintree residential development. The development is located north of Raintree Drive and west of 87th Street, in Scottsdale, Arizona. The objective of this Traffic Impact Analysis is to analyze the traffic related impacts of the proposed development to the adjacent roadway network. See **Figure 1** for the vicinity map. The proposed development will include 330 residential units.

1.2. EXECUTIVE SUMMARY

The proposed Raintree residential development is generally located on the northwest corner of Raintree Drive and 87th Street, north of the existing Kohl's department store, in Scottsdale, Arizona. The proposed development will consist of 330 multifamily residential dwelling units. Of the 330 units, 211 are one (1) bedroom units, 105 are two (2) bedroom units, and 14 are three (3) bedroom units.

This Traffic Impact Analysis includes:

- Level of service analysis of existing conditions for the weekday AM and PM peak hours
- Three (3) year Crash Analysis
- Trip Generation for the proposed development
- Trip Generation comparison to the existing land use
- Trip Generation comparison to the existing zoning
- Level of service analysis for the opening year (2021) weekday AM and PM peak hours
    - 2021 No Build
    - 2021 Build

The following are the three (8) intersections included in this study:

- Northsight Boulevard and Butherus Drive (1)
- Raintree Drive and Northsight Boulevard (2)
- Raintree Drive and Driveway A (3)
- Raintree Drive and Driveway B (4)
- Raintree Drive and 87th Street (5)
- Raintree Drive and Northbound/Southbound Pima Frontage Road (6)
- South Pima Frontage Road and Driveway C (7)
- South Pima Frontage Road and Driveway D (8)

Existing Capacity Analysis

The AM and PM peak hour existing conditions capacity analysis were completed for the eight (8) existing study intersections. The following intersection currently operate with movements at a Level of Service E or F:

Raintree Drive and Northsight Boulevard (2) – Signalized

- EB through AM and PM peak hours operate at LOS E
- WB through PM peak hour operates at LOS E
- WB right PM peak hour operates at LOS E
- NB through AM peak hour operates at LOS E
- NB right AM and PM peak hours operate at LOS E
- SB left AM and PM peak hours operate at LOS E and LOS F, respectively
- SB through AM and PM peak hours operate at LOS E
- SB right AM and PM peak hours operate at LOS E

Raintree Drive and Driveway A (3) – Unsignalized

- SB left PM peak hour operates at LOS E

Raintree Drive and 87th Street (5) – Signalized

- NB left AM peak hour operates at LOS E
- NB right PM peak hour operates at LOS E

Raintree Drive and Northbound/Southbound Pima Frontage Road (6) – Signalized

- WB through AM peak hour operates at LOS E
- WB right AM and PM peak hours operate at LOS F and LOS E, respectively
- NB left AM peak hour operates at LOS E
- SB through PM peak hour operates at LOS E
- SB right AM peak hour operates at LOS F

Trip Generation

The proposed development generally located on the northwest corner of Raintree Drive and 87th Street is anticipated to generate 1,795 weekday trips, with 119 trips occurring during the AM peak hour and 145 trip occurring during the PM peak hour.

Trip Generation Comparison - Existing Land Use vs. Proposed

A comparison between the trips generated by the existing retail land uses versus the proposed Raintree residential development was calculated.

Trip Generation Comparison (Existing Zoning vs. Proposed)

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Shopping Center	820	11	1000 SF GLA	1,318	157	97	60	104	50	54
Supermarket	850	31	1000 SF GFA	3358	120	72	48	291	148	143
Furniture Store	890	20	1000 SF GFA	126	5	4	1	10	5	5
Total Existing Land Use				4,802	282	173	109	405	203	202
Multifamily Housing (Mid-Rise)	221	330	Dwelling Units	1,795	119	31	88	145	88	57
Total Proposed				1,795	119	31	88	145	88	57
Difference				-3,007	-163	-142	-21	-260	-115	-145

The proposed Raintree residential development is anticipated to generate 3,007 less weekday daily trip, 166 less trips during the AM peak hour, and 260 less trips during the PM peak hour.

Trip Generation Comparison - Existing Zoning vs. Proposed

A comparison between the trips generated by the build out under the existing zoning with a 193,379 square foot shopping center versus the proposed Raintree residential development was calculated.

Trip Generation Comparison (Existing Zoning vs. Proposed)

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Shopping Center	820	193	1000 SF GLA	9,414	248	154	94	885	425	460
Total Existing Land Use				9,414	248	154	94	885	425	460
Multifamily Housing (Mid-Rise)	221	330	Dwelling Units	1,795	119	31	88	145	88	57
Total Proposed				1,795	119	31	88	145	88	57
Difference				-7,619	-129	-123	-6	-740	-337	-403

The proposed Raintree residential development is anticipated to generate 7,619 less weekday daily trip, 129 less trips during the AM peak hour, and 740 less trips during the PM peak hour.

Future Conditions

Year 2021 (opening year) analyses were completed without the build out, as well as with the build out of the proposed development. An annual growth rate of 1.0% was applied to the existing traffic volumes to create the future background traffic volumes for year 2021.

Year 2021

Capacity analyses were completed for both the AM and PM peak hours for year 2021, without the build out of the proposed Raintree residential development, as well as with the build out. All movements operate at a LOS D or better, or are maintained at the no build level of service, with the exception of the following:

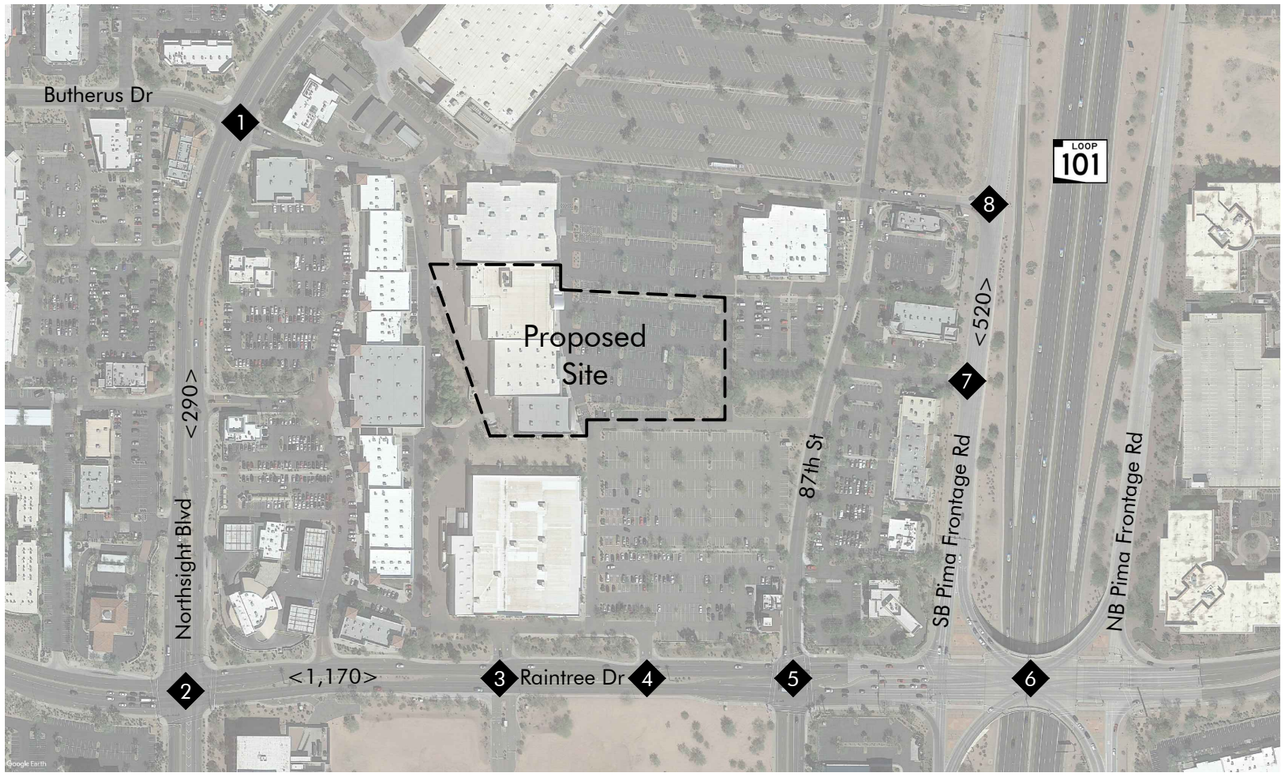
Northsight Boulevard and Butherus Drive (1) – Unsignalized

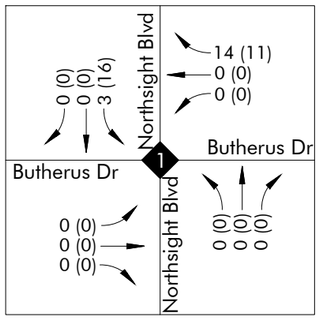
- WB right PM peak hour operates at LOS E

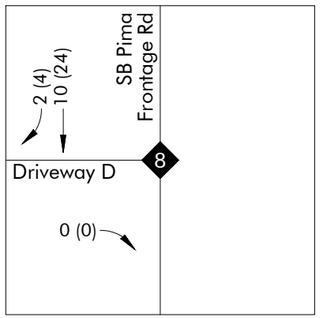
Recommendations

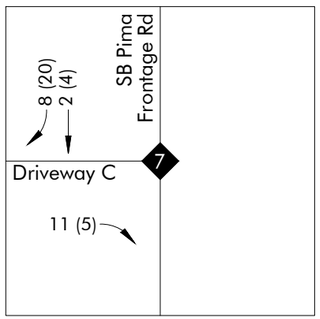
The proposed Raintree residential development will have significantly less traffic related impacts to the surrounding area than the existing retail development or the build out under the existing zoning.

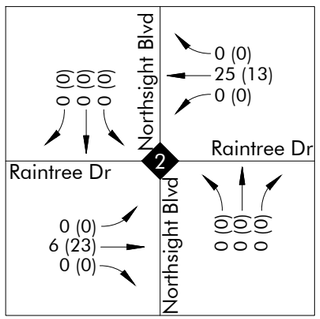
Therefore, the recommendations with the build out of the proposed Raintree residential development include constructing access improvements to connect the development to the on-site roadway network. Additionally, as with any new site development, it is recommended for the City of Scottsdale to monitor traffic patterns in the area and if necessary adjust nearby signal timing.

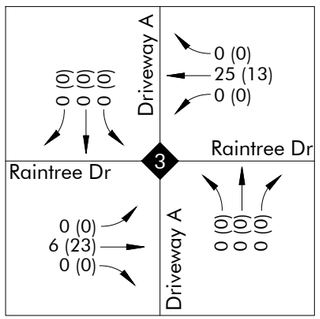


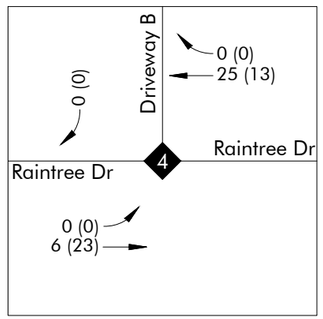


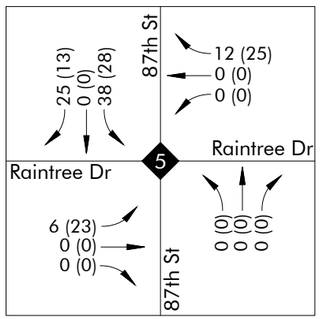


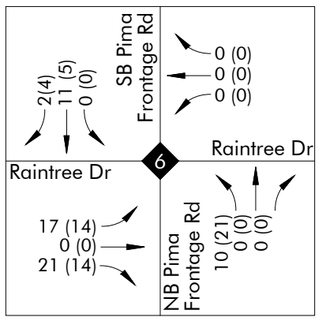












Legend

AM (PM)	Site Peak Hour Traffic Volumes
X	Intersection
<ADT>	Average Daily Traffic Volumes

FIGURE 8 | SITE TRAFFIC VOLUMES

Appendix J – Year 2020 Build Capacity Analysis

J

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	564	61	235	1234	16	14	0	59	32	0	10
Future Vol, veh/h	20	564	61	235	1234	16	14	0	59	32	0	10
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	100	-	105	175	-	135	-	-	0	-	-	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	22	613	66	255	1341	17	15	0	64	35	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1358	0	0	679	0	0	1838	2525	307	2202	2574	671
Stage 1	-	-	-	-	-	-	657	657	-	1851	1851	-
Stage 2	-	-	-	-	-	-	1181	1868	-	351	723	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*843	-	-	909	-	-	*151	27	689	46	23	*564
Stage 1	-	-	-	-	-	-	*420	460	-	181	207	-
Stage 2	-	-	-	-	-	-	*531	200	-	639	429	-
Platoon blocked, %	1	-	-		-	-	1	1		1	1	1
Mov Cap-1 Maneuver	*843	-	-	909	-	-	*114	19	689	~ 32	16	*564
Mov Cap-2 Maneuver	-	-	-	-	-	-	*114	19	-	~ 32	16	-
Stage 1	-	-	-	-	-	-	*409	448	-	176	149	-
Stage 2	-	-	-	-	-	-	*375	144	-	564	418	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.7	16.7	286.5
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	114	689	* 843	-	-	909	-	-	32	564
HCM Lane V/C Ratio	0.133	0.093	0.026	-	-	0.281	-	-	1.087	0.019
HCM Control Delay (s)	41.4	10.8	9.4	-	-	10.5	-	-	$ 372.5	11.5
HCM Lane LOS	E	B	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.4	0.3	0.1	-	-	1.2	-	-	3.8	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	20	131	0	2	19	118	192	19	110	246	190
Future Vol, veh/h	63	20	131	0	2	19	118	192	19	110	246	190
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	-	-	0	95	-	-	155	-	-
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	68	22	142	0	2	21	128	209	21	120	267	207

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	973	1097	237	861	1190	115	474	0	0	230	0	0
Stage 1	611	611	-	476	476	-	-	-	-	-	-	-
Stage 2	362	486	-	385	714	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	207	212	764	249	186	916	1084	-	-	1335	-	-
Stage 1	448	482	-	539	555	-	-	-	-	-	-	-
Stage 2	629	549	-	610	433	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	170	170	764	156	149	916	1084	-	-	1335	-	-
Mov Cap-2 Maneuver	170	170	-	156	149	-	-	-	-	-	-	-
Stage 1	395	439	-	475	490	-	-	-	-	-	-	-
Stage 2	540	484	-	429	394	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.2	11	3.1	1.6
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1084	-	-	170	764	149	916	1335	-	-
HCM Lane V/C Ratio	0.118	-	-	0.531	0.186	0.015	0.023	0.09	-	-
HCM Control Delay (s)	8.8	-	-	47.9	10.8	29.5	9	8	-	-
HCM Lane LOS	A	-	-	E	B	D	A	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.7	0.7	0	0.1	0.3	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	0	120	517	89
Future Vol, veh/h	0	2	0	120	517	89
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	0	2	0	130	562	97

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	281	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	716	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	716	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	716	-	-
HCM Lane V/C Ratio	-	0.003	-	-
HCM Control Delay (s)	-	10	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	17

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	1282	30	40	1162	27	34	0	244	27	0	33
Future Vol, veh/h	41	1282	30	40	1162	27	34	0	244	27	0	33
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	100	-	105	175	-	135	-	-	0	-	-	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	45	1393	33	43	1263	29	37	0	265	29	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1292	0	0	1426	0	0	2201	2861	697	2136	2865	632
Stage 1	-	-	-	-	-	-	1483	1483	-	1349	1349	-
Stage 2	-	-	-	-	-	-	718	1378	-	787	1516	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*920	-	-	473	-	-	*41	11	383	49	11	*615
Stage 1	-	-	-	-	-	-	*131	187	-	513	464	-
Stage 2	-	-	-	-	-	-	*580	441	-	351	180	-
Platoon blocked, %	1	-	-		-	-	1	1		1	1	1
Mov Cap-1 Maneuver	*920	-	-	473	-	-	*~ 35	9	383	~ 14	9	*615
Mov Cap-2 Maneuver	-	-	-	-	-	-	*~ 35	9	-	~ 14	9	-
Stage 1	-	-	-	-	-	-	*125	178	-	488	422	-
Stage 2	-	-	-	-	-	-	*496	401	-	103	171	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	70.9	$ 483
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	35	383	* 920	-	-	473	-	-	14	615
HCM Lane V/C Ratio	1.056	0.692	0.048	-	-	0.092	-	-	2.096	0.058
HCM Control Delay (s)	$ 341.9	33.1	9.1	-	-	13.4	-	-	$ 1059.6	11.2
HCM Lane LOS	F	D	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	3.8	5	0.2	-	-	0.3	-	-	4.4	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	0	160	4	9	109	130	500	2	8	284	59
Future Vol, veh/h	112	0	160	4	9	109	130	500	2	8	284	59
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	-	-	0	95	-	-	155	-	-
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	122	0	174	4	10	118	141	543	2	9	309	64

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	918	1186	187	999	1217	273	373	0	0	545	0	0
Stage 1	359	359	-	826	826	-	-	-	-	-	-	-
Stage 2	559	827	-	173	391	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	227	187	823	198	180	725	1182	-	-	1020	-	-
Stage 1	632	626	-	332	385	-	-	-	-	-	-	-
Stage 2	481	384	-	812	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	163	163	823	141	157	725	1182	-	-	1020	-	-
Mov Cap-2 Maneuver	163	163	-	141	157	-	-	-	-	-	-	-
Stage 1	557	620	-	292	339	-	-	-	-	-	-	-
Stage 2	344	338	-	635	601	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36.4	13.1	1.7	0.2
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1182	-	-	163	823	152	725	1020	-	-
HCM Lane V/C Ratio	0.12	-	-	0.747	0.211	0.093	0.163	0.009	-	-
HCM Control Delay (s)	8.5	-	-	73.4	10.5	31.1	10.9	8.6	-	-
HCM Lane LOS	A	-	-	F	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	4.7	0.8	0.3	0.6	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	0	608	83	17
Future Vol, veh/h	0	12	0	608	83	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	0	13	0	661	90	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	45	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	1015	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	1015	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	1015	-	-
HCM Lane V/C Ratio	-	0.013	-	-
HCM Control Delay (s)	-	8.6	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

To:	Stephen Krager High Street Residential	**Date:**	December 4, 2019
From:	Jamie Blakeman, PE, PTOE		
Job Number:	19.5061.001		
RE:	Raintree Multi-Family Traffic Statement		

Registered Professional Engineer (Civil)
CERTIFICATE NO.
40961
JAMIE ANN K. BLAKEMAN
Date Signed: 12/04/19
ARIZONA, U.S.A.

Memorandum

INTRODUCTION

Lōkahi, LLC (Lōkahi) has prepared a Traffic Statement for the proposed Raintree Multi-family development, located on the southwest corner of Raintree Drive and 87th Street in Scottsdale, Arizona. See **Figure 1** for the vicinity map.

The proposed site will be comprised of a total of 190 residential units, of which, there will be 150 one-bedroom, 36 two-bedroom, and four three-bedroom units. Additionally, approximately 178,564 square feet (SF) of office space will be located on the east half of the proposed site. See **Attachment A** and **Figure 2** for the site plan.

Figure 1 - Vicinity Map

The objective of this Traffic Statement is to analyze the proposed development's traffic related impacts to the adjacent roadway network as well as evaluate shared use driveway access.

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480.536.7150
www.lokahigroup.com

collaboration unity harmony cooperation

EXISTING CONDITIONS

The approximate 8.24-acre site is currently undeveloped land. The site is currently zoned Industrial Park (I-1). This zoning accommodates light manufacturing, light industrial, office, and supportive uses for major employment opportunities. See **Attachment B** for Maricopa County Assessor's parcel information.

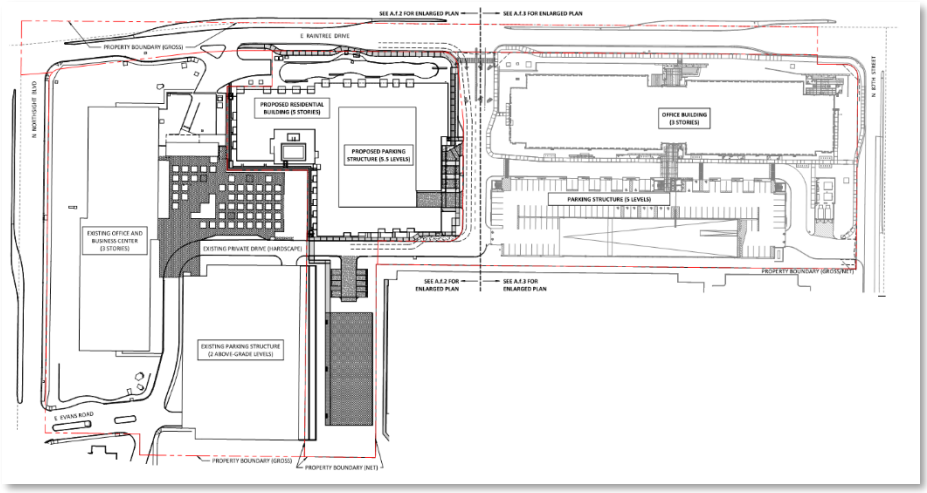


Figure 2 – Site Plan

Raintree Drive, bordering the proposed development to the north, runs east-west and provides two (2) through lanes for each direction of travel, with a raised landscaped median. There is a posted speed limit of 35 miles per hour (mph). The City of Scottsdale classifies Raintree Drive as a minor arterial, within the study area, according to the *City of Scottsdale Master Transportation Plan,* dated July 5, 2016. The City of Scottsdale's *2018 Average Daily Segment Traffic (ADT) Volumes* map reports and ADT of 30,900 vehicles per day east of the Arizona State Route 101.

Northsight Boulevard generally runs north-south and provides two (2) through lanes for each direction of travel, with a raised landscaped median. There is a posted speed limit of 40 miles per hour (mph). The City of Scottsdale classifies Northsight Boulevard as a major collector, within the study area, according to the *City of Scottsdale Master Transportation Plan,* dated July 5, 2016. The City of Scottsdale's *2018 Average Daily Segment Traffic (ADT) Volumes* map reports and ADT of 11,900 vehicles per day, north of Raintree Drive.

87th Street, bordering the proposed development to the east, runs north-south and provides two (2) through lane in each direction of travel, south of Raintree Drive. The City of Scottsdale classifies 87th Street as a major collector, within the study area, according to the *City of Scottsdale Master Transportation Plan,* dated July 5, 2016. There is a posted speed limit of 35 miles per hour (mph).

PROPOSED DEVELOPMENT

The propose development will be comprised of residential and office land uses. A total of 190 residential units will be provided on the west half of the site. Of the 190 total units, there will be

150 one-bedroom, 36 two-bedroom, and four three-bedroom units. In addition, approximately 178,564 square feet (SF) of office space will be located on the east half of the proposed site.

The site plan indicates that there will be three (3) access points to the development, of which two (2) are existing driveways. The first existing driveway that will provide access to the site is located along Raintree Drive, approximately 700 feet east of Northsight Boulevard. The second existing driveway is located along Northsight Boulevard, approximately 600 feet south of Raintree Drive. These driveways are to remain full access driveways, allowing all movements in to and out of each driveway.

Finally, the third access point is a proposed driveway along 87th Street, approximately 350 feet south of Raintree Drive. This proposed driveway will allow for right-in and right-out movements.

TRIP GENERATION

The trip generation for the existing zoning and proposed development were calculated utilizing the Institute of Transportation Engineers (ITE) publication entitled *Trip Generation, 10th Edition*. The ITE trip generation rates and fitted curve equations are based on studies that measure trip generation characteristics for various types of land uses. The rates are expressed in terms of trips per unit of land use type. This publication is the standard for the transportation engineering profession.

Existing Zoning

The existing site is currently zoned for Industrial Park (I-1) land uses. Permitted uses within the I-1 zoning allows for manufacturing, light industrial, office, and supportive uses for major employment opportunities land uses. With a total lot area of 359,050 SF (8.24 acres), and a maximum floor-to-area ratio (FAR) of 0.80, a 287,240 SF general office space was assumed for the buildout on this site under the existing I-1 zoning.

Utilizing ITE Land Use 710 General Office, the trip generation for the existing land uses was calculated as shown in **Table 1** below. See **Attachment C** for detailed trip generation calculations.

Table 1 – Trip Generation (Existing Zoning)

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
General Office Building	710	287.24	1000 SF GFA	2,798	333	286	47	330	53	277

Proposed Development

The trip generation for the proposed storage development was calculated utilizing ITE Land Use 221 – Mini-Warehouse and Land Use 710 – General Office Building. Trip generation calculations are shown in **Table 2**. See **Attachment C** for detailed trip generation calculations.

Table 2 – Trip Generation (Proposed Development)

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	1,034	68	18	50	84	51	33
General Office Building	710	178.564	1000 SF GFA	1,739	207	178	29	205	33	172
			Total	**2,773**	**275**	**196**	**79**	**289**	**84**	**205**

The proposed development is anticipated to generate 2,773 weekday daily trips with 275 and 289 vehicles during the AM and PM peak hours, respectively.

Trip Generation Comparison

A comparison between trips generated under the build out under the existing zoning versus the proposed Raintree Multi-family development is shown in **Table 3** below.

Table 3 – Trip Generation Comparison

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
General Office Building	710	287.24	1000 SF GFA	2,798	333	286	47	330	53	277
			Total	**2,798**	**333**	**286**	**47**	**330**	**53**	**277**
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	1,034	68	18	50	84	51	33
General Office Building	710	178.564	1000 SF GFA	1,739	207	178	29	205	33	172
			Total	**2,773**	**275**	**196**	**79**	**289**	**84**	**205**
			Difference	**-25**	**-58**	-90	32	**-41**	31	-72

The proposed Raintree Multi-family development is expected to generate 25 fewer weekday daily trips, 58 fewer AM peak hour trips, and 41 fewer PM peak hour trips compared to the build out of a possible office use allowed under the existing zoning.

COLLISION HISTORY

The City of Scottsdale's *2018 Traffic Volume and Collision Rate Data* report provides collision rate and traffic volume information on major roadway segments and at major intersections within the City. Segment collisions are collisions that occur on a major street more than 100 feet from the segment's termini intersections, including those that occur at minor intersections within the

segment. Intersection collisions are collisions that occur at or within 100 feet of the intersection.

The collision rates and city wide rankings for the study intersections and study roadway segments are shown in **Table 4** and **Table 5** respectively.

Table 4 – Collision Rates - Study Roadway Intersections

Intersection	Collision Rate	Rank
Raintree Drive and Northsight Boulevard	1.21	14
101 Freeway and Raintree Drive	0.82	49
2018 City of Scottsdale Average Intersection Collision Rate	0.58	

Table 5 – Collision Rates - Study Roadway Segments

Segment	From	To	Collision Rate	Rank
Northsight Boulevard	Raintree Drive	Hayden Road	5.42	10
Raintree Drive	Northsight Boulevard	101 Freeway	3.50	31
Raintree Drive	Hayden Road	Northsight Boulevard	2.69	53
2018 City of Scottsdale Average Segment Collision Rate			1.53	

SUMMARY

The proposed site will be comprised of a total of 190 residential units, of which, there will be 150 one-bedroom, 36 two-bedroom, and four three-bedroom units. Additionally, approximately 178,564 square feet (SF) of office space will be located on the east half of the proposed site.

Trip Generation

At full build out, the proposed Raintree Multi-family development is anticipated to generate 2,773 weekday daily trips with 275 and 289 vehicles during the AM and PM peak hours, respectively.

Trip Generation Comparison

A comparison between the trips generated under the build out of the existing zoning with a 287,240 square foot general office building versus the proposed Raintree Multi-family development was calculated.

Trip Generation Comparison (Existing Zoning vs. Proposed Development)

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
General Office Building	710	287.24	1000 SF GFA	2,798	333	286	47	330	53	277
Total				**2,798**	**333**	**286**	**47**	**330**	**53**	**277**
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	1,034	68	18	50	84	51	33
General Office Building	710	178.564	1000 SF GFA	1,739	207	178	29	205	33	172
Total				**2,773**	**275**	**196**	**79**	**289**	**84**	**205**
Difference				**-25**	**-58**	-90	32	**-41**	31	-72

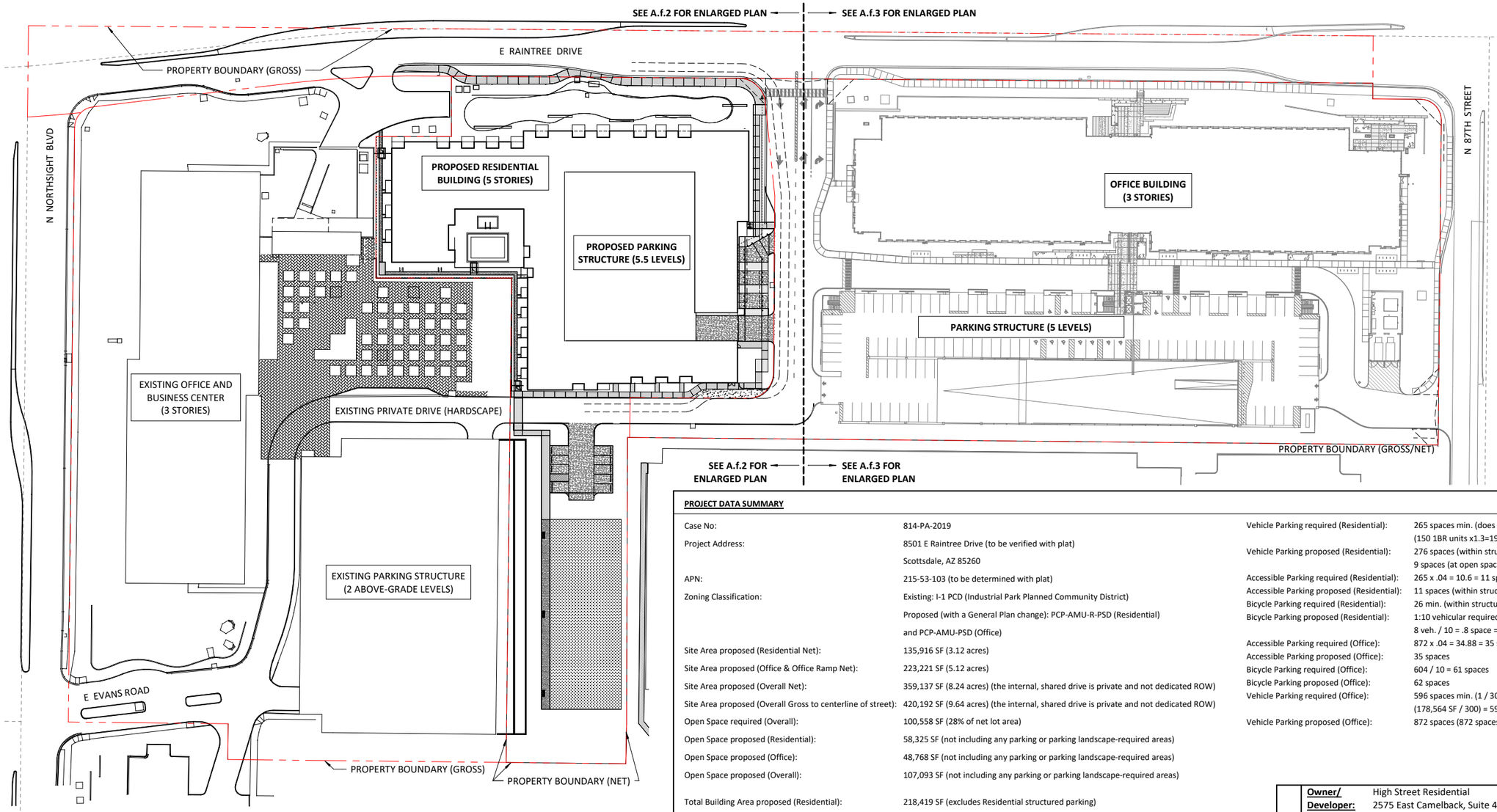
The proposed Raintree Multi-family development is expected to generate 25 (1%) fewer weekday daily trips, 58 (17.4%) fewer AM peak hour trips, and 41 (12.4%) fewer PM peak hour trips compared to the build out of a possible office use allowed under the existing zoning.

According to the City of Scottsdale's *2018 Average Daily Segment Traffic (ADT) Volumes* map reports and ADT of 30,900 vehicles per day east of the Arizona State Route 101. The additional 2,773 weekday daily trips represent an approximate 8.9% increase in daily traffic along Raintree Drive.

In conclusion, the additional traffic generated by the proposed Raintree Multi-family development is anticipated to result in minimal traffic impacts to the existing roadway network and the surrounding area.

ATTACHMENT A – PROPOSED SITE PLAN

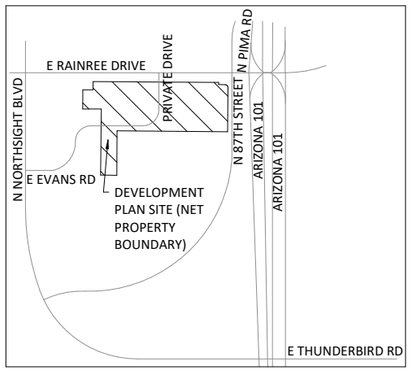
A



1 A.f.1 **OVERALL SITE PLAN**
1" = 50'-0"

0 25 50 100 200

NOTE: SITE AREA, OPEN SPACE, GFAR AND SETBACKS SUBJECT TO CHANGE DUE TO PENDING REVIEW/APPROVAL OF THE PROJECT'S SUBDIVISION PLAT THROUGH CITY OF SCOTTSDALE.



VICINITY MAP (NOT TO SCALE)

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PROJECT DATA SUMMARY

Case No:	814-PA-2019
Project Address:	8501 E Raintree Drive (to be verified with plat) Scottsdale, AZ 85260
APN:	215-53-103 (to be determined with plat)
Zoning Classification:	Existing: I-1 PCD (Industrial Park Planned Community District) Proposed (with a General Plan change): PCP-AMU-R-PSD (Residential) and PCP-AMU-PSD (Office)
Site Area proposed (Residential Net):	135,916 SF (3.12 acres)
Site Area proposed (Office & Office Ramp Net):	223,221 SF (5.12 acres)
Site Area proposed (Overall Net):	359,137 SF (8.24 acres) (the internal, shared drive is private and not dedicated ROW)
Site Area proposed (Overall Gross to centerline of street):	420,192 SF (9.64 acres) (the internal, shared drive is private and not dedicated ROW)
Open Space required (Overall):	100,558 SF (28% of net lot area)
Open Space proposed (Residential):	58,325 SF (not including any parking or parking landscape-required areas)
Open Space proposed (Office):	48,768 SF (not including any parking or parking landscape-required areas)
Open Space proposed (Overall):	107,093 SF (not including any parking or parking landscape-required areas)
Total Building Area proposed (Residential):	218,419 SF (excludes Residential structured parking)
Total Building Area proposed (Office):	178,564 SF (excludes parking structure)
GFAR allowed (Overall Net site area):	0.8 (for the Development Plan); option for buy-up w/ max. 2.0 under bonus provisions
GFAR proposed (Overall Net site area):	1.11 (excludes Residential + Office structured parking)
Total Units proposed:	190 units 1 Bedroom: 150 units (79%) 2 Bedroom: 36 units (19%) 3 Bedroom: 4 units (2%)
Ground Level allowed (Overall):	Dwelling use limited to a maximum of 50% of the ground floor bldg area of the Development Plan Office use limited to a maximum of 50% of the ground floor bldg area of the Development Plan
Ground Level proposed:	Overall Development Plan Ground Level (without parking ramps): 101,853 s.f. Residential: 30,265 s.f. (30%) Support uses (lobby, fitness, amenity, restrooms, storage): 23,148 s.f. (22%) Office: 48,440 s.f. (48%)
Stepbacks required:	1:1 beginning 38 ft above setback line / only relevant along Raintree Drive and 87th Street
Stepbacks proposed:	no encroachments
Building Height allowed (Overall Site):	62' maximum (including all rooftop appurtenances); 104' max under bonus provisions
Building Height proposed (Residential):	5.5 floors (64'-2" to top of overrun roof parapet) plus rooftop appurtenances = maximum 69'-0")
Building Height proposed (Office):	3 floors (50'-8" to top of roof parapet) plus rooftop appurtenances = 60'-2" total)

Vehicle Parking required (Residential):	265 spaces min. (does not include accessible) (150 1BR units x1.3=195)+(36 2BR+ units x1.7=62)+(4 3BR units x1.9=8) =265
Vehicle Parking proposed (Residential):	276 spaces (within structure; includes accessible spaces) 9 spaces (at open space; includes accessible spaces)
Accessible Parking required (Residential):	265 x .04 = 10.6 = 11 spcs (w/in structure); 8 x .04 = .32 = 1 spc (open spc)
Accessible Parking proposed (Residential):	11 spaces (within structure) + 1 space (at open space)
Bicycle Parking required (Residential):	26 min. (within structure); x min. (at open space)
Bicycle Parking proposed (Residential):	1:10 vehicular required = 265 veh. / 10 = 26.5 = 27 spaces (w/in structure) 8 veh. / 10 = .8 space = 1 = 2 as a min. req'd (at open spc)
Accessible Parking required (Office):	872 x .04 = 34.88 = 35 spaces
Accessible Parking proposed (Office):	35 spaces
Bicycle Parking required (Office):	604 / 10 = 61 spaces
Bicycle Parking proposed (Office):	62 spaces
Vehicle Parking required (Office):	596 spaces min. (1 / 300 SF min.) (178,564 SF / 300) = 596 spaces
Vehicle Parking proposed (Office):	872 spaces (872 spaces provided)

PROJECT TEAM

Owner/ Developer:	High Street Residential 2575 East Camelback, Suite 400 Phoenix, AZ 85016 Ph: 602-222-4000 Fx: 602-285-3141	
Legal:	Berry Riddell LLC 6750 East Camelback, Suite 100 Scottsdale, AZ 85251 Ph: 480-385-2727 Fx: 480-385-2757	
Architect:	(RESIDENTIAL) Elness Swenson Graham Architects, Inc. 500 Washington Ave. South, Suite 1080 Minneapolis, MN 55415 Ph: 612-339-5508 Fx: 612-339-5382	(OFFICE, OFFICE RAMP) RSP Architects, Ltd. 502 S College Ave Ste 203 Tempe, AZ 85281 Ph: 480-889-2000
Civil Engineer:	Wood Patel 2051 W Northern Ave #100 Phoenix, AZ 85021 Ph: 602-335-8500 Fx: 602-335-8580	
Landscape Architect:	(RESIDENTIAL) Norris Design 901 East Madison Street Phoenix, AZ 85034 Ph: 602-254-9600	(OFFICE, OFFICE RAMP) Trueform Landscape Arch. Studio 2009 N 7th Street, Ste F Phoenix, AZ 85006 Ph: 480-382-4244
Electrical Engineer:	(RESIDENTIAL) TBD	(OFFICE, OFFICE RAMP) MSA Engineering Consultants 7878 N 16th Street, Ste 140 Phoenix, AZ 85020 Ph: 602-943-8424

Raintree Drive Residential

8501 E Raintree Drive
Scottsdale, AZ 85260

HIGH STREET RESIDENTIAL

RSP

esg ARCHITECTURE & DESIGN

500 Washington Avenue South, Suite 1080
Minneapolis, MN 55415
p 612.339.5508 | f 612.339.5382
www.esgarch.com

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed architect under the laws of the State of Arizona

Signature

Typed or Printed Name

License # Date

NOT FOR CONSTRUCTION

REZONING APP SUBMITTAL

ORIGINAL ISSUE: 10/14/19

REVISIONS

No.	Description	Date

219514
PROJECT NUMBER

ESG DRAWN BY ESG CHECKED BY

KEY PLAN

Raintree Drive Residential

OVERALL SITE PLAN

19-ZN-2019
12/13/2019

ATTACHMENT B – MARICOPA COUNTY ASSESSOR

B

215-53-103 Commercial Parcel

This is a commercial parcel and the current owner is PR III/CROW RAINTREE OFFICE LLC. It is located in the Northsight And Raintree Mld subdivision and MCR 140116. Its current year full cash value is $8,584,700.

Property Information

MCR #	140116
Description:	NORTHSIGHT AND RAINTREE MLD MCR 1401-16
Lat/Long	
Lot Size	359,050 sq ft.
Zoning	I-1
Lot #	1
High School District	PARADISE VALLEY UNIFIED #69
Elementary School District	PARADISE VALLEY UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	12 3N 4E
Market Area/Neighborhood	05/013
Subdivision (2 Parcels)	NORTHSIGHT AND RAINTREE MLD

Owner Information

PR III/CROW RAINTREE OFFICE LLC

Mailing Address	2231 E CAMELBACK RD STE 102, PHOENIX, AZ 85016
Deed Number	190313865
Last Deed Date	05/01/2019
Sale Date	n/a
Sale Price	n/a

ATTACHMENT C – TRIP GENERATION

C

Raintree Multi-family

Completed: TG 9/3/2019
Checked: GT 12/3/2019

Trip Generation Calculations

710 General Office Building

Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour			
				Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	
General Office Building	710	287	1000 SF GFA	9.74	50%	50%	1.16	86%	14%	1.15	16%	84%	2,798	1399	1399	333	286	47	330	53	277	Average
General Office Building	710	287	1000 SF GFA	2.71	50%	50%	0.37	86%	14%	0.47	16%	84%	778	389	389	106	91	15	135	22	113	Minimum
General Office Building	710	287	1000 SF GFA	27.56	50%	50%	4.23	86%	14%	3.23	16%	84%	7,916	3958	3958	1,215	1045	170	928	148	780	Maximum
Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour			
				Equation	% In	% Out	Equation	% In	% Out	Equation	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	
General Office Building	710	287	1000 SF GFA	Ln(T)=0.97Ln(X)+2.50	50%	50%	T=.94(X)+26.49	86%	14%	Ln(T)=0.95Ln(X)+0.36	16%	84%	2,953	1,476	1,477	296	255	41	310	49	261	Equation

General Office Building	Standard Deviation	5.15		0.47		0.42			
	Number of Studies	66		35		32			
	Average Size	171		117		114			
	R^2	0.83		0.85		0.88			

Raintree Multi-family

Completed: TG 11/4/2019
Checked: GT 12/3/2019

Trip Generation Calculations

221 Multifamily Housing (Mid-Rise) (Three to Ten Levels)

Land Use	ITE Code	Qty	Unit	Weekday Rate	Weekday % In	Weekday % Out	AM Peak Hour Rate	AM Peak Hour % In	AM Peak Hour % Out	PM Peak Hour Rate	PM Peak Hour % In	PM Peak Hour % Out	Weekday Total	Weekday In	Weekday Out	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	5.44	50%	50%	0.36	26%	74%	0.44	61%	39%	1,034	517	517	68	18	50	84	51	33	Average
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	1.27	50%	50%	0.06	26%	74%	0.15	61%	39%	241	121	120	11	3	8	29	18	11	Minimum
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	12.50	50%	50%	1.61	26%	74%	1.11	61%	39%	2,375	1188	1187	306	80	226	211	129	82	Maximum
Land Use	ITE Code	Qty	Unit	Weekday Equation	Weekday % In	Weekday % Out	AM Peak Hour Equation	AM Peak Hour % In	AM Peak Hour % Out	PM Peak Hour Equation	PM Peak Hour % In	PM Peak Hour % Out	Weekday Total	Weekday In	Weekday Out	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	
Multifamily Housing (Mid-Rise)	221	190	Dwelling Units	T=5.45(X)-1.75	50%	50%	Ln(T)=0.98Ln(X)-0.98	26%	74%	Ln(T)=0.96Ln(X)-0.63	61%	39%	1,034	517	517	64	17	47	82	50	32	Equation

Multifamily Housing (Mid-Rise)	Standard Deviation	2.03	0.19	0.19	
	Number of Studies	27	53	60	
	Average Size	205	207	208	
	R^2	0.77	0.67	0.72	

710 General Office Building

Land Use	ITE Code	Qty	Unit	Weekday Rate	Weekday % In	Weekday % Out	AM Peak Hour Rate	AM Peak Hour % In	AM Peak Hour % Out	PM Peak Hour Rate	PM Peak Hour % In	PM Peak Hour % Out	Weekday Total	Weekday In	Weekday Out	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	
General Office Building	710	178.564	1000 SF GFA	9.74	50%	50%	1.16	86%	14%	1.15	16%	84%	1,739	869	870	207	178	29	205	33	172	Average
General Office Building	710	178.564	1000 SF GFA	2.71	50%	50%	0.37	86%	14%	0.47	16%	84%	484	242	242	66	57	9	84	13	71	Minimum
General Office Building	710	178.564	1000 SF GFA	27.56	50%	50%	4.23	86%	14%	3.23	16%	84%	4,921	2461	2460	755	649	106	577	92	485	Maximum
Land Use	ITE Code	Qty	Unit	Weekday Equation	Weekday % In	Weekday % Out	AM Peak Hour Equation	AM Peak Hour % In	AM Peak Hour % Out	PM Peak Hour Equation	PM Peak Hour % In	PM Peak Hour % Out	Weekday Total	Weekday In	Weekday Out	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	
General Office Building	710	178.564	1000 SF GFA	Ln(T)=0.97Ln(X)+2.50	50%	50%	T=0.94(X)+26.49	86%	14%	Ln(T)=0.95Ln(X)+0.36	16%	84%	1,862	931	931	194	167	27	197	31	166	Equation

General Office Building	Standard Deviation	5.15	0.47	0.42	
	Number of Studies	66	35	32	
	Average Size	171	117	114	
	R^2	0.83	0.85	0.88	

TRAFFIC IMPACT ANALYSIS SUMMARY
Raintree Multi-Family
Raintree Drive: Northsight Boulevard to 87th Street
7-GP-2019 & 19-ZN-2019

Summary Prepared by David R. Smith, COS Traffic Engineering
Traffic Impact Study Prepared by Jamie Ann K. Blakeman, Lokahi Engineering
Traffic Impact Study Status (Category II): Accepted April 2020

Existing Conditions:
Site Location –
Existing Development – Site is currently undeveloped; previously approved LAND USE on the site (I-1 PCD, 63-DR-2000 / 63-DR-2000#2).
Street Classifications –

- Raintree Drive is classified as a Minor Arterial
- 87th Street is classified as a Major Collector.
- Northsight Boulevard is classified as a Major Collector.

Existing Street Conditions –

- The Northsight Boulevard and Raintree Drive intersection is signalized. There are exclusive left turn lanes on the all approaches (southbound only has dual lefts), and the eastbound, westbound, and southbound approaches have exclusive right turn lanes while northbound does not have an exclusive right turn lane.
- The 87th Street and Raintree Boulevard intersection is signalized. There are exclusive left turn lanes on the all approaches. There are exclusive northbound, eastbound, and westbound right turn lanes. Only the southbound approach does not have an exclusive right turn lane.
- The Northsight Boulevard and Evans Road/Driveway B intersection is stop controlled on the eastbound and westbound (Evans Road/Driveway B) approaches.
- The Raintree Drive and Driveway A intersection is stop controlled on the northbound and southbound (Driveway A) approaches.
- The 87th Street and Driveway C intersection is stop controlled on the eastbound and westbound (Driveway C) approaches.
- Raintree Drive has two lanes in each direction with a center raised median and is classified as a Minor Arterial.
- Both Northsight Boulevard and 87th Street are two-lane major collector streets. Both have a center raised median.

Existing Volumes –

- There are 33,200 daily vehicles on Raintree Drive from Northsight Boulevard east to 101 Freeway *(COS 2018 Traffic Volume and Collision Report)*
- There are 9,700 daily vehicles on Northsight Boulevard/Thunderbird Road south/east between Raintree Drive and 90th Street *(COS 2018 Traffic Volume and Collision Report)*.
- There are approximately XX daily vehicles on AA north of AA.

Existing Speed Limits –

- Raintree Drive has a 35 mph speed limit from Northsight Boulevard to 101 Freeway. West of Northsight Boulevard the speed limit remains 35 mph and east of the 101 Freeway the speed limit is 40 mph.
- Northsight Boulevard has a 40 mph speed limit from Raintree Drive south to where the roadway transitions to an east-west alignment and changes to

Thunderbird Road. East of this transition the speed limit is 35 mph. North of Raintree Drive the speed limit is 40 mph.

- 87th Street from Raintree Drive south to Northsight Boulevard has a speed limit of 35 mph. North of Raintree Drive, the 87th Street alignment becomes private property.

Collision Information –

The intersection of Raintree Drive and Northsight Boulevard has had 33 reported collisions from 2017 to 2018 with a rate of 1.21, ranking it #14 per the *COS Traffic Volume and Collision Data* report (citywide average = 0.58).

The segment of Northsight Boulevard from Raintree Drive north to Hayden Road has a crash rate of 5.42, ranking #10 citywide (citywide average = 1.53).

The segment of Raintree Drive from Northsight Boulevard to 101 Freeway has a crash rate of 3.50, ranking #32 citywide.

Proposed Development:

Description - The proposed development plan consists of multi-family with 190 dweeling units. The proposed development plan consists of 178,564 square feet of office land use.

Site Access – The applicant is proposing to have main site access from Raintree Drive at the existing median opening. The existing accesses from Evans Drive/Driveway B and 87th Street/Driveway C are proposed to be retained.

TRIP GENERATION COMPARISON TABLE:

	Daily Total	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Proposed - LAND USE UNITS/SF	2,773	196	79	275	84	205	289
Previously Approved - LAND USE UNITS/SF	NA	NA	NA	NA	NA	NA	NA
Increase/Decrease	2,773	196	79	275	84	205	289

Traffic Analysis:

Intersection Level of Service – Using a 2022 horizon year with traffic generated by the build out of the proposed development, all of the study intersections in the vicinity of the site operate a level of service D or better for both peak hours, with the following exceptions:

- Raintree Drive at Driveway A:
  - NB left AM and PM operate at LOS E and F, respectively
  - SB left AM and PM operate at LOS F
- Northsight Boulevard at Evans Road/Driveway B:
  - EB left AM and PM operate at LOS E and F, respectively

Additional Traffic Volumes – With the additional site generated traffic and the proposed site access, development of the site is estimated to increase daily traffic volumes along Raintree Drive by 2,100 vehicles and on Northsight Boulevard by 700 vehicles. Northsight Boulevard has adequate capacity to handle this additional traffic. However, Raintree Drive is estimated to exceed available capacity based

on the *2018 Traffic Volume and Collision* Report – 33,200 ADT + estimated 2,100 ADT by project equals approximately 35,300 with maximum capacity of 34,000 for a V/C ratio of 1.04. This is anticipated to be mitigated with the following two (2) capital improvement projects (CIP) – the Northsight Bouelvard and Raintree Drive extension and roundabout installation and the ADOT traffic interchange upgrades at 101 Freeway and Raintree Drive.

Observations:
Traffic Engineering staff made observations of traffic on the streets in the vicinity of the site during peak traffic periods. These traffic operational patterns and concerns were observed:

- Left turns out of the existing median opening on Raintree Drive and the Kohl's shopping center to the north and Vanguard to the south are difficult to make during peak periods.
- Raintree Drive is congested along the corridor from Northsight Boulevard through the 101 Freeway interchange. This condition will be mitigated with a City CIP project installing a roundabout at Northsight Boulevard and Raintree Drive and with ADOT's traffic interchange upgrade for the 101 Freeway and Raintree Drive project.

Additional Information:
Raintree Drive is currently a local residential street with primarily single family residences. The proposed development could potentially add commercial traffic to the street.

Raintree Northsight Extension Capital Improvement Project – The City currently has plans to provide improvements along Raintree Drive including constructing a roundabout at the currently signalized intersection of Raintree Drive and Northsight Bouelvard. This will improve the capacity of the intersection and should also improve traffic flow along Raintree Drive in proximity to the development.

ADOT also has a project to upgrade the existing SPUI interchange of the 101 Freeway at Raintree Drive to include a (tight) diamond interchange design.

Summary:
The approval of the zoning district change for the proposed land use will result in an estimated 2,773 trips generated per day to and from the project site. The development is estimated to generate 275 a.m. peak hour trips, and 289 p.m. peak hour trips. Currently the parcel is vacant and there is no recent land use case to compare to while the underlying zoning is approved for office use.

With the addition of the proposed site generated traffic, and taking into account the two (2) localized projects (roundabout at Northsight/Raintree and interchange upgrade at Raintree/L101), operations at the intersections in the vicinity of the site will continue to operate at LOS D or better.

Comments/Concerns:

- Transportation staff recommend that the median access on Raintree Drive be monitored during and after the development is constructed.
- The level-of-service at the unsignalized intersections of Raintree Drive and Driveway and Northsight Boulevard and Evans Road/Driveway B will continue to operate at

LOS F with the addition of the site generated traffic. Drivers may seek alternate routes to avoid the congestion and delay at Raintree Drive and Driveway A and Northsight Boulevard and Evans Road/Driveway B.

Backpulse Pump – NPSH Calculations

Net Positive Suction Head Required ($NPSH_R$) = 9.2 ft

Net Positive Suction Head Available ($NPSH_A$)

$$NPSH = \frac{p_a}{\gamma} - Z - h_L - \frac{p_v}{\gamma}$$

$p_a(20°C,\ 968\ ft.) = atmospheric\ pressure = 14.70\ psi$

$\gamma = specific\ weight\ of\ water = \frac{62.4\ lb}{ft^3} = \frac{0.0361\ lb}{in^3}$

See comment on CIP Pump

$Z = static\ suction\ lift = 5\ ft$

$h_L(2{,}500\ gpm) = intake\ headloss = 2.58\ ft$

$p_v(20°C) = vapor\ pressure\ of\ water = 0.2563\ psi$

$$NPSH = \frac{\frac{14.70\ lbs}{in^2}\left(\frac{144\ in^2}{ft^2}\right)}{\frac{62.4\ lbs}{ft^3}} - (5) - 2.58ft - \frac{\frac{0.2563\ lbs}{in^2}\left(\frac{144\ in^2}{ft^2}\right)}{\frac{62.4\ lbs}{ft^3}} =$$

$$= 33.9231\ ft - 5\ ft - 2.58\ ft - 0.5916\ ft = 25.7515\ ft \approx 26\ ft > 9.2\ ft$$