Archaeological Resources

Airport Vicinity Development Checklist

Parking Study

Trip Generation Comparison

Parking Master Plan

FIESTA RANCH

TRAFFIC IMPACT & MITIGATION ANALYSIS

Prepared for:

Wildcat Ridge, LLC
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ACCEPTED
CITY OF SCOTTSDALE
TRANSPORTATION DEPARTMENT
Project Number: 19.5001
November 14, 2019

DATE: 12/4/2019

REVIEWER: Doug Ostler

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FIESTA RANCH

TRAFFIC IMPACT & MITIGATION ANALYSIS

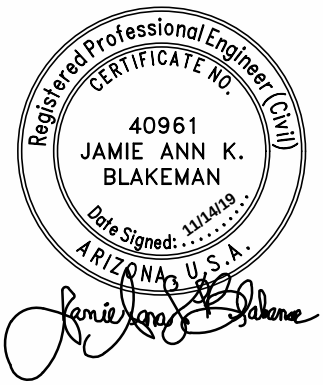

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TABLE OF CONTENTS:

FIGURES:

TABLES:

APPENDICES:

1. INTRODUCTION AND EXECUTIVE SUMMARY

1.1. PURPOSE OF REPORT AND STUDY OBJECTIVES

Lōkahi, LLC (Lōkahi) was retained by Wildcat Ridge, LLC to complete a Traffic Impact and Mitigation Analysis for the proposed Fiesta Ranch development. The development is located south of Rio Verde Drive between 136th Street and approximately 1,000 feet east of 141st Street in Scottsdale, Arizona. The proposed site is bound by Rio Verde Drive to the north, 136th Street to the west, and residential land uses to the south and the east. See Figure 1 for the vicinity map.

The proposed 273.3-acre residential development will include 260 single-family residential homes. See Figure 2 and Appendix A for the proposed site plan.

The objective of this Traffic Impact and Mitigation Analysis is to analyze the traffic related impacts of the proposed development onto the adjacent roadway network.

1.2. EXECUTIVE SUMMARY

The report presents the analyses and the results of a traffic study prepared for the proposed Fiesta Ranch residential development, located south of Rio Verde Drive between 136th Street and approximately 1,000 feet east of 141st Street in Scottsdale, Arizona.

The proposed 273.3-acre residential development will include 260 single-family residential homes.

This Traffic Impact and Mitigation 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 zoning
- Level of service analysis for the build out year (2027) weekday AM and PM peak hours
    - 2027 No Build
    - 2027 Build

The following are nine (9) intersections included in this study:

- Rio Verde Drive and 136th Street (1)
- Rio Verde Drive and 138th Street (2)
- Driveway A and 138th Street (3)
- Rio Verde Drive and 141st Street (4)

- Driveway B and 141st Street (5)
- Driveway C and 141st Street (6)
- Driveway D and 141st Street (7)
- Driveway E and 141st Street (8)
- Driveway F and 141st Street (9)
- Driveway G and 136th Street (10)

Trip Generation

The proposed development is anticipated to generate 2,454 weekday trips, with 193 trips occurring during the AM peak hour and 257 trips occurring during the PM peak hour.

Land Use	ITE Code	Qty	Units	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	260	Dwelling Units	2,454	193	48	145	257	162	95
			TOTAL	2,454	193	48	145	257	162	95

Trip Generation Comparison (Existing Zoning vs. Proposed Development)

A comparison between the trips generated by the build out under the existing R1-70 and R1-190 zoning versus the proposed 260 residential development was calculated.

Land Use	ITE Code	Qty	Units	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Single-Family Detached Housing (Existing Zoning)	210	127	Dwelling Units	1,199	94	24	71	126	79	47
			TOTAL	1,199	94	24	71	126	79	47
Single-Family Detached Housing (Proposed Development)	210	260	Dwelling Units	2,454	193	48	145	257	162	95
			TOTAL	2,454	193	48	145	257	162	95
			Difference	1,255	99	25	75	131	83	48

The proposed Fiesta Ranch residential development is anticipated to generate 1,255 more weekday daily trips, 99 more trips during the AM peak hour, and 131 more trips during the PM peak hour.

Future Conditions

Year 2027 (build out) analyses were completed without, as well as with the build out of the proposed Fiesta Ranch development. An annual growth rate of 2.0% was applied to the existing traffic volumes to create the future background traffic volumes for year 2027.

Year 2027

Capacity analyses were completed for both the AM and PM peak hours for the year 2027, without, as well as with the build out of the proposed Fiesta Ranch development. All movements at the

study intersection operate at a LOS D or better during the AM and PM peak hours with the exception of the following:

Rio Verde Drive and 136th Street (1)

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

The City recognizes that this intersection is a rural minor arterial (Rio Verde Drive) with a rural minor collector (136th Street) and in the future may require the installation of a traffic control device.

The proposed Fiesta Ranch development is providing east-west connections through the site. Should a traffic control device be installed at the intersection of Rio Verde Drive and 136th Street (1), residents will be able to use the internal roadways to access this intersection.

Right Turn Lanes

Per the City of Scottsdale's 2018 Design Standards & Policies Manual, Section 5-3.123.E.1, auxiliary right-turn lanes at street intersections along minor arterials may be required by the Transportation Department. According to the *City of Scottsdale Transportation Master Plan*, adopted in July 2016, Rio Verde Drive is classified as a rural minor arterial. The Transportation Department has requested eastbound right turn deceleration lanes be provided at the following intersections:

- Rio Verde Drive and 136th Street (1)
- Rio Verde Drive and 138th Street (2)
- Rio Verde Drive and 141st Street (4)

The City's standard vehicle storage length for a right-turn lane is 150 feet.

Left Turn Lanes

Per the City of Scottsdale's 2018 Design Standards & Policies Manual, Section 5-3.123.E.2, auxiliary left-turn lanes are required at all street intersections on arterials. Classified as a rural minor arterial, westbound left turn deceleration lanes shall be provided at the following intersections:

- Rio Verde Drive and 136th Street (1)
- Rio Verde Drive and 138th Street (2)
- Rio Verde Drive and 141st Street (4)

The City requires lane lengths to be determined based on the anticipated turning volume. For all of these intersections in the year 2027 build the number of westbound left turns does not exceed 14

vehicles during the PM peak hour. Based on these numbers, the City has requested a storage length of 150 feet.

Recommendations

The recommendations with the build out of the proposed Fiesta Ranch residential development include:

- Rio Verde Drive and 136th Street (1)
  - Provide an eastbound right turn deceleration lane
  - Provide a westbound left turn deceleration lane
- Rio Verde Drive and 138th Street (2)
  - Provide an eastbound right turn deceleration lane
  - Provide a westbound left turn deceleration lane
- Rio Verde Drive and 141st Street (4)
  - Provide an eastbound right turn deceleration lane
  - Provide a westbound left turn deceleration lane

2. PROPOSED DEVELOPMENT

The study area is located in the City of Scottsdale, Arizona approximately six miles east of Pima Road north of State Route Loop 101. The proposed Fiesta Ranch development will be located south of Rio Verde Drive, between 136th Street and approximately 1,000 feet east of 141st Street in Scottsdale, Arizona. The proposed development is bound by Rio Verde Drive to the north, 136th Street to the west, and residential land uses to the south and the east. See Figure 1 for a vicinity map.

The proposed development will be comprised of 260 single-family residential dwelling units. See Figure 2 and Appendix A for the proposed site plan.

There will be eight driveway access points to the Fiesta Ranch development. There will be two along 138th Street, and six along 141st Street. See Figure 3.

The proposed project is anticipated to be built out in year 2027.

FIGURE 1 | VICINITY MAP

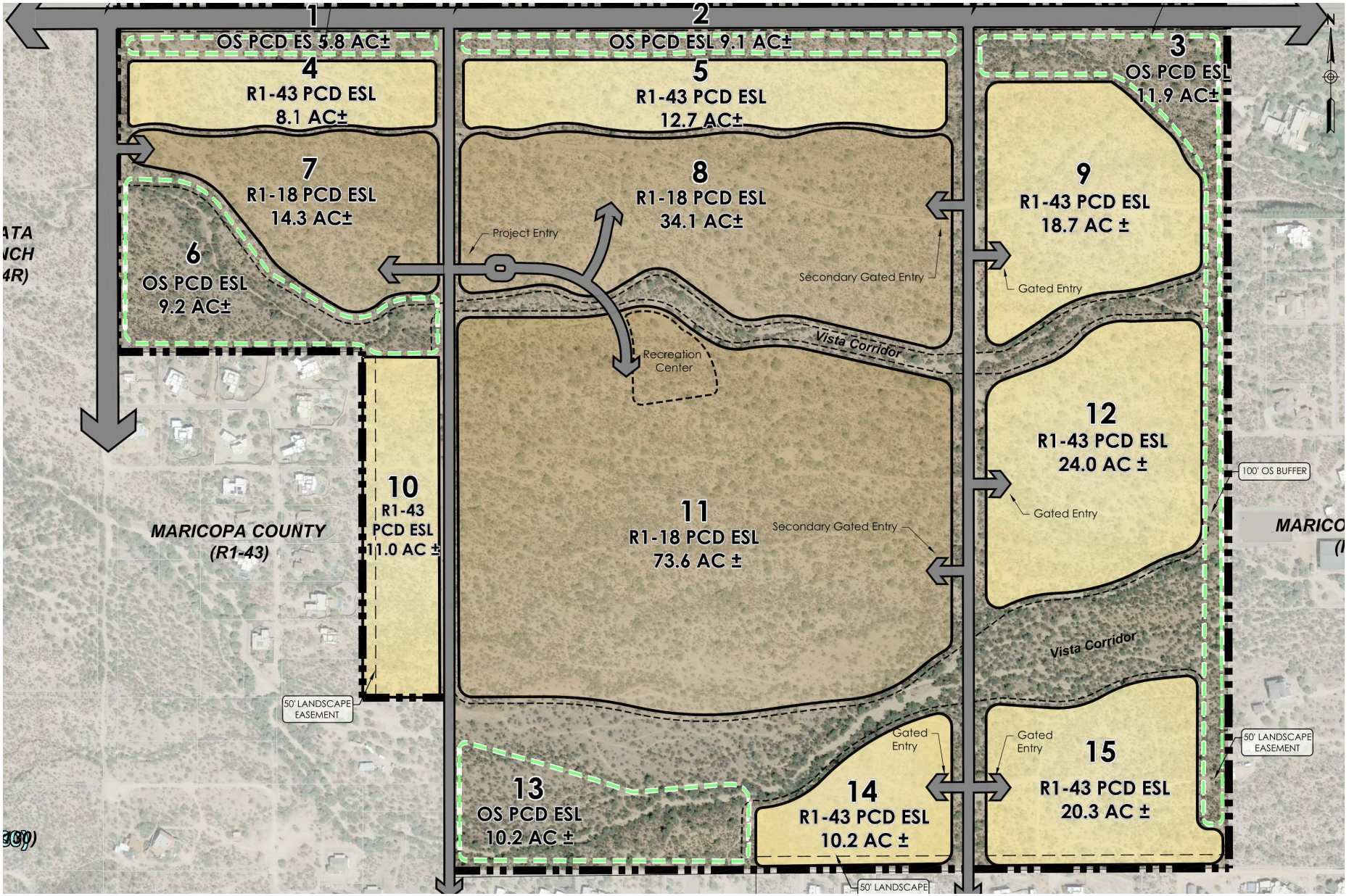


FIGURE 2 | SITE PLAN

3. AREA CONDITIONS

The study area is located in the City of Scottsdale, Arizona. Section 3.1 and Section 3.2 provides detailed descriptions of the study roadway segments and intersections. See Figure 3 for the study area.

3.1. STUDY ROADWAY SEGMENTS

Rio Verde Drive, in the vicinity of the study area runs east-west adjacent to the north border of the proposed development. One through lane is provided for each direction of travel. There is a posted speed limit of 50 miles per hour (mph). According to the *City of Scottsdale Transportation Master Plan*, adopted in July 2016, Rio Verde Drive is classified as a rural minor arterial. The City of Scottsdale's 2016 *Average Daily Segment Traffic Volumes* map indicates that 10,900 vehicles per day were recorded along Rio Verde Drive, east of Alma School Parkway. Rio Verde Drive becomes Dynamite Boulevard at the intersection of Alma school Parkway, located approximately 3.2 miles west of the proposed Fiesta Ranch development.

136th Street, in the vicinity of the study area runs north-south adjacent to the west border of the proposed development. North of Rio Verde Drive, 136th Street provides one through lane for each direction of travel on a paved roadway with a posted speed limit of 25 mph. South of Rio Verde Drive, 136th Street is a two-way unpaved roadway that currently provides access to single-family residences and terminates approximately two-thirds of a mile south of Rio Verde Drive. According to the *City of Scottsdale Master Transportation Plan*, adopted in July 2016, 136th Street north of Rio Verde Drive is classified as a rural minor collector.

138th Street, in the vicinity of the study area runs north-south through the proposed development. It is currently an unpaved roadway that provides access to single-family residences north and south of Rio Verde Drive. 138th Street terminates less than a mile south of Rio Verde Drive.

141th Street, in the vicinity of the study area runs north-south through the proposed development. It is currently an unpaved roadway that provides access to single-family residences north and south of Rio Verde Drive. 141st Street terminates less than a mile south of Rio Verde Drive.

3.2. STUDY INTERSECTIONS

Rio Verde Drive and 136th Street (1) currently operates as a stop controlled intersection, with stop control on the northbound and southbound approaches. The south leg is unpaved and is offset approximately 115 feet east of the north leg. The southbound and eastbound approaches provide a dedicated left turn lane, and a shared through-right turn lane. The westbound approach provides a through lane and a dedicated right turn lane. The striping does not define a specific lane for the westbound left turn movement, but based on the tracking, this movement is being made. The northbound is an unpaved approach. Based on the dirt tracking left and right turn movements are made at more than one location.

Rio Verde Drive and 138th Street (2) currently operates as a stop controlled intersection, with stop control on the northbound and southbound approaches. The north and south legs are unpaved. All approaches provide a shared left-through-right turn lane.

Driveway A and 138th Street (3) will provide two access points to the proposed development, one to the east and one to the west forming a two-way stop controlled intersection. The two driveways will provide full-access into and out of the site. This access point is located approximately 975 feet south of Rio Verde Drive.

Rio Verde Drive and 141st Street (4) currently operates as a stop controlled intersection, with stop control on the northbound and southbound approaches. The north and south legs are unpaved. All approaches provide a shared left-through-right turn lane.

Driveway B and 141st Street (5) will be a t-intersection, with stop control on the westbound approach. It will be a full-access driveway allowing all movements into and out of the site. The access point is located approximately 725 feet south of Rio Verde Drive.

Driveway C and 141st Street (6) will be a t-intersection, with stop control on the westbound approach. It will be a full-access driveway allowing all movements into and out of the site. The access point is located approximately 930 feet south of Rio Verde Drive.

Driveway D and 141st Street (7) will be a t-intersection, with stop control on the westbound approach. It will be a full-access driveway allowing all movements into and out of the site. The access point is located approximately one-third mile south of Rio Verde Drive.

Driveway E and 141st Street (8) will be a t-intersection, with stop control on the westbound approach. It will be a full-access driveway allowing all movements into and out of the site. The access point is located approximately 2,150 feet south of Rio Verde Drive.

Driveway F and 141st Street (9) will provide two access points to the proposed development, one to the east and one to the west forming a two-way stop controlled intersection. The two driveways will provide full-access into and out of the site. This access point is located approximately 2,975 feet south of Rio Verde Drive.

Driveway G and 136th Street (10) will be a t-intersection, with stop control on the westbound approach. It will be a full-access driveway allowing all movements into and out of the site. The access point is located approximately 500 feet south of Rio Verde Drive.

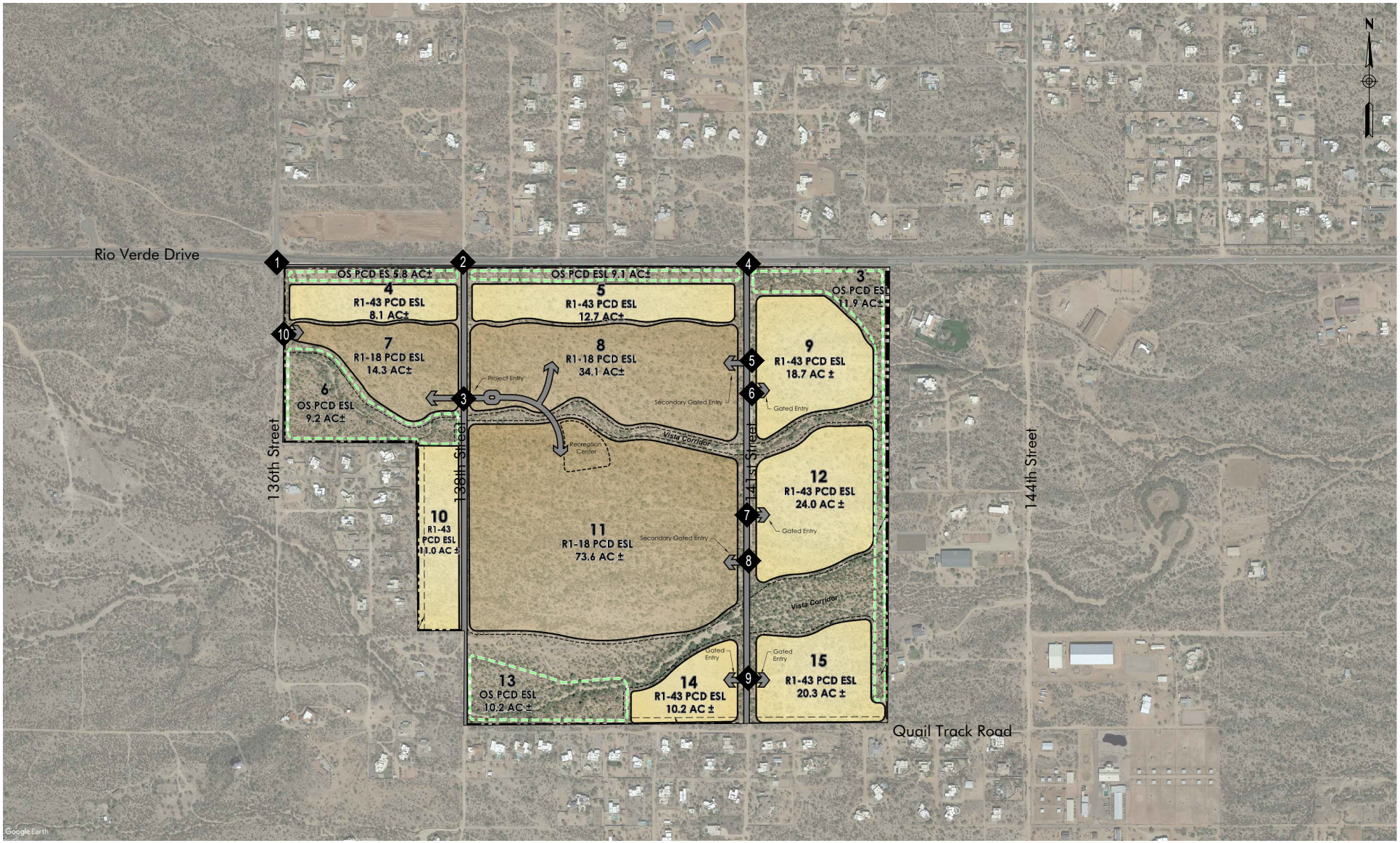


FIGURE 3 | STUDY AREA

3.3. STUDY AREA LAND USE

According to the City of Scottsdale's Land Use Element map, this proposed land use is designated for Rural Neighborhood land use. The surrounding area includes single-family residences and undeveloped land.

3.4. SITE ACCESSIBILITY

Roadway System

The study area is located in the City of Scottsdale, Arizona approximately nine miles northeast of State Route Loop 101 (SR 101L), and approximately six miles east of Pima Road. Within the vicinity of the proposed site, with the exception of Rio Verde Drive, the roadway network is generally unpaved. The proposed Fiesta Ranch development is bordered by Maricopa County to the north, south and east.

Pedestrian Facilities

There are no sidewalks provided along Rio Verde Drive nor along any other roadway in the vicinity of the study area.

No marked crosswalks are provided at the study intersections.

According to the *City of Scottsdale Master Transportation Plan*, adopted in July 2016, 136th Street south of Rio Verde Drive is identified as a high priority shared use unpaved trail. Rio Verde Drive within the study area is identified as a medium priority shared use unpaved trail.

Bicycle Facilities and Shared-Use Paths

Bike lanes are currently provided along Rio Verde Drive between 136th Street to 144th Street, which is the east City limits.

Transit Facilities

There are no transit facilities within the study area.

3.5. COLLISION HISTORY

The most recent 3-year collision history, from April 2015 to April 2018, was obtained from the City of Scottsdale. See Appendix B for collision data. The crash data included the following intersections:

- Rio Verde Drive and 136th Street (1)
- Rio Verde Drive and 138th Street (2)
- Rio Verde Drive and 141st Street (4)

Rio Verde Drive and 136th Street (1)
During the three year period, there were a total of 5 crashes, of which 1 was a possible injury, with the remaining 4 crashes being property damage only. There were a total of 2 rear end, 2 left turn, and 1 single vehicle crash.

Rio Verde Drive and 138th Street (2)
During the three year period, there were a total of 2 crashes, of which 1 was a non-incapacitating injury while the other was property damage only. There was 1 rear end, and 1 other crash.

Rio Verde Drive and 141st Street (4)
During the three year period, there were a total of 2 crashes, of which both were non-capacitating injury crashes. Both were rear end collisions, in which drivers were sighted for driving at speeds too fast for conditions. Both of these crashes occurred 115 to 145 feet west of the intersection. One crash involved eastbound vehicles, and the other crash involved westbound vehicles.

3.6. COLLISION RATES

The City of Scottsdale's *2016 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 City of Scottsdale's 2016 Traffic Volume and Collision Rate Data report does not provide collision rate information for the study roadway segments or intersections.

4. EXISTING CONDITIONS

4.1. EXISTING LAND USE

The existing site is currently comprised of 6 undeveloped parcels, four are zoned R1-70 and two are zoned R1-190.

According to the Maricopa County Assessor's website, the 6 parcel sites consists of 1,488,078 square feet. 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 Tuesday March 5, 2019turning movement counts were obtained from 7:00 to 9:00 am and from 4:00 to 6:00 pm at the following location:

- Rio Verde Drive and 136th Street (1)
- Rio Verde Drive and 138th Street (2)
- Rio Verde Drive and 141st Street (4)

Additionally, bi-directional tube counts were previously collected on Tuesday, June 12, 2018 in 15-minute intervals at the following two locations:

- Rio Verde Drive west of 136th Street
- Rio Verde Drive east of 141st Street

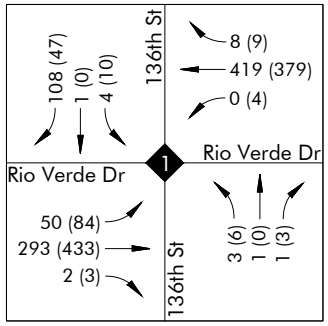
See Appendix D for detailed traffic count data.

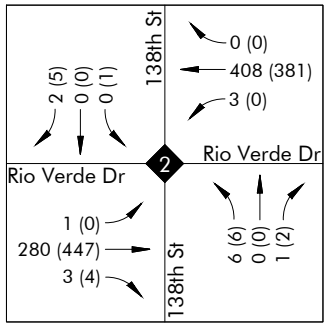
The turning movement counts were then analyzed for the highest 1-hour within each time period. The following peak hours were analyzed throughout this study:

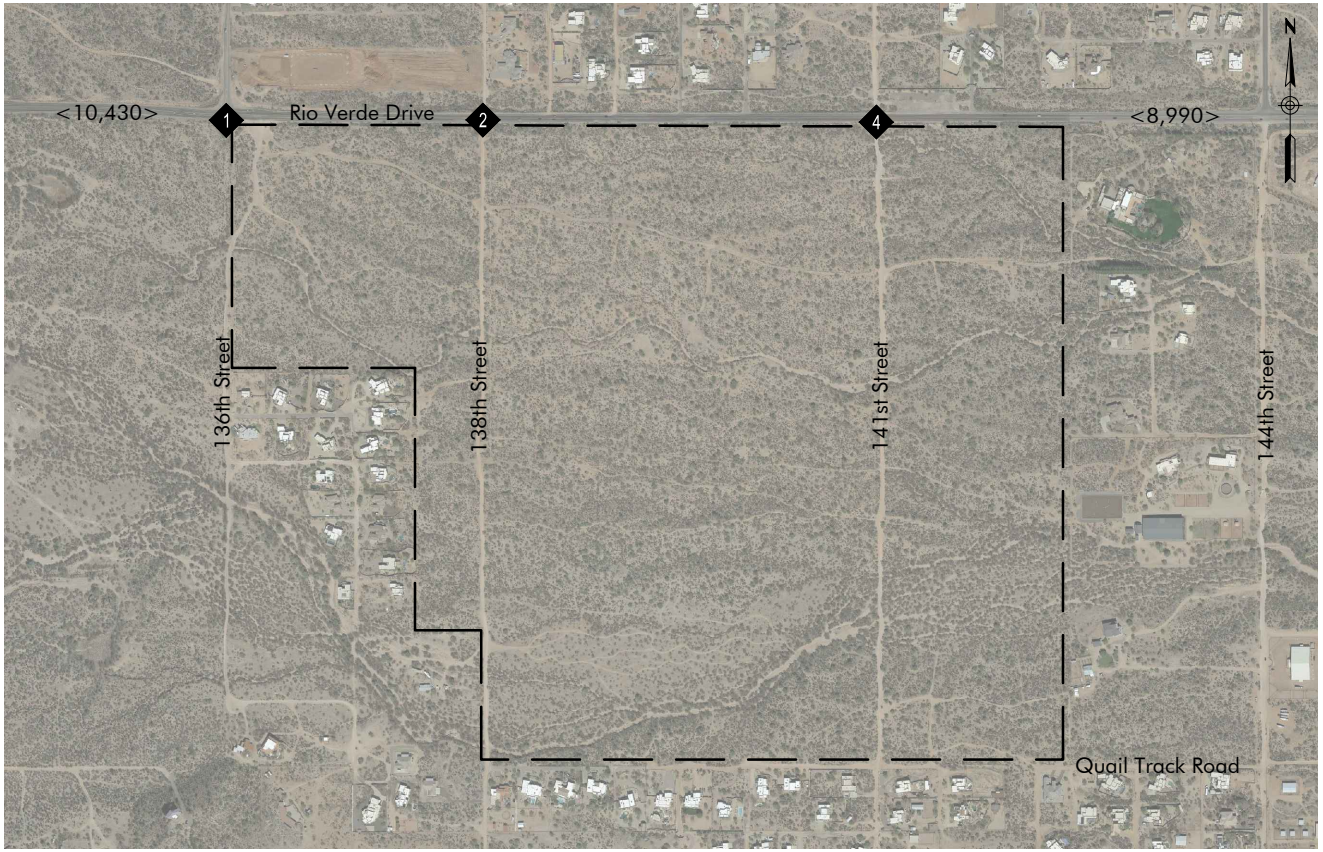
- AM Peak Hour 7:30 am – 8:30 am
- PM Peak Hour 4:00 pm – 5:00 pm

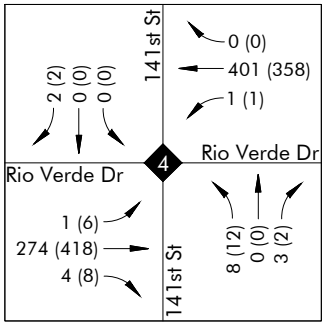
The City of Scottsdale seasonal adjustment factors were used to adjust the collected traffic counts. The traffic volumes were adjusted based on the month the counts were taken.

See Figure 4 for the existing adjusted AM and PM peak hour traffic volumes. For the purposes of this traffic analysis the north leg of the existing Rio Verde Drive and 136th Street intersection was shown aligned with the south leg.









Legend

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

FIGURE 4 | 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) from the traffic counts.

Table 1 is from the 6th *Edition of the Highway Capacity Manual* Exhibit 18-4 and 19-1, which lists the Level of Service (LOS) thresholds for two-way stop-controlled intersections.

Table 1 – Level of Service Criteria for Unsignalized Intersections

LOS	Control Delay (s/veh)
A	0 - 10
B	> 10–15
C	> 15-25
D	> 25-35
E	> 35-50
F	> 50

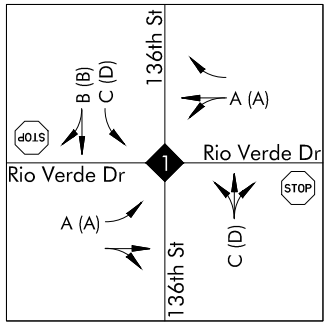
The existing AM and PM peak hour level of service and delay for the unsignalized intersection is shown in Table 2.

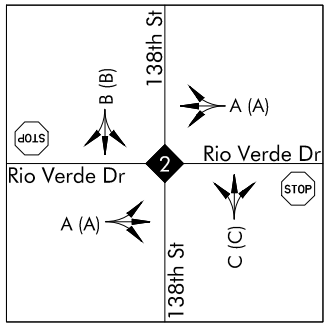
Table 2 – Existing Level of Service and Delay for Unsignalized Intersections

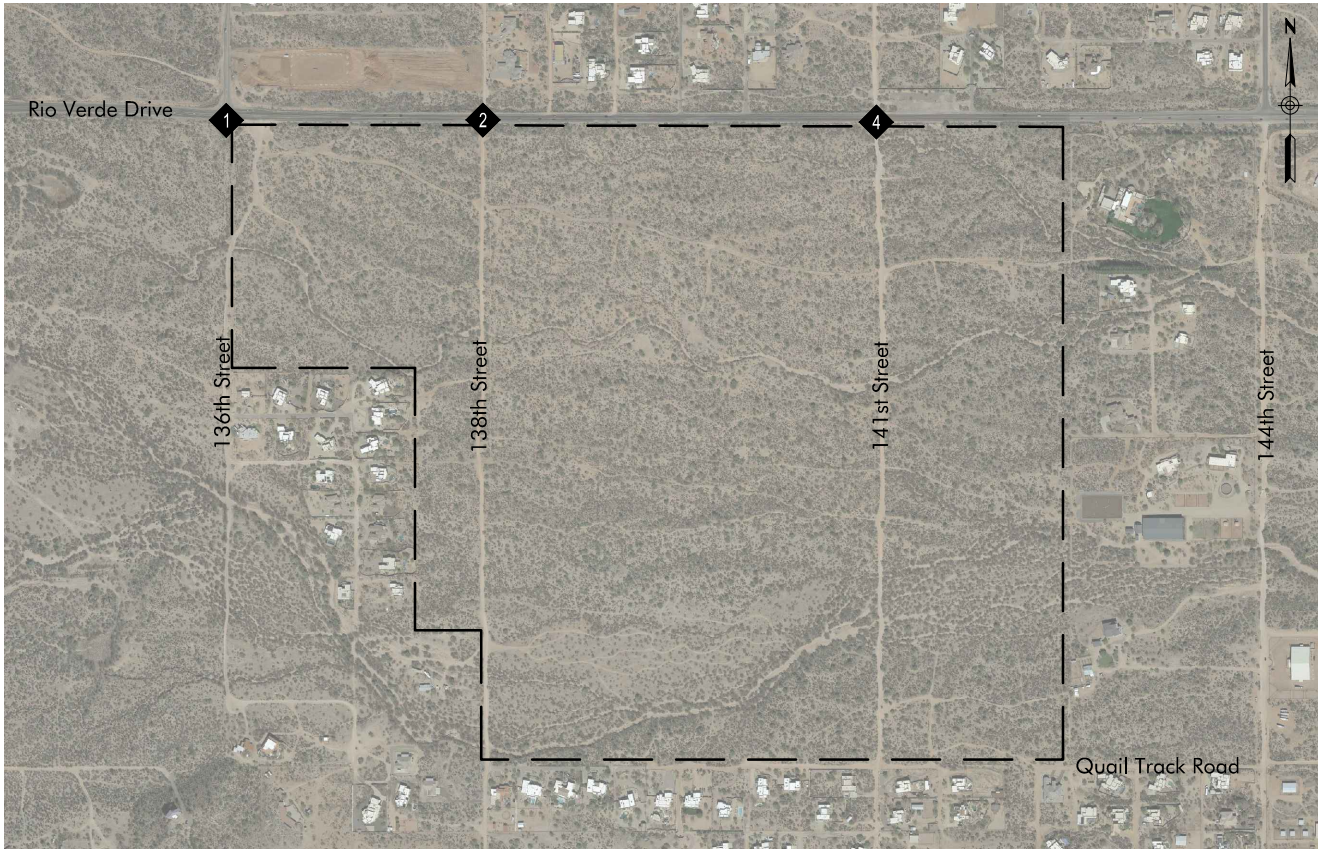
Intersection	Existing			
	AM PEAK		PM PEAK	
Unsignalized Intersections	LOS	DELAY	LOS	DELAY
Rio Verde Drive and 136th Street (1)				
Eastbound Left	A	8.5	A	8.5
Westbound Shared Left-Through	A	0.0	A	8.3
Northbound Shared Left-Through-Right	C	21.3	C	23.0
Southbound Left	C	19.9	D	26.3
Southbound Shared Through-Right	B	12.7	B	11.2
Rio Verde Drive and 138th Street (2)				
Eastbound Shared Left-Through-Right	A	8.2	A	0.0
Westbound Shared Left-Through-Right	A	7.9	A	0.0
Northbound Shared Left-Through-Right	C	15.3	C	16.8
Southbound Shared Left-Through-Right	B	10.8	B	11.9
Rio Verde Drive and 141st Street (4)				
Eastbound Shared Left-Through-Right	A	8.2	A	8.1
Westbound Shared Left-Through-Right	A	7.8	A	8.3
Northbound Shared Left-Through-Right	B	14.3	C	17.5
Southbound Shared Left-Through-Right	B	10.8	B	10.4

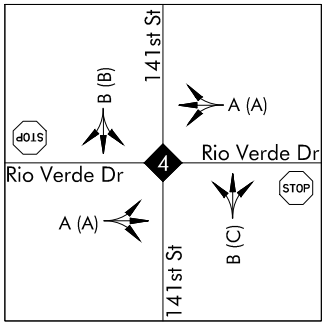
See Figure 5 for the existing AM and PM peak hour capacity analysis. The detailed capacity analysis sheets can be found in Appendix E.

All existing study intersection currently operates with all movements at a LOS D or better during the AM and PM peak hours, which is an acceptable level of service.









Legend

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

FIGURE 5 | EXISTING CAPACITY ANALYSIS

5. PROJECTED TRAFFIC

5.1. TRIP GENERATION

Trip Generation (Existing Zoning)

The trip generation for the existing zoning was calculated utilizing the Institute of Transportation Engineers (ITE) publication entitled *Trip Generation, 10th Edition.* The ITE rates are based on studies that measure the trip generation characteristics for various types of land uses. The rates are expressed in terms of trips per unit land use type. This publication is considered to be the standard for the transportation engineering profession. According to the Maricopa County Assessor's website, the site is currently comprised of six (6) undeveloped parcels as shown in Table 3.

Table 3 – Existing Parcels

No.	Parcel	Single-Family Residential	Lot Size (sq ft)
1	219-39-010M	R1-70 Zoning	737,035
2	219-39-010N	R1-70 Zoning	402,494
3	219-39-010U	R1-70 Zoning	3,165,941
4	219-39-010V	R1-70 Zoning	3,165,941
5	219-39-010G	R1-190 Zoning	850,291
6	219-39-010P	R1-190 Zoning	3,166,376
		TOTAL	11,488,078

R1-70 Zoning, Single-Family Residential

The City of Scottsdale Code of Ordinances for R1-70 single-family residential requires each lot to be at a minimum 70,000 square feet. The four (4) R1-70 parcels are approximately 7,471,411 square feet, resulting in a possible build out of 106 dwelling units.

R1-190 Zoning, Single-Family Residential

The City of Scottsdale Code of Ordinances for R1-190 single-family residential requires each lot to be at a minimum 190,000 square feet. The two (2) R1-190 parcels are approximately 4,016,667 square feet, resulting in a possible build out of 21 dwelling units.

Table 4 – Trip Generation – Existing Zoning

Land Use	ITE Code	Qty	Units	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	127	Dwelling Units	1,199	94	24	71	126	79	47
			TOTAL	1,199	94	24	71	126	79	47

Trip Generation (Proposed Development)

Utilizing Land Use 210 – Single-Family Detached Housing, the trips generated by the proposed 260 single-family home Fiesta Ranch development were calculated. The total trip generation for the proposed Fiesta Ranch residential development is show in Table 5 below. Detailed trip generation calculations are provided in Appendix F.

Table 5 – Trip Generation – Proposed Development

Land Use	ITE Code	Qty	Units	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	260	Dwelling Units	2,454	193	48	145	257	162	95
			TOTAL	2,454	193	48	145	257	162	95

5.2. TRIP GENERATION COMPARISON

A comparison between the trips generated by the existing R1-70 and R1-190 zoning and the proposed Fiesta Ranch residential development is shown in Table 6.

Table 6 – Trip Generation Comparison (Existing Zoning vs. Proposed Development)

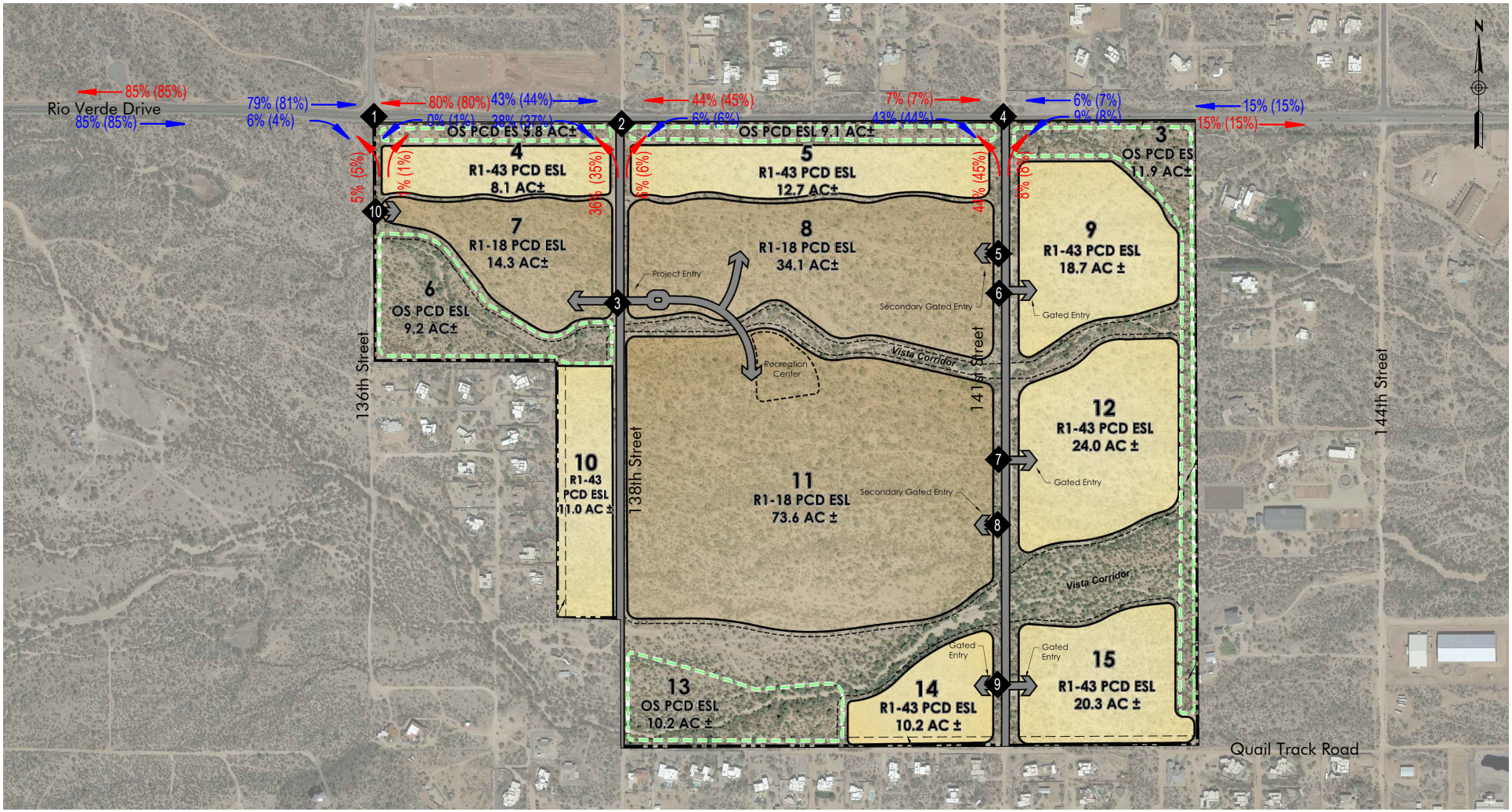
Land Use	ITE Code	Qty	Units	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Single-Family Detached Housing (Existing Zoning)	210	127	Dwelling Units	1,199	94	24	71	126	79	47
			TOTAL	1,199	94	24	71	126	79	47
Single-Family Detached Housing (Proposed Development)	210	260	Dwelling Units	2,454	193	48	145	257	162	95
			TOTAL	2,454	193	48	145	257	162	95
			Difference	1,255	99	25	75	131	83	48

Table 6 shows that the proposed Fiesta Ranch residential development is expected to generate an additional 1,255 weekday daily trips, 99 AM peak hour, and 131 PM peak hour trips, as compared to potential trips generated by the existing zoning.

5.3. 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 Fiesta Ranch residential development is based on the distribution of the existing traffic along Rio Verde Drive. Therefore, it was assumed that 85 percent of the trips will travel to and from west of the site and the remaining 15 percent of the trips will travel to and from east of the site. The trip distribution is shown in Figure 6.

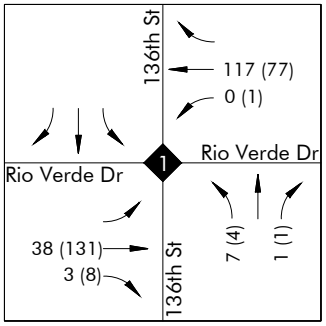
The trip assignment was based on the site layout and the relative proximity of residences to access driveways onto 136th Street, 138th Street and 141st Street. The site generated traffic volumes are shown in Figure 7.

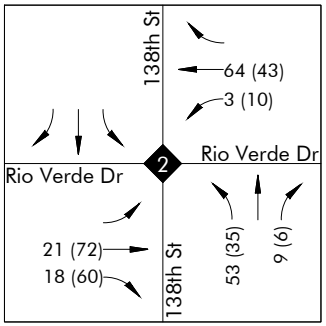


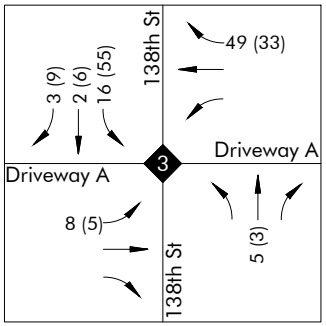
Legend

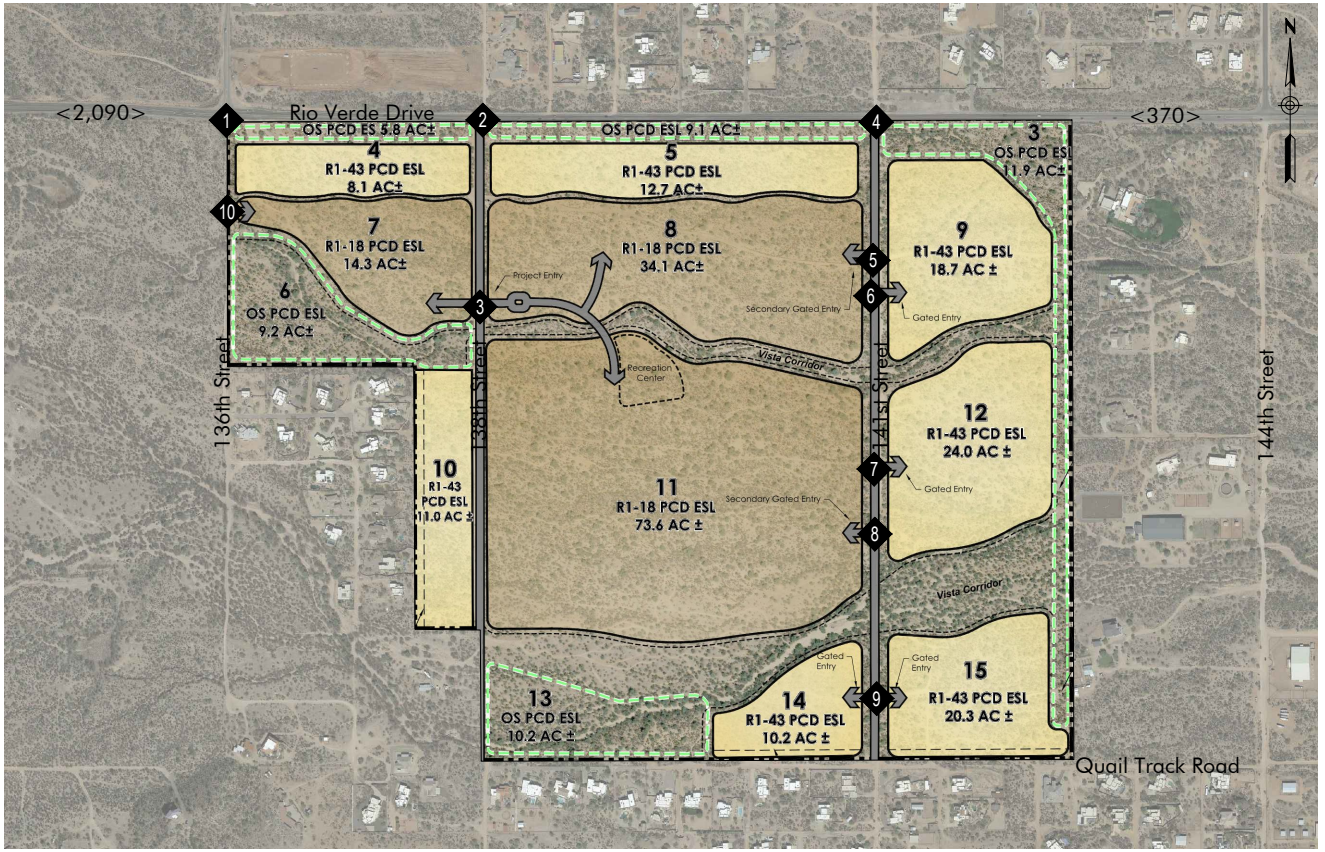
AM (PM)	Inbound Trip Distribution Percentages
AM (PM)	Outbound Trip Distribution Percentages
X	Intersection

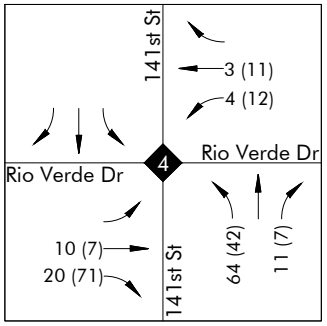
FIGURE 6 | TRIP DISTRIBUTION

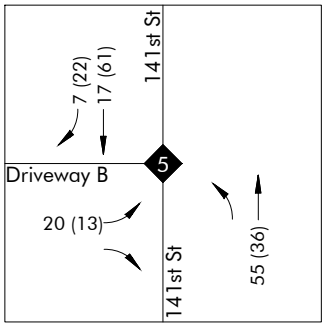


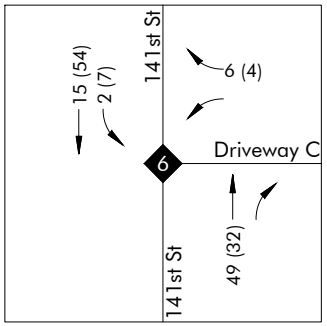


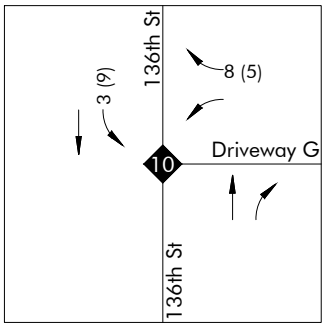


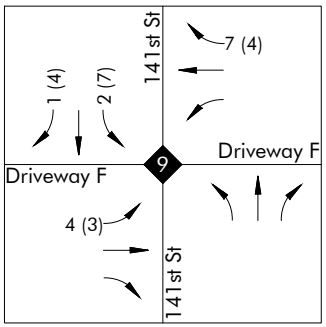


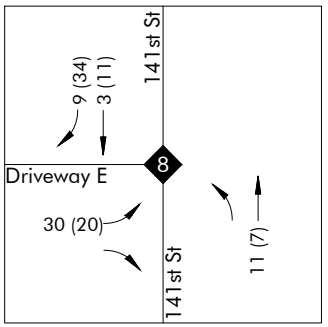


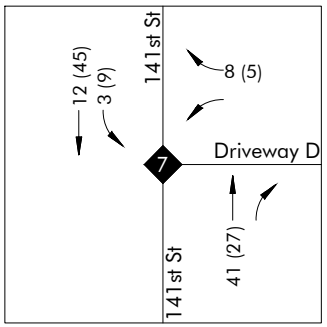












Legend

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

FIGURE 7 | SITE TRAFFIC VOLUMES

6. FUTURE CONDITIONS

The proposed Fiesta Ranch residential development is anticipated to be built out by year 2027. This section analyzes the traffic related impacts of the proposed development on the surrounding roadway network in the build out year.

6.1. YEAR 2027 BACKGROUND TRAFFIC VOLUMES

According to the 2016 Maricopa Associations of Governments (MAG) Socioeconomic projections within the proposed study area, it is estimated that in the year 2050 the population will be approximately 30,323. MAG estimates that the 2015 population of the surrounding area is 18,371. This results in an approximate annual growth rate of 1.44%. As a conservative approach, a 2.0% annual growth rate was utilized to project existing traffic volumes (**Figure 4**) to year 2027. The 2027 background (no build) traffic volumes are shown in **Figure 8.**

6.2. YEAR 2027 BUILD TRAFFIC VOLUMES

To determine 2027 build traffic volumes, site traffic volumes (**Figure 7**) were added to 2027 background traffic volumes (**Figure 8**). This represents year 2027 traffic volumes with the build out of the proposed development. See **Figure 9**.

6.3. YEAR 2027 NO BUILD CAPACITY ANALYSIS

The capacity and level of service for the study area intersections were evaluated for year 2027 no build conditions. See **Figure 10** for the AM and PM peak hour year 2027 no build capacity analysis. The detailed capacity analysis sheets can be found in **Appendix H**.

The results of the 2027 no build capacity analysis level of service and delay for each movement of the unsignalized intersections are shown in **Table 7**. All movements operate at a LOS D or better, with the exception of the following:

Rio Verde Drive and 136th Street (1)

- SB left PM peak hour operates at LOS E

The City recognizes that this intersection is a rural minor arterial (Rio Verde Drive) with a rural minor collector (136th Street) and in the future may require the installation of a traffic control device.

6.4. YEAR 2027 BUILD CAPACITY ANALYSIS

The capacity and level of service for the study area intersections were also evaluated for the year 2027 build traffic volumes. See **Figure 11** for the AM and PM peak hour year 2027 build capacity analysis. The detailed capacity analysis sheets can be found in **Appendix I**.

The results of the 2027 build capacity analysis level of service and delay for each movement of the unsignalized intersections are shown in **Table 7**. All study area intersections operate with movements at a LOS D or better with the exception of the following:

Rio Verde Drive and 136th Street (1)

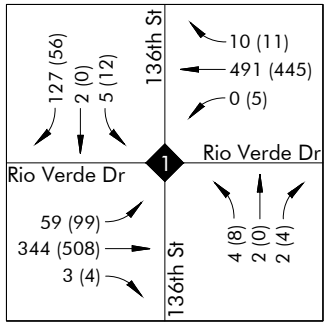
- NB shared left-through-right AM and PM peak hours operate at LOS E
- SB left PM peak hour operates at LOS F

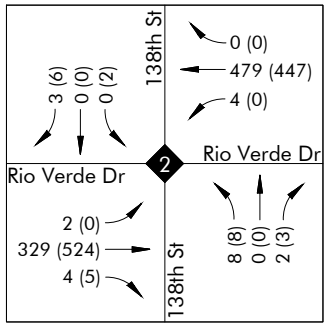
As previously mentioned, the City recognizes that this intersection is a rural minor arterial (Rio Verde Drive) with a rural minor collector (136th Street) and in the future may require the installation of a traffic control device.

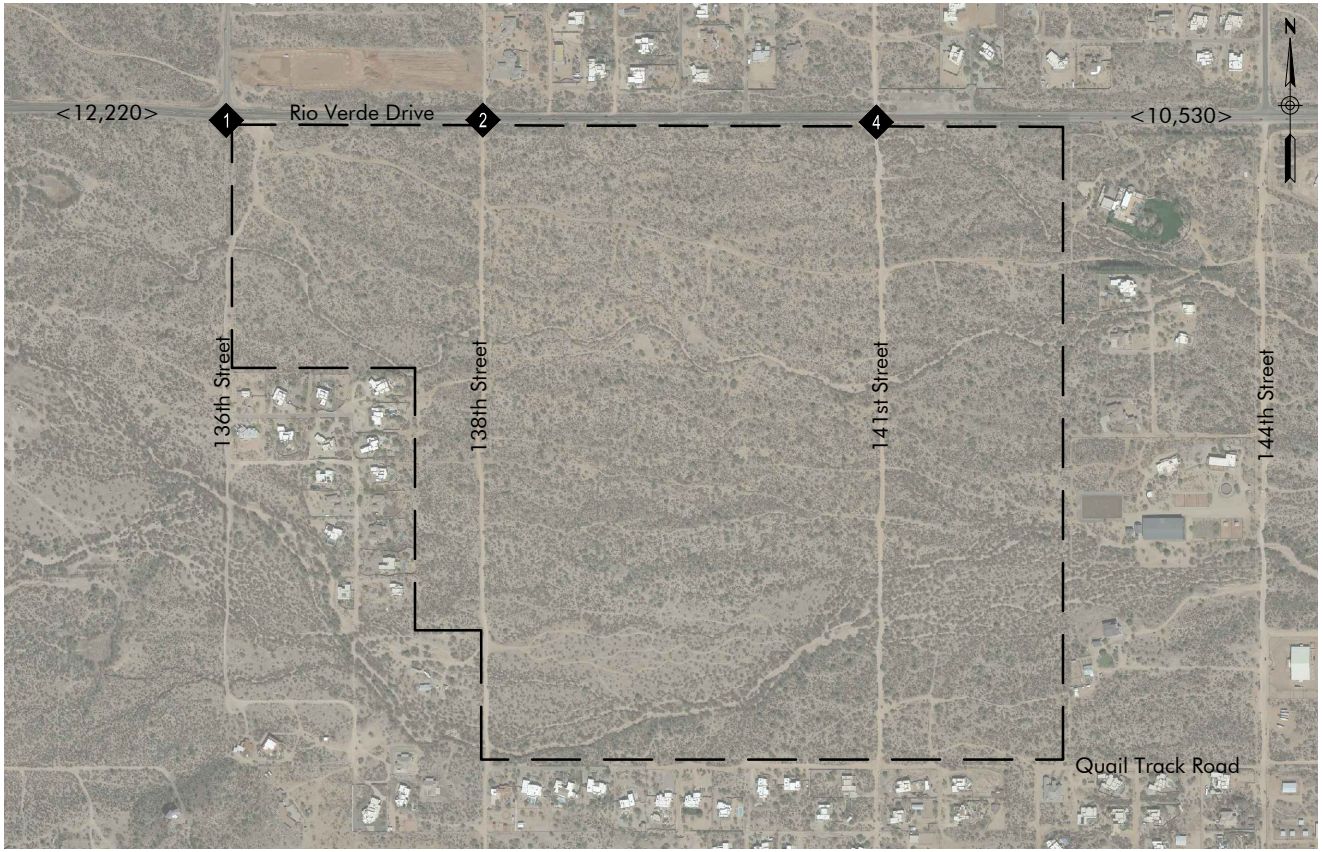
The proposed Fiesta Ranch development is providing east-west connections through the site. Should a traffic control device be installed at the intersection of Rio Verde Drive and 136th Street (1), residents will be able to use the internal roadways to access this intersection.

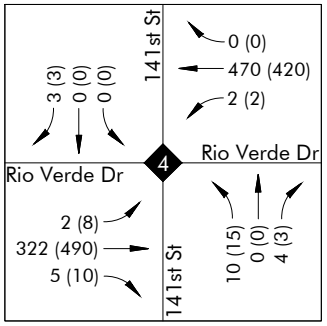
Table 7 – Year 2027 Level of Service and Delay for Unsignalized Intersections

Intersection	2027 No Build				2027 Build			
	AM PEAK		PM PEAK		AM PEAK		PM PEAK	
Unsignalized Intersections	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY
Rio Verde Drive and 136th Street (1)								
Eastbound Left	A	8.8	A	8.7	A	9.2	A	9.1
Westbound Shared Left-Through	A	0.0	A	8.6	-	-	-	-
Westbound Left	-	-	-	-	A	0.0	A	9.1
Northbound Shared Left-Through-Right	D	25.3	D	30.7	E	40.0	E	47.9
Southbound Left	C	23.9	E	35.0	D	30.3	F	51.7
Southbound Shared Through-Right	B	14.1	B	11.9	C	16.6	B	12.8
Rio Verde Drive and 138th Street (2)								
Eastbound Shared Left-Through-Right	A	8.5	A	0.0	-	-	-	-
Eastbound Shared Left-Through	-	-	-	-	A	8.7	A	0.0
Westbound Shared Left-Through-Right	A	8.0	A	0.0	-	-	-	-
Westbound Left	-	-	-	-	A	8.1	A	9.1
Northbound Shared Left-Through-Right	C	17.7	C	20.9	D	26.2	D	34.6
Southbound Shared Left-Through-Right	B	11.5	B	14.3	B	12.1	C	16.4
138th Street and Driveway A (3)								
Eastbound Shared Left-Through	-	-	-	-	A	9.3	A	9.9
Westbound Shared Left-Through-Right	-	-	-	-	A	8.6	A	8.5
Northbound Shared Left-Through-Right	-	-	-	-	A	0.0	A	0.0
Southbound Shared Left-Through-Right	-	-	-	-	A	7.3	A	7.3
Rio Verde Drive and 141st Street (4)								
Eastbound Shared Left-Through-Right	A	8.4	A	8.3	-	-	-	-
Eastbound Shared Left-Through	-	-	-	-	A	8.4	A	8.3
Westbound Shared Left-Through-Right	A	8.0	A	8.5	-	-	-	-
Westbound Left	-	-	-	-	A	8.1	A	8.8
Northbound Shared Left-Through-Right	C	16.6	C	21.7	C	23.7	D	29.4
Southbound Shared Left-Through-Right	B	11.4	B	11.0	B	11.5	B	11.1
141st Street and Driveway B (5)								
Eastbound Shared Left-Right	-	-	-	-	A	9.1	A	9.3
Northbound Shared Left-Through	-	-	-	-	A	0.0	A	0.0
141st Street and Driveway C (6)								
Westbound Shared Left-Right	-	-	-	-	A	8.6	A	8.6
Southbound Shared Left-Through	-	-	-	-	A	7.4	A	7.3
141st Street and Driveway D (7)								
Westbound Shared Left-Right	-	-	-	-	A	8.6	A	8.5
Southbound Shared Left-Through	-	-	-	-	A	7.3	A	7.3
141st Street and Driveway E (8)								
Eastbound Shared Left-Right	-	-	-	-	A	8.9	A	9.0
Northbound Shared Left-Through	-	-	-	-	A	0.0	A	0.0
141st Street and Driveway F (9)								
Eastbound Shared Left-Through-Right	-	-	-	-	A	8.7	A	8.9
Westbound Shared Left-Through-Right	-	-	-	-	A	8.4	A	8.4
Northbound Shared Left-Through-Right	-	-	-	-	A	0.0	A	0.0
Southbound Shared Left-Through-Right	-	-	-	-	A	7.2	A	7.3
136th Street and Driveway G (10)								
Westbound Shared Left-Right	-	-	-	-	A	8.4	A	8.4
Southbound Shared Left-Through	-	-	-	-	A	7.2	A	7.3





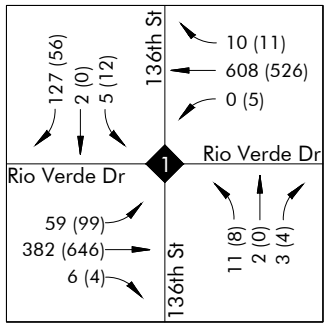


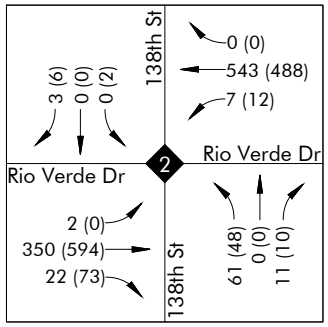


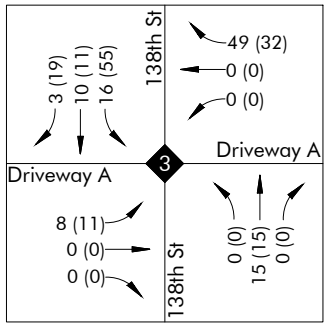
Legend

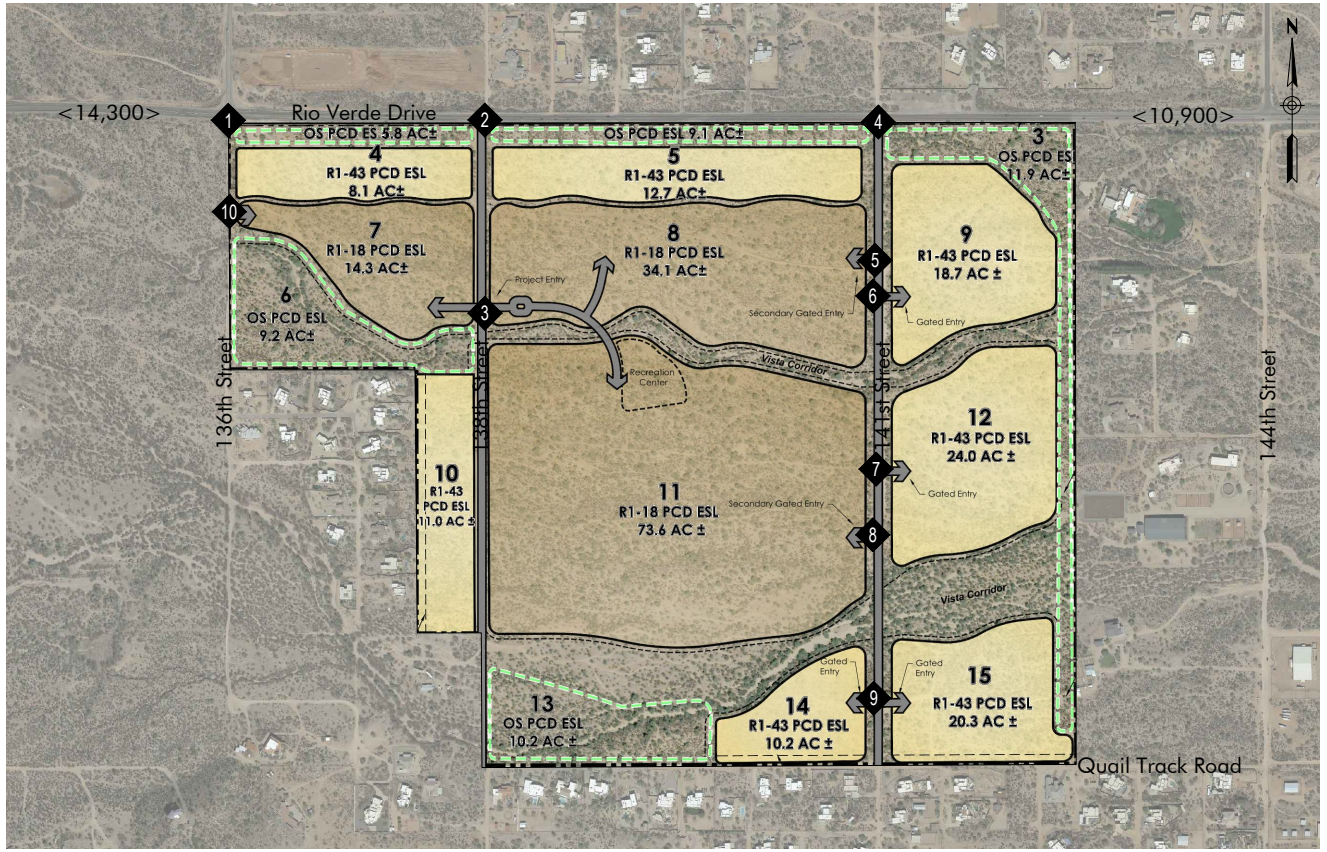
AM (PM)	Background Peak Hour Traffic Volumes
X	Intersection
<ADT>	Average Daily Traffic Volume

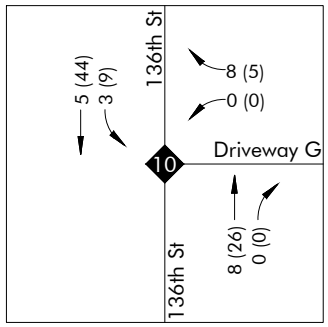
FIGURE 8 | YEAR 2027 BACKGROUND TRAFFIC VOLUMES

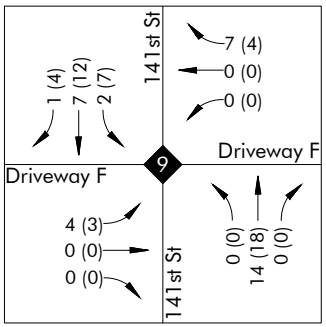


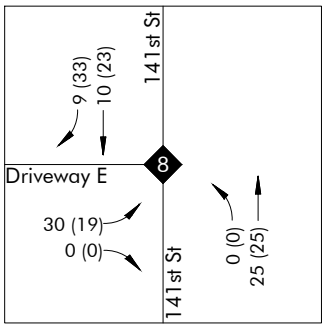


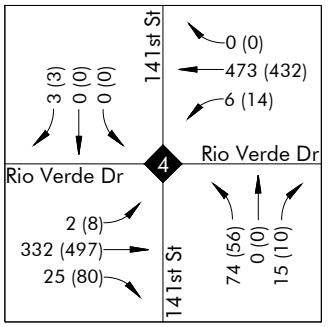


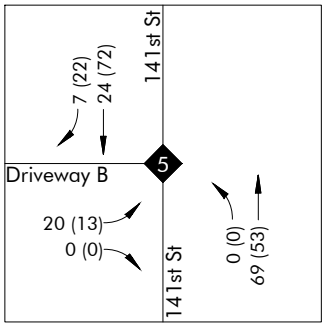


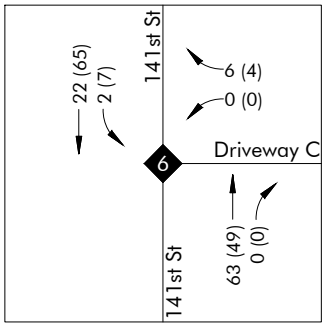


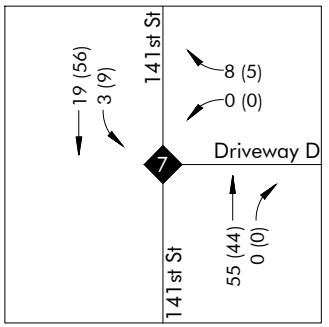








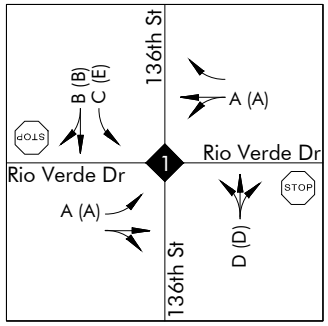


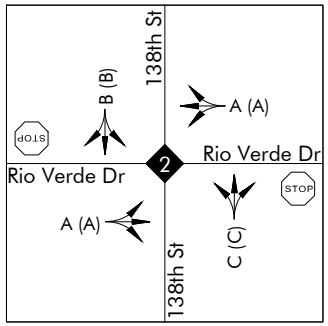


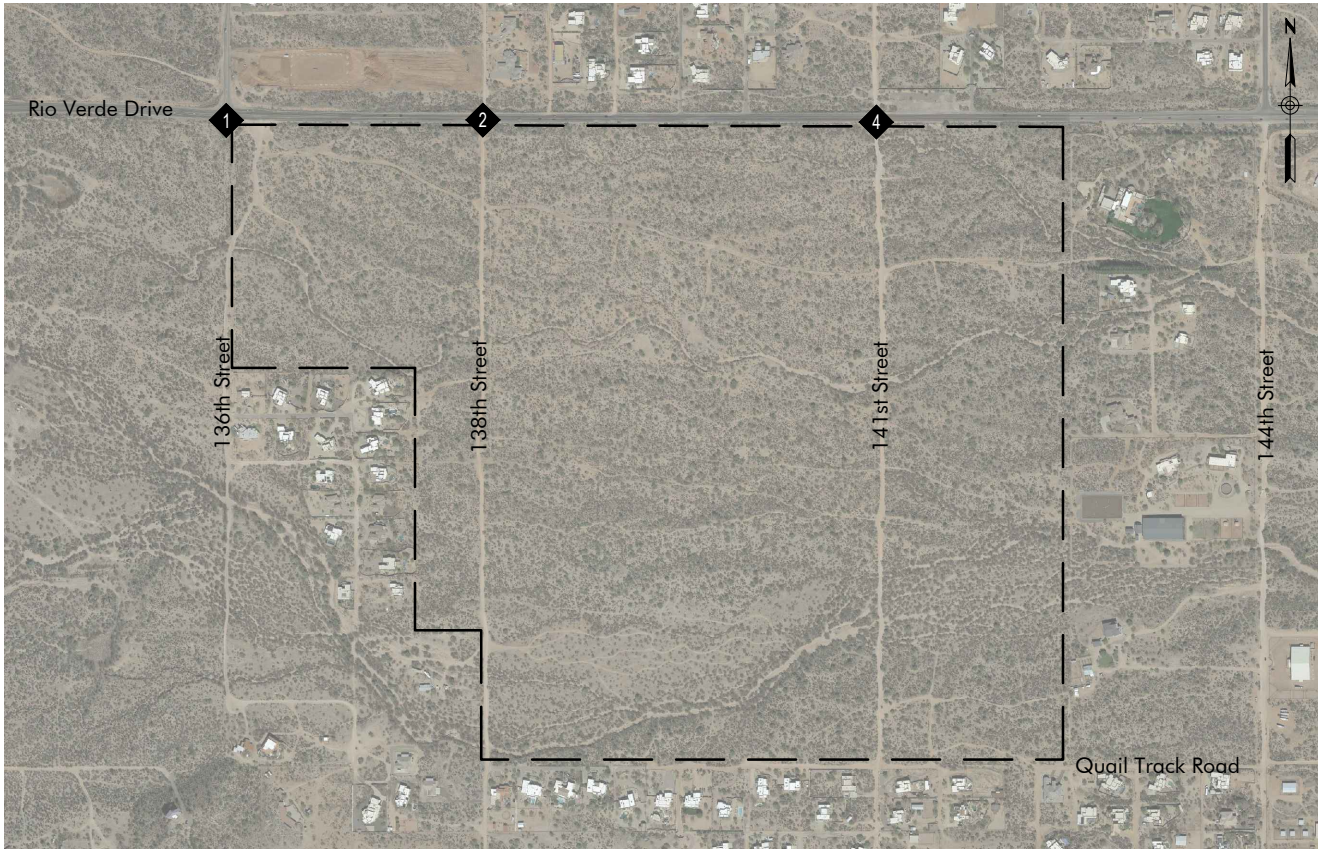
Legend

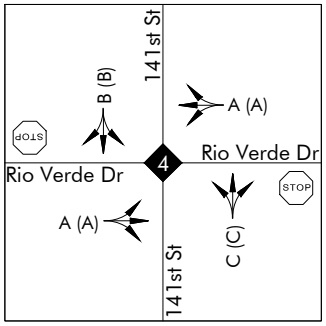
AM (PM)	Build Peak Hour Traffic Volumes
X	Intersection
<ADT>	Average Daily Traffic Volume

FIGURE 9 | YEAR 2027 BUILD TRAFFIC VOLUMES





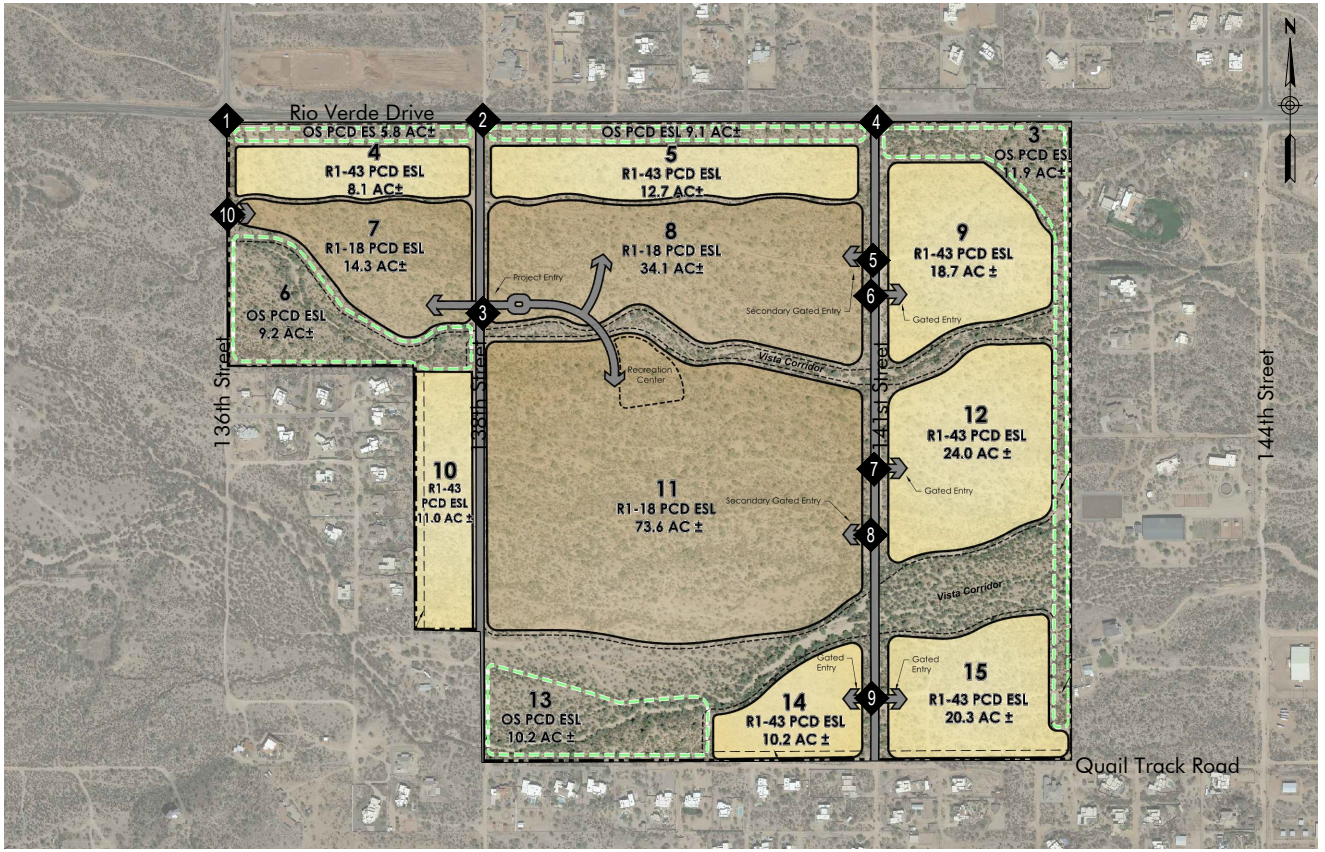


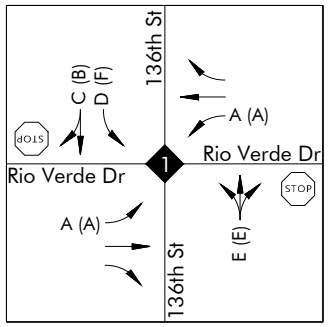


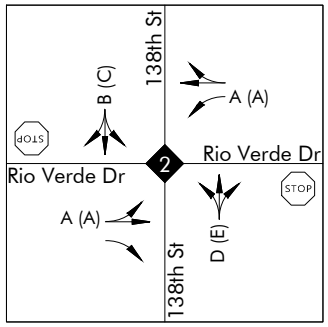
Legend

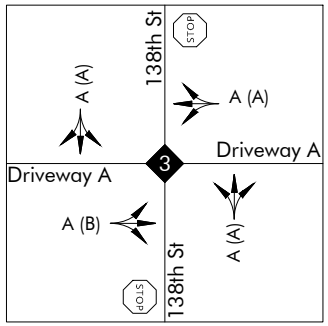
AM (PM)	No Build Peak Hour Capacity Analysis
X	Intersection
	Lane Configuration

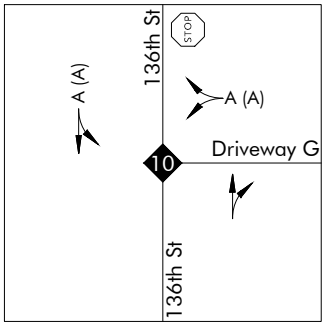
FIGURE 10 | YEAR 2027 NO BUILD CAPACITY ANALYSIS

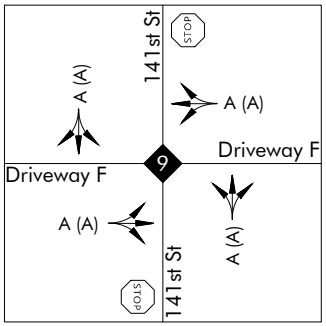


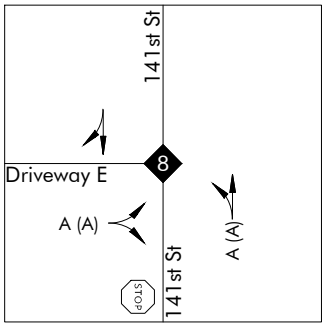


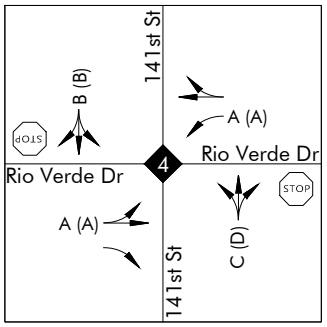


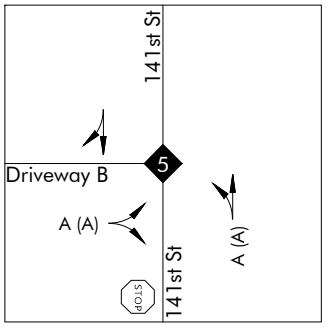


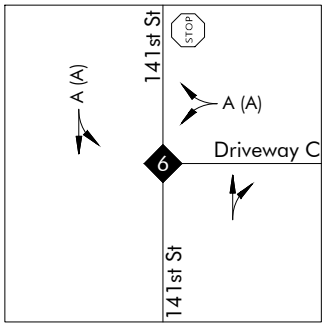


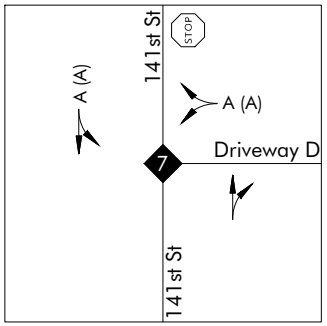












Legend

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

FIGURE 11 | YEAR 2027 BUILD CAPACITY ANALYSIS

7. TURN LANE ANALYSIS

7.1. RIGHT TURN LANE

Per the City of Scottsdale's 2018 Design Standards & Policies Manual, Section 5-3.123.E.1, auxiliary right-turn lanes at street intersections along minor arterials may be required by the Transportation Department. According to the *City of Scottsdale Transportation Master Plan*, adopted in July 2016, Rio Verde Drive is classified as a rural minor arterial. The Transportation Department has requested eastbound right turn deceleration lanes be provided at the following intersections:

- Rio Verde Drive and 136th Street (1)
- Rio Verde Drive and 138th Street (2)
- Rio Verde Drive and 141st Street (4)

The City's standard vehicle storage length for a right-turn lane is 150 feet.

7.2. LEFT TURN LANE

Per the City of Scottsdale's 2018 Design Standards & Policies Manual, Section 5-3.123.E.2, auxiliary left-turn lanes are required at all street intersections on arterials. Classified as a rural minor arterial, westbound left turn deceleration lanes shall be provided at the following intersections:

- Rio Verde Drive and 136th Street (1)
- Rio Verde Drive and 138th Street (2)
- Rio Verde Drive and 141st Street (4)

The City requires lane lengths to be determined based on the anticipated turning volume. For all of these intersections in the year 2027 build the number of westbound left turns does not exceed 14 vehicles during the PM peak hour. Based on these numbers, the City has requested a storage length of 150 feet.

8. ROADWAY IMPROVEMENTS

8.1. CROSS-SECTION

With the build out of the proposed Fiesta Ranch residential development, the following improvements to the surrounding roadway network are anticipated to be completed:

138th Street is anticipated to be built in conformance with Figure 5-3.15 of the *2018 City of Scottsdale's Design Standards & Policy Manual*. 138th Street will be classified as a local collector rural/ESL character with trails between Rio Verde Drive and the southern border of the proposed development. This cross-section will provide one (1) travel lane for each direction of travel. See **Figure 12**.

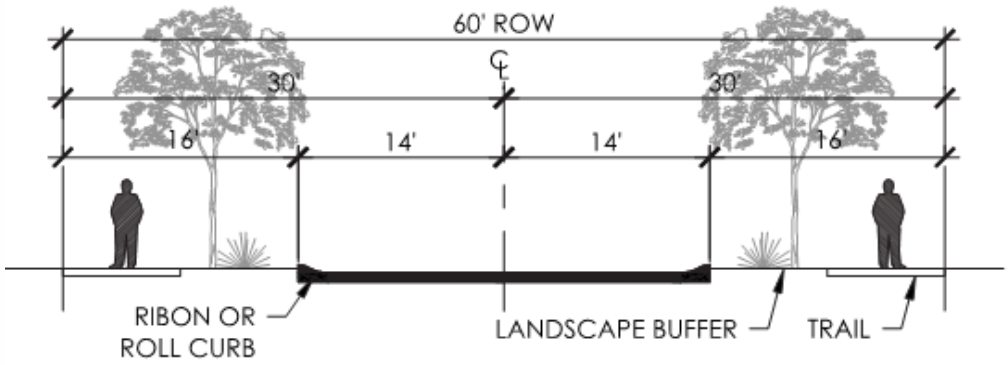


Figure 12 - 138th Street - Rural/ESL Character

141st Street is anticipated to be built in conformance with Figure 5-3.15 of the *2018 City of Scottsdale's Design Standards & Policy Manual*. 141st Street will be classified as a local collector rural/ESL character with trails between Rio Verde Drive and the southern border of the proposed development. This cross-section will provide one (1) travel lane for each direction of travel. See **Figure 13**.

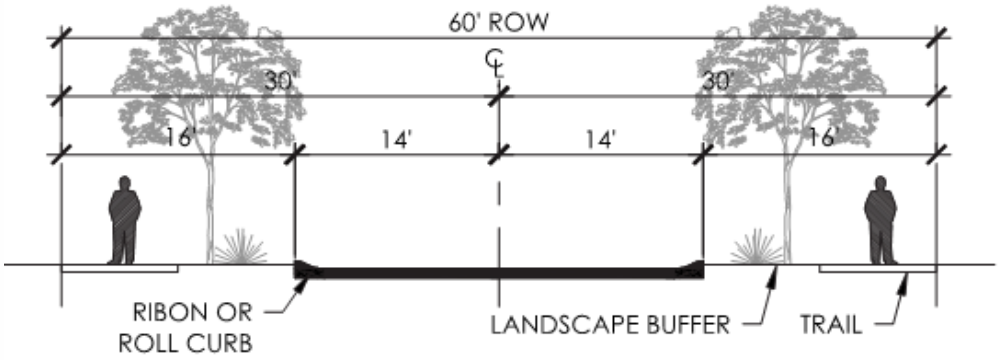


Figure 13 – 141st Street - Rural/ESL Character

8.2. PEDESTRIAN CIRCULATION

The proposed Fiesta Ranch residential development will be providing both pedestrian and bicycle circulation within the study area. These enhancements will provide connection to and from the nearby trail networks, and include the following improvements:

- Natural surface trail along Rio Verde Road, adjacent to the site
- Natural surface trail along 136th Street, adjacent to the site
- Natural surface trail along 138th Street, within the site
- Natural surface trail along 141st Street, within the site
- Additional sidewalk and trail routes will be provided interior to the development parcels and will be determined when more specific site planning is completed

See Figure 14 for the proposed pedestrian circulation plan.

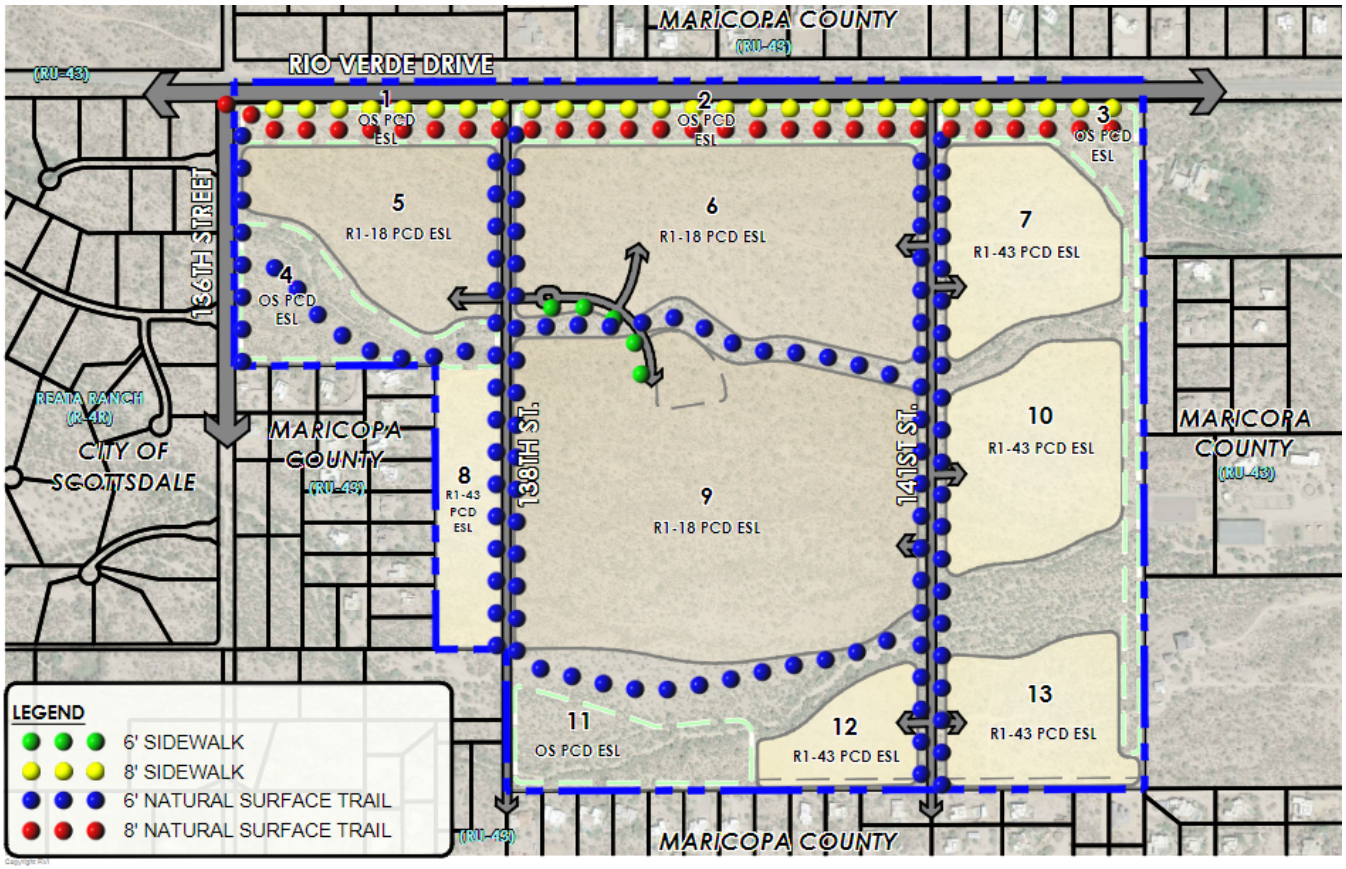


Figure 14 - Pedestrian Circulation Plan

9. RECOMMENDATIONS & CONCLUSIONS

The proposed Fiesta Ranch residential development will be comprised of 260 single-family residential dwelling units.

Existing Capacity Analysis

The AM and PM peak hour existing conditions capacity analysis were completed for three (3) existing study intersections. This existing stop-controlled intersection currently operate with a LOS D or better.

Trip Generation

The proposed development is anticipated to generate 2,454 weekday trips, with 193 trips occurring during the AM peak hour and 257 trips occurring during the PM peak hour.

Land Use	ITE Code	Qty	Units	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	260	Dwelling Units	2,454	193	48	145	257	162	95
			TOTAL	2,454	193	48	145	257	162	95

Trip Generation Comparison (Existing Zoning vs. Proposed Development)

A comparison between the trips generated by the build out under the existing R1-70 and R1-190 zoning versus the proposed 260 residential development was calculated.

Land Use	ITE Code	Qty	Units	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Single-Family Detached Housing (Existing Zoning)	210	127	Dwelling Units	1,199	94	24	71	126	79	47
			TOTAL	1,199	94	24	71	126	79	47
Single-Family Detached Housing (Proposed Development)	210	260	Dwelling Units	2,454	193	48	145	257	162	95
			TOTAL	2,454	193	48	145	257	162	95
			Difference	1,255	99	25	75	131	83	48

The proposed Fiesta Ranch residential development is anticipated to generate 1,255 more weekday daily trips, 99 more trips during the AM peak hour, and 131 more trips during the PM peak hour.

Future Conditions

Year 2027 (build out) analyses were completed without, as well as with the build out of the proposed Fiesta Ranch development. An annual growth rate of 2.0% was applied to the existing traffic volumes to create the future background traffic volumes for year 2027.

Year 2027

Capacity analyses were completed for both the AM and PM peak hours for the year 2027, without, as well as with the build out of the proposed Fiesta Ranch development. All movements at the study intersections operate at a LOS D or better during the AM and PM peak hours with the exception of the following:

Rio Verde Drive and 136th Street (1)

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

The City recognizes that this intersection is a rural minor arterial (Rio Verde Drive) with a rural minor collector (136th Street) and in the future may require the installation of a traffic control device.

The proposed Fiesta Ranch development is providing east-west connections through the site. Should a traffic control device be installed at the intersection of Rio Verde Drive and 136th Street (1), residents will be able to use the internal roadways to access this intersection.

Right Turn Lanes

Per the City of Scottsdale's 2018 Design Standards & Policies Manual, Section 5-3.123.E.1, auxiliary right-turn lanes at street intersections along minor arterials may be required by the Transportation Department. According to the *City of Scottsdale Transportation Master Plan*, adopted in July 2016, Rio Verde Drive is classified as a rural minor arterial. The Transportation Department has requested eastbound right turn deceleration lanes be provided at the following intersections:

- Rio Verde Drive and 136th Street (1)
- Rio Verde Drive and 138th Street (2)
- Rio Verde Drive and 141st Street (4)

The City's standard vehicle storage length for a right-turn lane is 150 feet.

Left Turn Lanes

Per the City of Scottsdale's 2018 Design Standards & Policies Manual, Section 5-3.123.E.2, auxiliary left-turn lanes are required at all street intersections on arterials. Classified as a rural minor arterial, westbound left turn deceleration lanes shall be provided at the following intersections:

- Rio Verde Drive and 136th Street (1)
- Rio Verde Drive and 138th Street (2)
- Rio Verde Drive and 141st Street (4)

The City requires lane lengths to be determined based on the anticipated turning volume. For all of these intersections in the year 2027 build the number of westbound left turns does not exceed 14 vehicles during the PM peak hour. Based on these numbers, the City has requested a storage length of 150 feet.

Recommendations

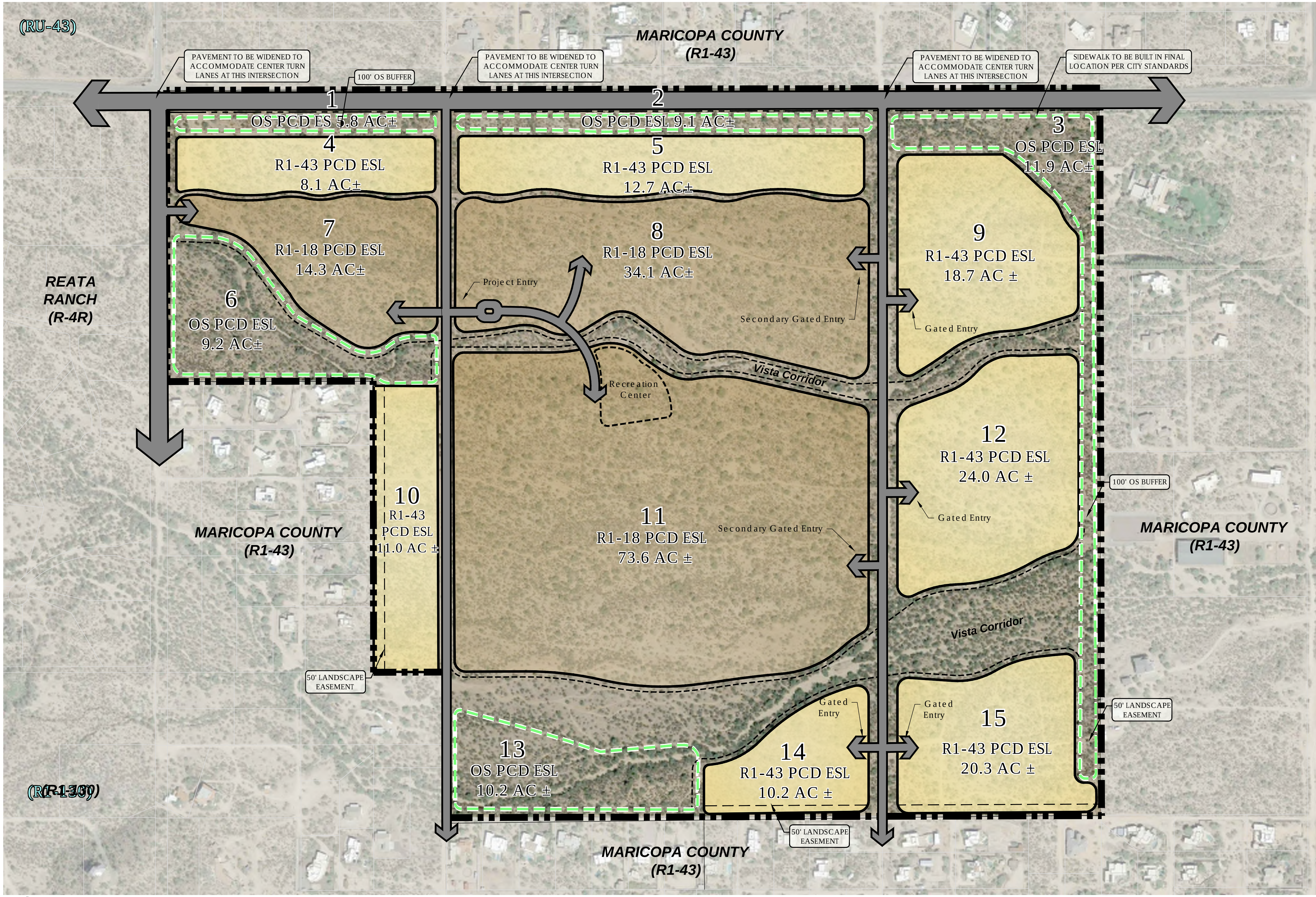
The recommendations with the build out of the proposed Fiesta Ranch residential development include:

- Rio Verde Drive and 136th Street (1)
  - Provide an eastbound right turn deceleration lane
  - Provide a westbound left turn deceleration lane

- Rio Verde Drive and 138th Street (2)
  - Provide an eastbound right turn deceleration lane
  - Provide a westbound left turn deceleration lane

- Rio Verde Drive and 141st Street (4)
  - Provide an eastbound right turn deceleration lane
  - Provide a westbound left turn deceleration lane

Appendix A – Proposed Site Plan



(RU-43)
MARICOPA COUNTY
(R1-43)
PAVEMENT TO BE WIDENED TO ACCOMMODATE CENTER TURN LANES AT THIS INTERSECTION
100' OS BUFFER
PAVEMENT TO BE WIDENED TO ACCOMMODATE CENTER TURN LANES AT THIS INTERSECTION
PAVEMENT TO BE WIDENED TO ACCOMMODATE CENTER TURN LANES AT THIS INTERSECTION
SIDEWALK TO BE BUILT IN FINAL LOCATION PER CITY STANDARDS
1
2
OS PCD ES 5.8 AC±
OS PCD ESL 9.1 AC±
3
OS PCD ESL 11.9 AC±
4
R1-43 PCD ESL 8.1 AC±
5
R1-43 PCD ESL 12.7 AC±
7
R1-18 PCD ESL 14.3 AC±
8
R1-18 PCD ESL 34.1 AC±
9
R1-43 PCD ESL 18.7 AC ±
6
OS PCD ESL 9.2 AC±
REATA RANCH
(R-4R)
Project Entry
Secondary Gated Entry
Gated Entry
Recreation Center
Vista Corridor
12
R1-43 PCD ESL 24.0 AC ±
100' OS BUFFER
Gated Entry
10
R1-43 PCD ESL 11.0 AC ±
11
R1-18 PCD ESL 73.6 AC ±
Secondary Gated Entry
MARICOPA COUNTY
(R1-43)
MARICOPA COUNTY
(R1-43)
Vista Corridor
50' LANDSCAPE EASEMENT
Gated Entry
Gated Entry
50' LANDSCAPE EASEMENT
13
OS PCD ESL 10.2 AC ±
14
R1-43 PCD ESL 10.2 AC ±
15
R1-43 PCD ESL 20.3 AC ±
50' LANDSCAPE EASEMENT
MARICOPA COUNTY
(R1-43)

DATA TABLE

SITE AREA BY ZONING DISTRICT:

LAND USE BUDGET

Development Land Use Budget					
Parcel #	PCD Base Zoning	Gross Area (Acres)	Max. Density per E.S.L.	Max. # Allowed Units	Target # Allowed Units
1	OS	5.8	0	0	0
2	OS	9.1	0	0	0
3	OS	11.9	0	0	0
4	R1-43	8.1	0.83	7	6
5	R1-43	12.7	0.83	11	10
6	OS	9.2	0	0	0
7	R1-18	14.3	1.87	27	22
8	R1-18	34.1	1.87	64	60
9	R1-43	18.7	0.83	16	11
10	R1-43	11	0.83	9	9
11	R1-18	73.6	1.87	138	108
12	R1-43	24	0.83	20	15
13	OS	10.2	0	0	0
14	R1-43	10.2	0.83	8	7
15	R1-43	20.3	0.83	17	12
Total:		273.2			260

Note: The maximum number of units provided within Fiesta Ranch is not to exceed 260. Units may be moved from one parcel to another so long as the total number of units for that parcel does not exceed the maximum number of allowed units per the parcel's E.S.L. zoning category

NOTES

RVi

• CONCEPTUAL DEVELOPMENT PLAN

Appendix B – Crash Data

CITY OF SCOTTSDALE '15 -'16 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
16-24847	161107	1426	LONE MOUNTAIN	PY	CAVE CREEK	RD	N	740	4		99		13		1		SB		1	
15-09692	150427	1215	128	ST	RANCH GATE	RD	S	300	1	1	0	0	1	1	1	1	SB	NB	7	
16-25447	161115	0600	118	ST	RIO VERDE	DR	AT		1	1	0	0	20	1	4	1	NB	WB	3	
16-22636	161010	0326	138	ST	RIO VERDE	DR	AT		1		0		2		1		EB		97	
16-22290	161005	0939	136	ST	RIO VERDE	DR	AT		1	1	0	0	2	1	1	3	SB	SB	4	
16-19557	160831	1900	136	ST	RIO VERDE	DR	AT		1	1	0	0	20	1	4	1	NB	WB	3	
16-14293	160622	0944	114	ST	RIO VERDE	DR	AT		1	1	0	0	20	1	1	1	NB	EB	2	
16-12169	160526	1531	136	ST	RIO VERDE	DR	AT		1	1	0	0	20	1	4	4	SB	NB	3	
16-05970	160312	1412	128	ST	RIO VERDE	DR	AT		1	1	0	0	2	1	1	6	EB	SB	4	
15-13591	150617	1438	136	ST	RIO VERDE	DR	AT		2		1		1		1		EB		1	
15-07861	150405	0752	138	ST	RIO VERDE	DR	AT		3	3	0	0	2	1	1	2	EB	EB	4	
16-07906	160403	1733	141	WY	RIO VERDE	DR	W	115	99	3	4	0	2	1	7	1	WB	WB	4	
15-15739	150717	0129	120	ST	RIO VERDE	DR	E	170	1		0		1		1		EB		1	
16-06891	160323	0654	122	ST	RIO VERDE		W	231	1	1	0	0	4	1	1	2	WB	WB	4	
15-00899	150112	1455	LONE MOUNTAIN	PY	STANDING STONES	RD	W	200	4	4	0	0		1	1	1	SB	WB	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

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 15

CITY OF SCOTTSDALE '17 -'18 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
1711737	170525	0030	116	ST	RIO VERDE	DR	AT		1		0		1		1		EB		1	
1807399	180402	2013	118	ST	RIO VERDE	DR	AT		1		0		1		1		EB		97	
1703836	170216	0447	118	ST	RIO VERDE	DR	AT		2	1	0	0	97		4	1	EB	WB	3	
1801172	180116	0940	120	ST	RIO VERDE	DR	AT		2	3	0	0	2	1	1	3	WB	WB	4	
1726384	171129	0617	120	ST	RIO VERDE	DR	E	500	1		0		1		1		WB		1	
1701844	170124	1037	122	ST	RIO VERDE	DR	E	892	1	1	1	0	15	1	7	1	EB	EB	7	
1705403	170307	1241	136	ST	RIO VERDE	DR	N	35	1	1	0	0		1	5	3	SB	SB	4	
1808150	180412	0623	141	ST	RIO VERDE	DR	W	145	3	2	0	0	2	1	1	3	EB	EB	4	
1800738	180111	0751	LONE MOUNTAIN	PY	CAVE CREEK	RD	W	55	2	2	0	0	7	1	6	1	SB	WB	2	
1809406	180427	1001	LONE MOUNTAIN	PY	STANDING STONES	RD	AT		1	1	0	0	97	1	10	3	SB	NB	4	

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

KEY

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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

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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 10

Appendix C – Parcel Information

219-39-010G Agriculture Parcel

This is a agriculture parcel and the current owner is WILDCAT RIDGE LLC. Its current year full cash value is $293.

Property Information

MCR #	
Description:	E 329.02F OF LOTS 1 & 2 EX N 100F RD
Lat/Long	
Lot Size	850,291 sq ft.
Zoning	R1-190
Lot #	
High School District	CAVE CREEK UNIFIED #93
Elementary School District	CAVE CREEK UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	31 5N 6E
Market Area/Neighborhood	07/005
Subdivision (0 Parcels)	

Owner Information

WILDCAT RIDGE LLC

Mailing Address	14901 N SCOTTSDALE RD STE 201 , SCOTTSDALE, AZ 85254
Deed Number	050667016
Last Deed Date	05/19/2005
Sale Date	n/a
Sale Price	n/a

Valuation Information

We provide valuation information for the past 5 years. For mobile display, we only show 1 year of valuation information. Should you need more data, please look at our data sales.
The Valuation Information displayed below may not reflect the taxable value used on the tax bill due to any special valuation relief program. **CLICK HERE TO PAY YOUR TAXES OR VIEW YOUR TAX BILL**

Tax Year	2018	2017	2016	2015	2014
Full Cash Value	$293	$1,171	$1,366	$1,366	$1,562
Limited Property Value	$293	$1,171	$1,366	$1,366	$1,421
Legal Class	2	2	2	2	2
Description	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P
Assessment Ratio	15%	15%	15%	16%	16%
Assessed FCV	n/a	n/a	n/a	n/a	$250
Assessed LPV	$44	$176	$205	$219	$227
Property Use Code	4710	4710	4710	4710	4710
PU Description	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL
Tax Area Code	931400	931400	931400	931400	931400
Valuation Source	Notice	Notice	Notice	Decision	Notice

Similar Parcels

Parcels that are similar to this one (known as the reference parcel) are displayed below.

APN Address Sale Info FCV Size Livable Sq Ft Year Built Pool Foreclosed

219-39-010M Agriculture Parcel

This is a agriculture parcel located at 13701 E RIO VERDE DR SCOTTSDALE 85262. and the current owner is WILDCAT RIDGE LLC. Its current year full cash value is $846.

Property Information

13701 E RIO VERDE DR SCOTTSDALE 85262

MCR #	
Description:	TH W2 OF LOT 1 EX N 100F RD & EX W 55F RD
Lat/Long	33.74128852 | -111.78581319
Lot Size	737,035 sq ft.
Zoning	R1-70
Lot #	
High School District	CAVE CREEK UNIFIED #93
Elementary School District	CAVE CREEK UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	31 5N 6E
Market Area/Neighborhood	07/005
Subdivision (0 Parcels)	

Owner Information

WILDCAT RIDGE LLC

Mailing Address	14901 N SCOTTSDALE RD STE 201 , SCOTTSDALE, AZ 85254
Deed Number	050667016
Last Deed Date	05/19/2005
Sale Date	n/a
Sale Price	n/a

Valuation Information

We provide valuation information for the past 5 years. For mobile display, we only show 1 year of valuation information. Should you need more data, please look at our data sales.
The Valuation Information displayed below may not reflect the taxable value used on the tax bill due to any special valuation relief program. **CLICK HERE TO PAY YOUR TAXES OR VIEW YOUR TAX BILL**

Tax Year	2018	2017	2016	2015	2014
Full Cash Value	$846	$1,015	$1,184	$1,184	$1,354
Limited Property Value	$846	$1,015	$1,184	$1,184	$1,232
Legal Class	2	2	2	2	2
Description	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P
Assessment Ratio	15%	15%	15%	16%	16%
Assessed FCV	n/a	n/a	n/a	n/a	$217
Assessed LPV	$127	$152	$178	$189	$197
Property Use Code	4710	4710	4710	4710	4710
PU Description	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL
Tax Area Code	931400	931400	931400	931400	931400
Valuation Source	Notice	Notice	Notice	Decision	Notice

Similar Parcels

Parcels that are similar to this one (known as the reference parcel) are displayed below.

APN Address Sale Info FCV Size Livable Sq Ft Year Built Pool Foreclosed

219-39-010N Agriculture Parcel

This is a agriculture parcel and the current owner is WILDCAT RIDGE LLC. Its current year full cash value is $462.

Property Information

MCR #	
Description:	TH E2 LOT 1 SEC 31 T5N R6E EX TH E 329.02F TH/OF & EX N 100F RD
Lat/Long	
Lot Size	402,494 sq ft.
Zoning	R1-70
Lot #	
High School District	CAVE CREEK UNIFIED #93
Elementary School District	CAVE CREEK UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	31 5N 6E
Market Area/Neighborhood	07/005
Subdivision (0 Parcels)	

Owner Information

WILDCAT RIDGE LLC

Mailing Address	14901 N SCOTTSDALE RD STE 201 , SCOTTSDALE, AZ 85254
Deed Number	050667016
Last Deed Date	05/19/2005
Sale Date	n/a
Sale Price	n/a

Valuation Information

We provide valuation information for the past 5 years. For mobile display, we only show 1 year of valuation information. Should you need more data, please look at our data sales.
The Valuation Information displayed below may not reflect the taxable value used on the tax bill due to any special valuation relief program. **CLICK HERE TO PAY YOUR TAXES OR VIEW YOUR TAX BILL**

Tax Year	2018	2017	2016	2015	2014
Full Cash Value	$462	$554	$647	$647	$739
Limited Property Value	$462	$554	$647	$647	$672
Legal Class	2	2	2	2	2
Description	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P
Assessment Ratio	14.9%	15%	15%	16.1%	16%
Assessed FCV	n/a	n/a	n/a	n/a	$118
Assessed LPV	$69	$83	$97	$104	$108
Property Use Code	4710	4710	4710	4710	4710
PU Description	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL
Tax Area Code	931400	931400	931400	931400	931400
Valuation Source	Notice	Notice	Notice	Decision	Notice

Similar Parcels

Parcels that are similar to this one (known as the reference parcel) are displayed below.

APN Address Sale Info FCV Size Livable Sq Ft Year Built Pool Foreclosed

219-39-010P Agriculture Parcel

This is a agriculture parcel and the current owner is WILDCAT RIDGE LLC. Its current year full cash value is $3,635.

Property Information

MCR #	
Description:	TH PT E2 SEC DAF BEG NE COR SEC TH S 5279.03F TO SE COR SEC TH W 1981.58F TH N 5281.95F TO PT ON N LN SEC TH E ALG SD N LN 1978.36F TO POB EX E2 E2 NE4 & EX E2 W2 E2 NE4 & EX NE4 NE4 SE4 & EX E2 NW4 NE4 SE4 & EX SE4 SE4 & EX E2 SW4 SE4 & EX S2 NE4 SE4 & EX SE4 NW4 SE4 & EX N 100F RD
Lat/Long	
Lot Size	3,166,376 sq ft.
Zoning	R1-190
Lot #	
High School District	CAVE CREEK UNIFIED #93
Elementary School District	CAVE CREEK UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	31 5N 6E
Market Area/Neighborhood	07/005
Subdivision (0 Parcels)	

Owner Information

WILDCAT RIDGE LLC

Mailing Address	14901 N SCOTTSDALE RD STE 201 , SCOTTSDALE, AZ 85254
Deed Number	050667016
Last Deed Date	05/19/2005
Sale Date	n/a
Sale Price	n/a

Valuation Information

We provide valuation information for the past 5 years. For mobile display, we only show 1 year of valuation information. Should you need more data, please look at our data sales.
The Valuation Information displayed below may not reflect the taxable value used on the tax bill due to any special valuation relief program. **CLICK HERE TO PAY YOUR TAXES OR VIEW YOUR TAX BILL**

Tax Year	2018	2017	2016	2015	2014
Full Cash Value	$3,635	$4,361	$5,088	$5,088	$5,815
Limited Property Value	$3,635	$4,361	$5,088	$5,088	$5,292
Legal Class	2	2	2	2	2
Description	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P
Assessment Ratio	15%	15%	15%	16%	16%
Assessed FCV	n/a	n/a	n/a	n/a	$930
Assessed LPV	$545	$654	$763	$814	$847
Property Use Code	4710	4710	4710	4710	4710
PU Description	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL
Tax Area Code	931400	931400	931400	931400	931400
Valuation Source	Notice	Notice	Notice	Notice	Notice

Similar Parcels

Parcels that are similar to this one (known as the reference parcel) are displayed below.

APN Address Sale Info FCV Size Livable Sq Ft Year Built Pool Foreclosed

219-39-010U Agriculture Parcel

This is a agriculture parcel and the current owner is WILDCAT RIDGE LLC. Its current year full cash value is $3,634.

Property Information

MCR #	
Description:	W2 E2 NW4 & W2 E2 E2 NW4 & NW4 NE4 SW4 & W2 NE4 NE4 SW4 & EX N 100F
Lat/Long	
Lot Size	3,165,941 sq ft.
Zoning	R1-70
Lot #	
High School District	CAVE CREEK UNIFIED #93
Elementary School District	CAVE CREEK UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	31 5N 6E
Market Area/Neighborhood	07/005
Subdivision (0 Parcels)	

Owner Information

WILDCAT RIDGE LLC

Mailing Address	14901 N SCOTTSDALE RD STE 201 , SCOTTSDALE, AZ 85254
Deed Number	050667016
Last Deed Date	05/19/2005
Sale Date	n/a
Sale Price	n/a

Valuation Information

We provide valuation information for the past 5 years. For mobile display, we only show 1 year of valuation information. Should you need more data, please look at our data sales.
The Valuation Information displayed below may not reflect the taxable value used on the tax bill due to any special valuation relief program. **CLICK HERE TO PAY YOUR TAXES OR VIEW YOUR TAX BILL**

Tax Year	2018	2017	2016	2015	2014
Full Cash Value	$3,634	$4,361	$5,088	$5,088	$5,814
Limited Property Value	$3,634	$4,361	$5,088	$5,088	$5,291
Legal Class	2	2	2	2	2
Description	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P
Assessment Ratio	15%	15%	15%	16%	16%
Assessed FCV	n/a	n/a	n/a	n/a	$930
Assessed LPV	$545	$654	$763	$814	$847
Property Use Code	4710	4710	4710	4710	4710
PU Description	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL
Tax Area Code	931400	931400	931400	931400	931400
Valuation Source	Notice	Notice	Notice	Notice	Notice

Similar Parcels

Parcels that are similar to this one (known as the reference parcel) are displayed below.

APN Address Sale Info FCV Size Livable Sq Ft Year Built Pool Foreclosed

219-39-010V Agriculture Parcel

This is a agriculture parcel and the current owner is WILDCAT RIDGE LLC. Its current year full cash value is $3,634.

Property Information

MCR #	
Description:	W2 W2 NE4 & NW4 NW4 SE4 & E2 E2 E2 NW4 & E2 NE4 NE4 SW4 & EX N 100F
Lat/Long	
Lot Size	3,165,941 sq ft.
Zoning	R1-70
Lot #	
High School District	CAVE CREEK UNIFIED #93
Elementary School District	CAVE CREEK UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	31 5N 6E
Market Area/Neighborhood	07/005
Subdivision (0 Parcels)	

Owner Information

WILDCAT RIDGE LLC

Mailing Address	14901 N SCOTTSDALE RD STE 201 , SCOTTSDALE, AZ 85254
Deed Number	050667016
Last Deed Date	05/19/2005
Sale Date	n/a
Sale Price	n/a

Valuation Information

We provide valuation information for the past 5 years. For mobile display, we only show 1 year of valuation information. Should you need more data, please look at our data sales.
The Valuation Information displayed below may not reflect the taxable value used on the tax bill due to any special valuation relief program. **CLICK HERE TO PAY YOUR TAXES OR VIEW YOUR TAX BILL**

Tax Year	2018	2017	2016	2015	2014
Full Cash Value	$3,634	$4,361	$5,088	$5,088	$5,814
Limited Property Value	$3,634	$4,361	$5,088	$5,088	$5,291
Legal Class	2	2	2	2	2
Description	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P
Assessment Ratio	15%	15%	15%	16%	16%
Assessed FCV	n/a	n/a	n/a	n/a	$930
Assessed LPV	$545	$654	$763	$814	$847
Property Use Code	4710	4710	4710	4710	4710
PU Description	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL	AGRICULTURAL
Tax Area Code	931400	931400	931400	931400	931400
Valuation Source	Notice	Notice	Notice	Notice	Notice

Similar Parcels

Parcels that are similar to this one (known as the reference parcel) are displayed below.

APN Address Sale Info FCV Size Livable Sq Ft Year Built Pool Foreclosed

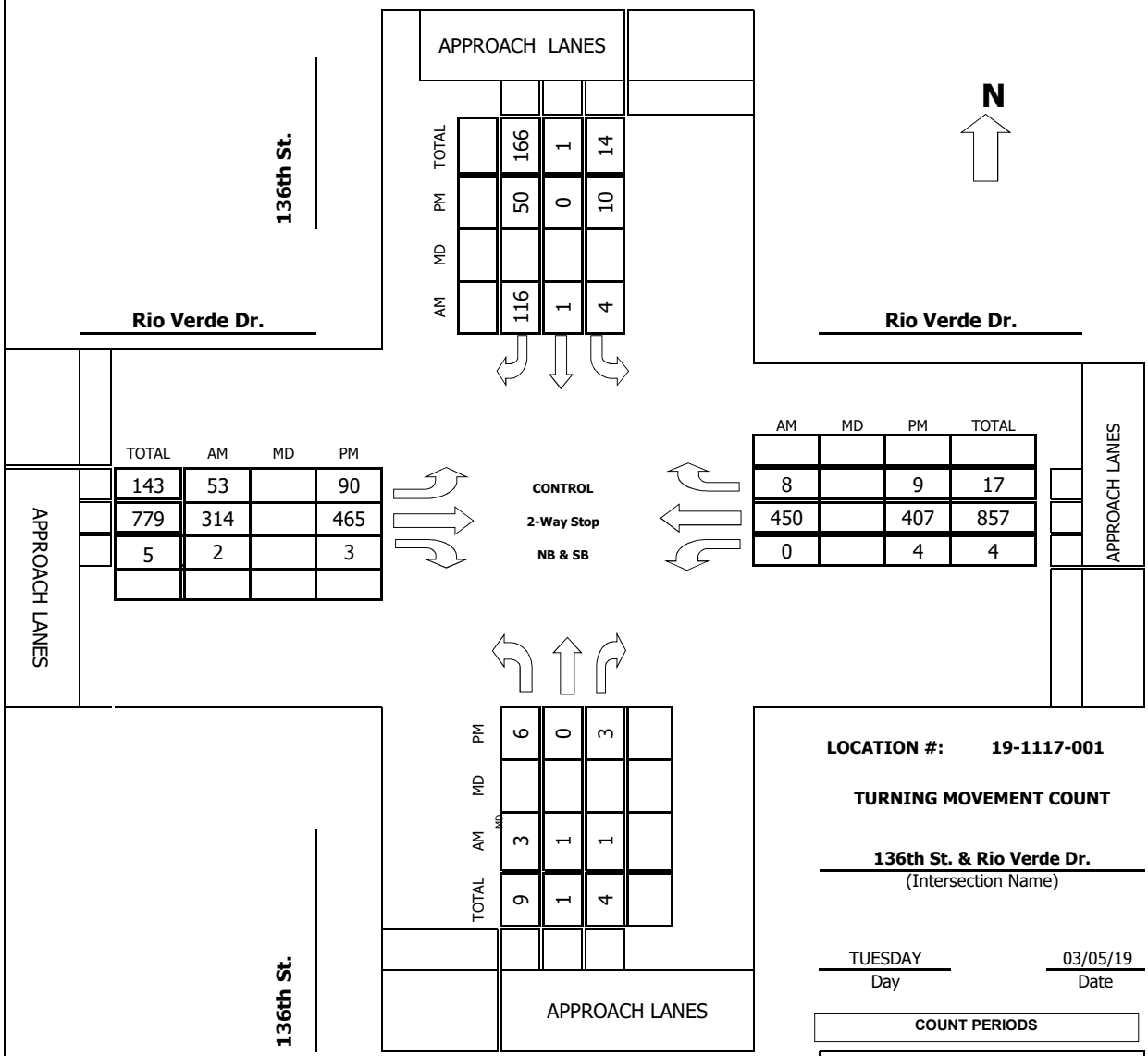
Appendix D – Traffic Count Data

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1117-001

TMC SUMMARY OF 136th St. & Rio Verde Dr.



LOCATION #: 19-1117-001

TURNING MOVEMENT COUNT

136th St. & Rio Verde Dr.
(Intersection Name)

TUESDAY (Day) 03/05/19 (Date)

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

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 400 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	136th St.	DATE:	03/05/19	LOCATION:	Scottsdale
E-W STREET:	Rio Verde Dr.	DAY:	TUESDAY	PROJECT#	19-1117-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	1	0	0	1	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	0	0	1	0	25	5	72	0	0	111	3	218
7:15 AM	1	0	0	1	0	23	8	80	0	0	119	2	234
7:30 AM	1	0	0	0	0	36	13	82	0	0	115	1	248
7:45 AM	1	0	0	1	0	28	11	82	0	0	104	1	228
8:00 AM	0	0	0	0	0	22	15	54	0	0	119	2	212
8:15 AM	1	1	1	3	1	30	14	96	2	0	112	4	265
8:30 AM	0	0	1	1	0	20	14	83	1	0	109	4	233
8:45 AM	1	0	0	1	0	16	18	70	0	0	112	4	222
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	6	1	2	8	1	200	98	619	3	0	901	21	1860
Approach %	66.67	11.11	22.22	3.83	0.48	95.69	13.61	85.97	0.42	0.00	97.72	2.28	
App/Depart	9	/	120	209	/	4	720	/	629	922	/	1107	

AM Peak Hr Begins at: 730 AM

PEAK													
Volumes	3	1	1	4	1	116	53	314	2	0	450	8	953
Approach %	60.00	20.00	20.00	3.31	0.83	95.87	14.36	85.09	0.54	0.00	98.25	1.75	
PEAK HR. FACTOR:		0.417			0.840			0.824			0.946		0.899

CONTROL: 2-Way Stop (NB & SB)
COMMENT 1:
GPS: 33.741346, -111.786899

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	136th St.	DATE:	03/05/19	LOCATION:	Scottsdale
	0				
E-W STREET:	Rio Verde Dr.	DAY:	TUESDAY	PROJECT#	19-1117-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	1	0	0	1	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	1	1	0	18	28	117	0	1	120	3	289
4:15 PM	1	0	2	3	0	12	23	110	0	2	103	2	258
4:30 PM	2	0	0	3	0	10	19	119	2	1	94	1	251
4:45 PM	3	0	0	3	0	10	20	119	1	0	90	3	249
5:00 PM	1	0	0	1	0	14	31	116	0	1	91	1	256
5:15 PM	3	0	0	3	0	8	35	128	0	0	70	3	250
5:30 PM	1	0	1	1	0	13	19	111	2	0	70	6	224
5:45 PM	0	0	0	1	0	7	20	104	0	1	58	1	192
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	11	0	4	16	0	92	195	924	5	6	696	20	1969
Approach %	73.33	0.00	26.67	14.81	0.00	85.19	17.35	82.21	0.44	0.83	96.40	2.77	
App/Depart	15	/	215	108	/	11	1124	/	944	722	/	799	

PM Peak Hr Begins at: 400 PM

PEAK													
Volumes	6	0	3	10	0	50	90	465	3	4	407	9	1047
Approach %	66.67	0.00	33.33	16.67	0.00	83.33	16.13	83.33	0.54	0.95	96.90	2.14	
PEAK HR. FACTOR:		0.750			0.789			0.962			0.847		0.906

CONTROL:	2-Way Stop (NB & SB)
COMMENT 1:	0
GPS:	33.741346, -111.786899

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: 136th St.
E-W STREET: Rio Verde Dr.

Date: 03/05/19
Day: TUESDAY

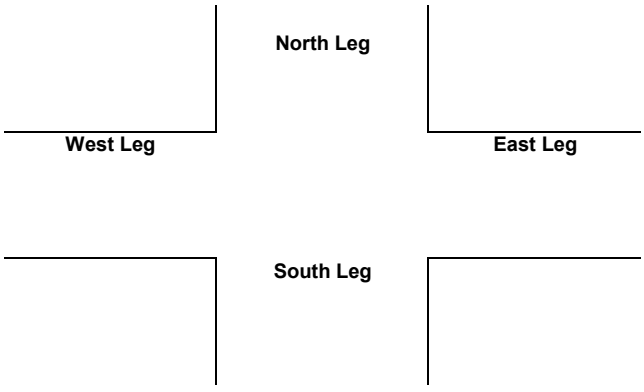
City: Scottsdale
Project #: 19-1117-001

	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	1	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	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	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**

	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**

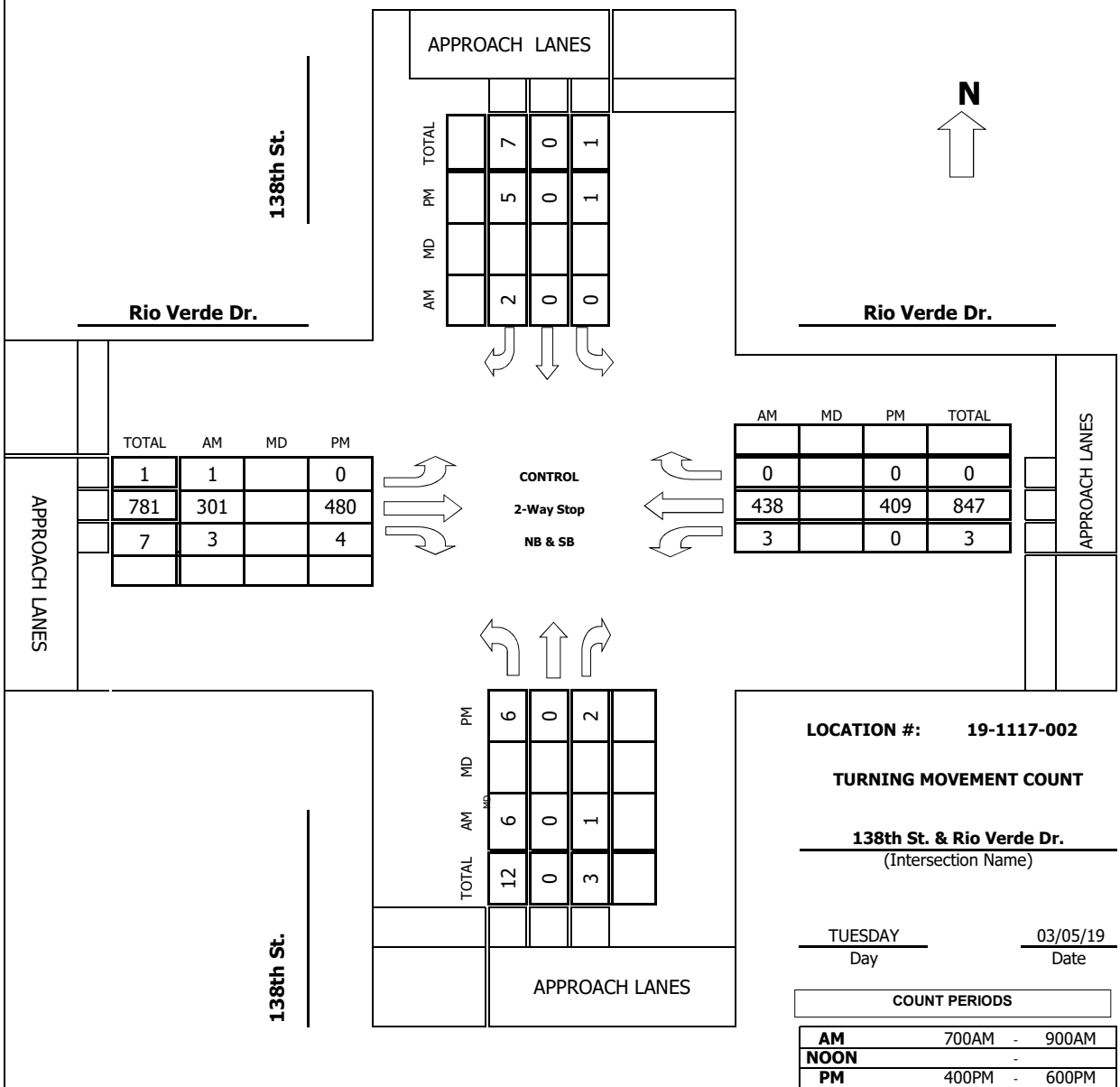


Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1117-002

TMC SUMMARY OF 138th St. & Rio Verde Dr.



LOCATION #: 19-1117-002

TURNING MOVEMENT COUNT

138th St. & Rio Verde Dr.
(Intersection Name)

TUESDAY (Day) 03/05/19 (Date)

COUNT PERIODS

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

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 400 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	138th St.	DATE:	03/05/19	LOCATION:	Scottsdale
E-W STREET:	Rio Verde Dr.	DAY:	TUESDAY	PROJECT#	19-1117-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	2	0	1	0	0	2	0	81	1	1	119	0	
7:15 AM	1	0	1	0	0	1	0	79	0	1	109	1	
7:30 AM	4	0	1	0	0	1	0	83	0	2	109	0	200
7:45 AM	1	0	0	0	0	0	1	71	2	0	95	0	170
8:00 AM	1	0	0	0	0	1	0	67	0	0	129	0	198
8:15 AM	0	0	0	0	0	0	0	80	1	1	105	0	187
8:30 AM	1	0	0	0	0	0	1	89	1	0	119	0	
8:45 AM	2	0	1	0	0	1	0	82	0	1	110	0	197
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	12	0	4	0	0	6	2	632	5	6	895	1	1563
Approach %	75.00	0.00	25.00	0.00	0.00	100.00	0.31	98.90	0.78	0.67	99.22	0.11	
App/Depart	16	/	3	6	/	11	639	/	636	902	/	913	

AM Peak Hr Begins at: 730 AM

PEAK													
Volumes	6	0	1	0	0	2	1	301	3	3	438	0	755
Approach %	85.71	0.00	14.29	0.00	0.00	100.00	0.33	98.69	0.98	0.68	99.32	0.00	
PEAK HR. FACTOR:		0.350			0.500			0.919			0.855		0.944

CONTROL: 2-Way Stop (NB & SB)
COMMENT 1:
GPS: 33.741276, -111.782629

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	138th St. 0	DATE:	03/05/19	LOCATION:	Scottsdale
E-W STREET:	Rio Verde Dr.	DAY:	TUESDAY	PROJECT#	19-1117-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
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	1	0	1	0	0	3	0	115	1	0	112	0	233
4:15 PM	4	0	0	0	0	1	0	125	2	0	104	0	236
4:30 PM	1	0	1	0	0	1	0	112	0	0	100	0	215
4:45 PM	0	0	0	1	0	0	0	128	1	0	93	0	223
5:00 PM	0	0	0	0	0	0	0	119	1	0	87	0	207
5:15 PM	0	0	0	0	0	0	0	128	0	0	82	0	210
5:30 PM	0	0	0	0	0	1	1	113	0	0	76	2	193
5:45 PM	1	0	0	0	0	0	0	107	3	0	62	0	173
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	7	0	2	1	0	6	1	947	8	0	716	2	1690
Approach %	77.78	0.00	22.22	14.29	0.00	85.71	0.10	99.06	0.84	0.00	99.72	0.28	
App/Depart	9	/	3	7	/	8	956	/	950	718	/	729	

PM Peak Hr Begins at: 400 PM

PEAK													
Volumes	6	0	2	1	0	5	0	480	4	0	409	0	907
Approach %	75.00	0.00	25.00	16.67	0.00	83.33	0.00	99.17	0.83	0.00	100.00	0.00	
PEAK HR. FACTOR:	0.500			0.500			0.938			0.913			0.961

CONTROL:	2-Way Stop (NB & SB)
COMMENT 1:	0
GPS:	33.741276, -111.782629

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: 138th St.
E-W STREET: Rio Verde Dr.

Date: 03/05/19
Day: TUESDAY

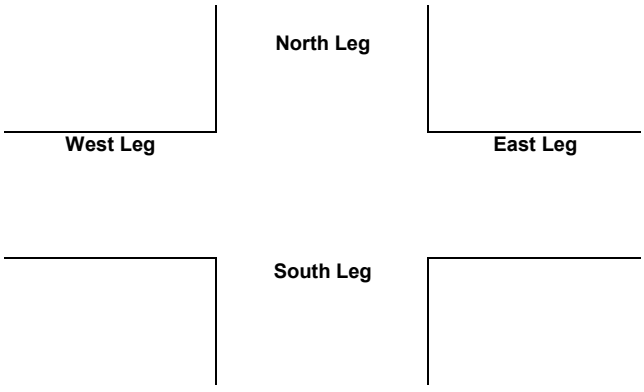
City: Scottsdale
Project #: 19-1117-002

	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	1	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	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	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**

	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**

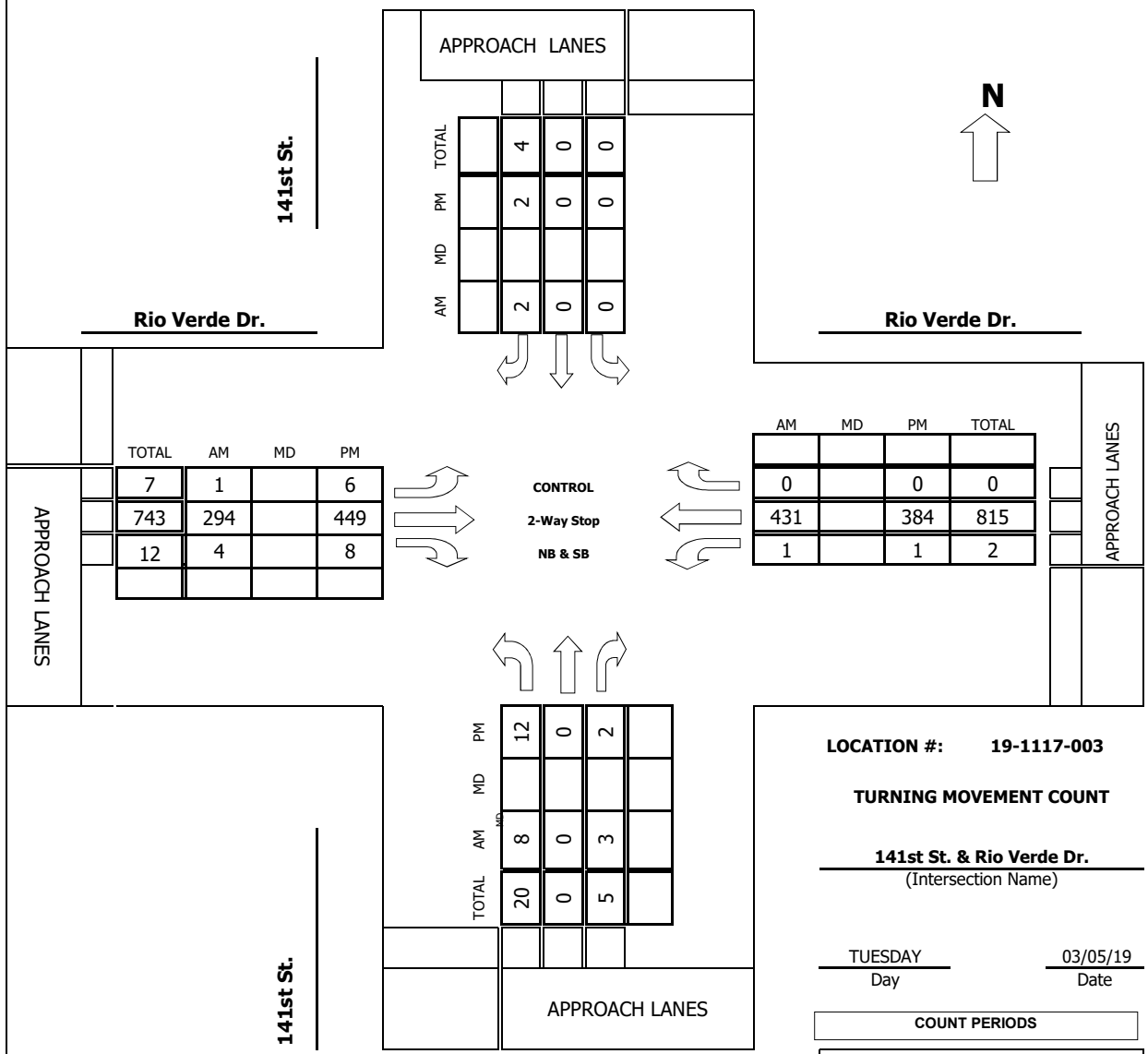


Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1117-003

TMC SUMMARY OF 141st St. & Rio Verde Dr.



LOCATION #: 19-1117-003

TURNING MOVEMENT COUNT

141st St. & Rio Verde Dr.
(Intersection Name)

TUESDAY
Day

03/05/19
Date

COUNT PERIODS

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

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 400 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	141st St.	DATE:	03/05/19	LOCATION:	Scottsdale
E-W STREET:	Rio Verde Dr.	DAY:	TUESDAY	PROJECT#	19-1117-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	6	0	0	0	0	3	0	78	0	0	103	0	190
7:15 AM	2	0	0	0	1	1	1	77	2	0	111	0	
7:30 AM	1	0	0	0	0	2	0	79	2	1	106	0	191
7:45 AM	2	0	1	0	0	0	0	71	0	0	91	0	165
8:00 AM	3	0	0	0	0	0	1	64	1	0	130	0	199
8:15 AM	2	0	2	0	0	0	0	80	1	0	104	0	189
8:30 AM	4	0	0	0	0	0	0	89	2	1	113	1	
8:45 AM	2	0	0	0	0	1	0	81	1	1	108	0	194
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	22	0	3	0	1	7	2	619	9	3	866	1	1533
Approach %	88.00	0.00	12.00	0.00	12.50	87.50	0.32	98.25	1.43	0.34	99.54	0.11	
App/Depart	25	/	3	8	/	13	630	/	622	870	/	895	

AM Peak Hr Begins at: 730 AM

PEAK													
Volumes	8	0	3	0	0	2	1	294	4	1	431	0	744
Approach %	72.73	0.00	27.27	0.00	0.00	100.00	0.33	98.33	1.34	0.23	99.77	0.00	
PEAK HR. FACTOR:	0.688			0.250			0.923			0.831			0.935

CONTROL: 2-Way Stop (NB & SB)
COMMENT 1:
GPS: 33.741286, -111.776125

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	141st St. 0	DATE:	03/05/19	LOCATION:	Scottsdale
E-W STREET:	Rio Verde Dr.	DAY:	TUESDAY	PROJECT#	19-1117-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
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	4	0	1	0	0	0	1	109	0	0	115	0	230
4:15 PM	4	0	0	0	0	0	2	112	1	1	95	0	215
4:30 PM	1	0	1	0	0	1	1	109	5	0	95	0	213
4:45 PM	3	0	0	0	0	1	2	119	2	0	79	0	206
5:00 PM	1	0	0	0	0	1	2	109	3	1	94	0	211
5:15 PM	1	0	0	0	0	0	2	120	4	0	82	0	209
5:30 PM	1	0	0	0	0	0	2	117	3	0	75	0	198
5:45 PM	0	0	0	0	0	0	0	99	1	0	53	0	153
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	15	0	2	0	0	3	12	894	19	2	688	0	1635
Approach %	88.24	0.00	11.76	0.00	0.00	100.00	1.30	96.65	2.05	0.29	99.71	0.00	
App/Depart	17	/	12	3	/	21	925	/	896	690	/	706	

PM Peak Hr Begins at: 400 PM

PEAK													
Volumes	12	0	2	0	0	2	6	449	8	1	384	0	864
Approach %	85.71	0.00	14.29	0.00	0.00	100.00	1.30	96.98	1.73	0.26	99.74	0.00	

PEAK HR. FACTOR:	0.700	0.500	0.941	0.837	0.939

CONTROL: 2-Way Stop (NB & SB)
COMMENT 1: 0
GPS: 33.741286, -111.776125

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: 141st St.
E-W STREET: Rio Verde Dr.

Date: 03/05/19
Day: TUESDAY

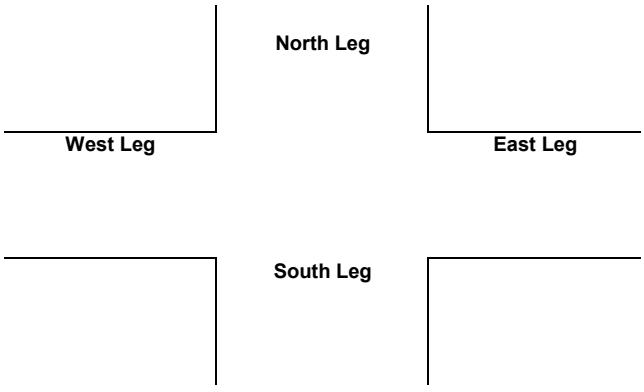
City: Scottsdale
Project #: 19-1117-003

	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	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	1	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	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	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**

	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: Tuesday, June 12, 2018 City: Scottsdale Project #: 18-1280-002

Location: Rio Verde Dr. west of 136th St.

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			7		0			12:00			86		91		
00:15			2		0			12:15			60		96		
00:30			3		4			12:30			92		84		
00:45			2	14	1	5	19	12:45			98	336	98	369	705
01:00			3		6			13:00			72		114		
01:15			2		0			13:15			91		96		
01:30			1		1			13:30			74		110		
01:45			5	11	0	7	18	13:45			61	298	89	409	707
02:00			2		1			14:00			93		101		
02:15			1		0			14:15			86		98		
02:30			2		2			14:30			83		107		
02:45			1	6	0	3	9	14:45			82	344	80	386	730
03:00			2		2			15:00			70		88		
03:15			4		3			15:15			89		73		
03:30			0		6			15:30			94		78		
03:45			9	15	4	15	30	15:45			94	347	58	297	644
04:00			9		19			16:00			99		77		
04:15			20		17			16:15			100		85		
04:30			40		19			16:30			104		80		
04:45			48	117	28	83	200	16:45			105	408	61	303	711
05:00			46		40			17:00			104		73		
05:15			35		32			17:15			97		50		
05:30			66		47			17:30			94		51		
05:45			63	210	53	172	382	17:45			113	408	49	223	631
06:00			48		62			18:00			90		36		
06:15			65		99			18:15			91		40		
06:30			60		98			18:30			82		31		
06:45			64	237	95	354	591	18:45			61	324	27	134	458
07:00			61		104			19:00			76		30		
07:15			76		113			19:15			59		28		
07:30			57		119			19:30			45		21		
07:45			69	263	103	439	702	19:45			58	238	21	100	338
08:00			65		139			20:00			61		11		
08:15			72		110			20:15			50		23		
08:30			73		117			20:30			30		16		
08:45			73	283	96	462	745	20:45			42	183	16	66	249
09:00			58		91			21:00			40		4		
09:15			75		73			21:15			24		8		
09:30			72		98			21:30			30		11		
09:45			68	273	112	374	647	21:45			25	119	9	32	151
10:00			53		81			22:00			22		5		
10:15			65		98			22:15			18		3		
10:30			72		109			22:30			8		4		
10:45			62	252	92	380	632	22:45			18	66	0	12	78
11:00			63		107			23:00			18		1		
11:15			86		108			23:15			9		3		
11:30			79		98			23:30			9		5		
11:45			63	291	85	398	689	23:45			6	42	4	13	55
Total Vol.				1972		2692	**4664**					3113		2344	**5457**

GPS Coordinates: 33.741444, -111.788310

Daily Totals

NB	SB	EB	WB	Combined
		5085	5036	**10121**

	AM			PM		
Split %	42.3%	57.7%	**46.1%**	57.0%	43.0%	**53.9%**
Peak Hour	11:15	07:15	**07:45**	16:15	12:45	**12:45**
Volume	314	474	**748**	413	418	**753**
P.H.F.	0.91	0.85	**0.92**	0.98	0.92	**0.96**

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

Volumes for: Tuesday, June 12, 2018 City: Scottsdale Project #: 18-1280-003

Location: Rio Verde Dr. west of 144th St.

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			6		0			12:00			79		74		
00:15			2		0			12:15			49		90		
00:30			3		3			12:30			73		73		
00:45			1	12	1	4	16	12:45			81	282	88	325	607
01:00			3		6			13:00			66		95		
01:15			2		0			13:15			81		85		
01:30			1		1			13:30			71		97		
01:45			4	10	0	7	17	13:45			53	271	84	361	632
02:00			2		1			14:00			80		91		
02:15			1		0			14:15			77		89		
02:30			2		2			14:30			69		93		
02:45			0	5	0	3	8	14:45			69	295	68	341	636
03:00			2		1			15:00			58		74		
03:15			3		2			15:15			72		69		
03:30			0		6			15:30			81		70		
03:45			9	14	4	13	27	15:45			80	291	54	267	558
04:00			9		17			16:00			82		63		
04:15			19		16			16:15			89		69		
04:30			40		15			16:30			99		50		
04:45			47	115	18	66	181	16:45			90	360	45	227	587
05:00			44		34			17:00			98		41		
05:15			32		25			17:15			87		50		
05:30			58		41			17:30			74		45		
05:45			58	192	46	146	338	17:45			75	334	43	179	513
06:00			42		51			18:00			74		31		
06:15			60		76			18:15			74		39		
06:30			60		83			18:30			71		29		
06:45			61	223	71	281	504	18:45			42	261	26	125	386
07:00			58		80			19:00			62		28		
07:15			54		78			19:15			53		25		
07:30			59		74			19:30			41		21		
07:45			66	237	87	319	556	19:45			44	200	16	90	290
08:00			49		116			20:00			49		10		
08:15			59		88			20:15			43		22		
08:30			69		106			20:30			24		17		
08:45			68	245	85	395	640	20:45			30	146	14	63	209
09:00			57		79			21:00			34		4		
09:15			70		65			21:15			22		8		
09:30			60		88			21:30			28		12		
09:45			64	251	101	333	584	21:45			23	107	8	32	139
10:00			51		68			22:00			18		5		
10:15			53		95			22:15			16		2		
10:30			63		92			22:30			5		1		
10:45			54	221	82	337	558	22:45			16	55	0	8	63
11:00			59		100			23:00			16		1		
11:15			74		92			23:15			8		3		
11:30			71		89			23:30			9		3		
11:45			59	263	79	360	623	23:45			6	39	4	11	50
Total Vol.				1788		2264	**4052**					2641		2029	**4670**

GPS Coordinates: 33.741306, -111.772090

Daily Totals

NB	SB	EB	WB	Combined
		4429	4293	**8722**

	AM			PM		
Split %	44.1%	55.9%	**46.5%**	56.6%	43.4%	**53.5%**
Peak Hour	11:15	07:45	**07:45**	16:15	12:45	**12:45**
Volume	283	397	**640**	376	365	**664**
P.H.F.	0.90	0.86	**0.91**	0.95	0.94	**0.98**

Appendix E – Existing Capacity Analysis

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	293	2	0	419	8	3	1	1	4	1	108
Future Vol, veh/h	50	293	2	0	419	8	3	1	1	4	1	108
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	230	-	-	-	-	100	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	56	326	2	0	466	9	3	1	1	4	1	120

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	475	0	0	328	0	0	970	914	327	906	906	466
Stage 1	-	-	-	-	-	-	439	439	-	466	466	-
Stage 2	-	-	-	-	-	-	531	475	-	440	440	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1087	-	-	1232	-	-	233	273	714	257	276	597
Stage 1	-	-	-	-	-	-	597	578	-	577	562	-
Stage 2	-	-	-	-	-	-	532	557	-	596	578	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1087	-	-	1232	-	-	178	259	714	246	262	597
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	259	-	246	262	-
Stage 1	-	-	-	-	-	-	566	548	-	547	562	-
Stage 2	-	-	-	-	-	-	424	557	-	563	548	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	21.3	13
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	226	1087	-	-	1232	-	-	246	590
HCM Lane V/C Ratio	0.025	0.051	-	-	-	-	-	0.018	0.205
HCM Control Delay (s)	21.3	8.5	-	-	0	-	-	19.9	12.7
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.1	0.8

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	280	3	3	408	0	6	0	1	0	0	2
Future Vol, veh/h	1	280	3	3	408	0	6	0	1	0	0	2
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	-	-	-	-	-	-	-	-	-	-	-	-
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	1	298	3	3	434	0	6	0	1	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	434	0	0	301	0	0	743	742	300	742	743	434
Stage 1	-	-	-	-	-	-	302	302	-	440	440	-
Stage 2	-	-	-	-	-	-	441	440	-	302	303	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1126	-	-	1260	-	-	331	344	740	332	343	622
Stage 1	-	-	-	-	-	-	707	664	-	596	578	-
Stage 2	-	-	-	-	-	-	595	578	-	707	664	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1126	-	-	1260	-	-	329	343	740	331	342	622
Mov Cap-2 Maneuver	-	-	-	-	-	-	329	343	-	331	342	-
Stage 1	-	-	-	-	-	-	706	663	-	595	576	-
Stage 2	-	-	-	-	-	-	591	576	-	705	663	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	15.3	10.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	357	1126	-	-	1260	-	-	622
HCM Lane V/C Ratio	0.021	0.001	-	-	0.003	-	-	0.003
HCM Control Delay (s)	15.3	8.2	0	-	7.9	0	-	10.8
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	274	4	1	401	0	8	0	3	0	0	2
Future Vol, veh/h	1	274	4	1	401	0	8	0	3	0	0	2
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	-	-	-	-	-	-	-	-	-	-	-	-
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	1	291	4	1	427	0	9	0	3	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	427	0	0	295	0	0	725	724	293	726	726	427
Stage 1	-	-	-	-	-	-	295	295	-	429	429	-
Stage 2	-	-	-	-	-	-	430	429	-	297	297	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1132	-	-	1266	-	-	340	352	746	340	351	628
Stage 1	-	-	-	-	-	-	713	669	-	604	584	-
Stage 2	-	-	-	-	-	-	603	584	-	712	668	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1132	-	-	1266	-	-	338	351	746	338	350	628
Mov Cap-2 Maneuver	-	-	-	-	-	-	338	351	-	338	350	-
Stage 1	-	-	-	-	-	-	712	668	-	603	583	-
Stage 2	-	-	-	-	-	-	600	583	-	708	667	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	14.3	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	397	1132	-	-	1266	-	-	628
HCM Lane V/C Ratio	0.029	0.001	-	-	0.001	-	-	0.003
HCM Control Delay (s)	14.3	8.2	0	-	7.8	0	-	10.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	433	3	4	379	9	6	0	3	10	0	47
Future Vol, veh/h	84	433	3	4	379	9	6	0	3	10	0	47
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	230	-	-	-	-	100	-	-	-	100	-	-
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	92	476	3	4	416	10	7	0	3	11	0	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	426	0	0	479	0	0	1117	1096	478	1087	1087	416
Stage 1	-	-	-	-	-	-	662	662	-	424	424	-
Stage 2	-	-	-	-	-	-	455	434	-	663	663	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1133	-	-	1083	-	-	185	213	587	194	216	637
Stage 1	-	-	-	-	-	-	451	459	-	608	587	-
Stage 2	-	-	-	-	-	-	585	581	-	450	459	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1133	-	-	1083	-	-	159	195	587	180	197	637
Mov Cap-2 Maneuver	-	-	-	-	-	-	159	195	-	180	197	-
Stage 1	-	-	-	-	-	-	414	422	-	559	584	-
Stage 2	-	-	-	-	-	-	535	578	-	411	422	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.1	23	13.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	210	1133	-	-	1083	-	-	180	637
HCM Lane V/C Ratio	0.047	0.081	-	-	0.004	-	-	0.061	0.081
HCM Control Delay (s)	23	8.5	-	-	8.3	0	-	26.3	11.2
HCM Lane LOS	C	A	-	-	A	A	-	D	B
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	0.2	0.3

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	447	4	0	381	0	6	0	2	1	0	5
Future Vol, veh/h	0	447	4	0	381	0	6	0	2	1	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	466	4	0	397	0	6	0	2	1	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	397	0	0	470	0	0	868	865	468	866	867	397
Stage 1	-	-	-	-	-	-	468	468	-	397	397	-
Stage 2	-	-	-	-	-	-	400	397	-	469	470	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1162	-	-	1092	-	-	273	292	595	274	291	652
Stage 1	-	-	-	-	-	-	575	561	-	629	603	-
Stage 2	-	-	-	-	-	-	626	603	-	575	560	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1162	-	-	1092	-	-	271	292	595	273	291	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	292	-	273	291	-
Stage 1	-	-	-	-	-	-	575	561	-	629	603	-
Stage 2	-	-	-	-	-	-	621	603	-	573	560	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	16.8	11.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	314	1162	-	-	1092	-	-	529
HCM Lane V/C Ratio	0.027	-	-	-	-	-	-	0.012
HCM Control Delay (s)	16.8	0	-	-	0	-	-	11.9
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	418	8	1	358	0	12	0	2	0	0	2
Future Vol, veh/h	6	418	8	1	358	0	12	0	2	0	0	2
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	-	-	-	-	-	-	-	-	-	-	-	-
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	6	445	9	1	381	0	13	0	2	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	381	0	0	454	0	0	846	845	450	846	849	381
Stage 1	-	-	-	-	-	-	462	462	-	383	383	-
Stage 2	-	-	-	-	-	-	384	383	-	463	466	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1177	-	-	1107	-	-	282	300	609	282	298	666
Stage 1	-	-	-	-	-	-	580	565	-	640	612	-
Stage 2	-	-	-	-	-	-	639	612	-	579	562	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1177	-	-	1107	-	-	279	298	609	279	296	666
Mov Cap-2 Maneuver	-	-	-	-	-	-	279	298	-	279	296	-
Stage 1	-	-	-	-	-	-	576	561	-	636	611	-
Stage 2	-	-	-	-	-	-	636	611	-	573	558	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	17.5	10.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	302	1177	-	-	1107	-	-	666
HCM Lane V/C Ratio	0.049	0.005	-	-	0.001	-	-	0.003
HCM Control Delay (s)	17.5	8.1	0	-	8.3	0	-	10.4
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Appendix F – Trip Generation

Rio Verde
Wildcat Ridge, LLC

Completed MS 2/19/2019
Checked GT 2/22/2019

Trip Generation Calculations

Existing Zoning

210 Single-Family Detached Housing

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	
Single-Family Detached Housing	**210**	**127**	**Dwelling Units**	**9.44**	**50%**	**50%**	**0.74**	**25%**	**75%**	**0.99**	**63%**	**37%**	**1,199**	**600**	**600**	**94**	**24**	**71**	**126**	**79**	**47**	**Average**
Single-Family Detached Housing	210	127	Dwelling Units	4.81	50%	50%	0.33	25%	75%	0.44	63%	37%	611	306	306	42	11	32	56	35	21	Minimum
Single-Family Detached Housing	210	127	Dwelling Units	19.39	50%	50%	2.27	25%	75%	2.98	63%	37%	2,463	1232	1232	289	72	217	379	239	140	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	
Single-Family Detached Housing	210	127	Dwelling Units	Ln(T)=0.92Ln(X)+2.71	50%	50%	T=0.71(X)+4.80	25%	75%	Ln(T)=0.96Ln(X)+0.20	63%	37%	1,296	648	648	95	24	71	128	81	47	Equation

Single-Family Detached Housing	Standard Deviation	2.10		0.27		0.31				
	Number of Studies	159		173		190				
	Average Size	264		219		242				

Rio Verde
Wildcat Ridge, LLC

Completed MS 2/19/2019
Checked GT 2/22/2019

Trip Generation Calculations

Proposed Development

210 Single-Family Detached Housing

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	
Single-Family Detached Housing	**210**	**260**	**Dwelling Units**	**9.44**	**50%**	**50%**	**0.74**	**25%**	**75%**	**0.99**	**63%**	**37%**	**2,454**	**1227**	**1227**	**193**	**48**	**145**	**257**	**162**	**95**	**Average**
Single-Family Detached Housing	210	260	Dwelling Units	4.81	50%	50%	0.33	25%	75%	0.44	63%	37%	1,251	626	626	86	22	65	115	72	43	Minimum
Single-Family Detached Housing	210	260	Dwelling Units	19.39	50%	50%	2.27	25%	75%	2.98	63%	37%	5,042	2521	2521	591	148	443	775	488	287	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	
Single-Family Detached Housing	210	260	Dwelling Units	Ln(T)=0.92Ln(X)+2.71	50%	50%	T=0.71(X)+4.80	25%	75%	Ln(T)=0.96Ln(X)+0.20	63%	37%	2,505	1,253	1,252	190	48	142	255	161	94	Equation

Single-Family Detached Housing	Standard Deviation	2.10		0.27		0.31
	Number of Studies	159		173		190
	Average Size	264		219		242

Lokahi **Rio Verde**

Wildcat Ridge, LLC

Completed	MS	2/19/2019
Checked	GT	2/22/2019

Trip Generation Calculations

South Leg of Rio Verde Drive and 136th Street

210 Single-Family Detached Housing

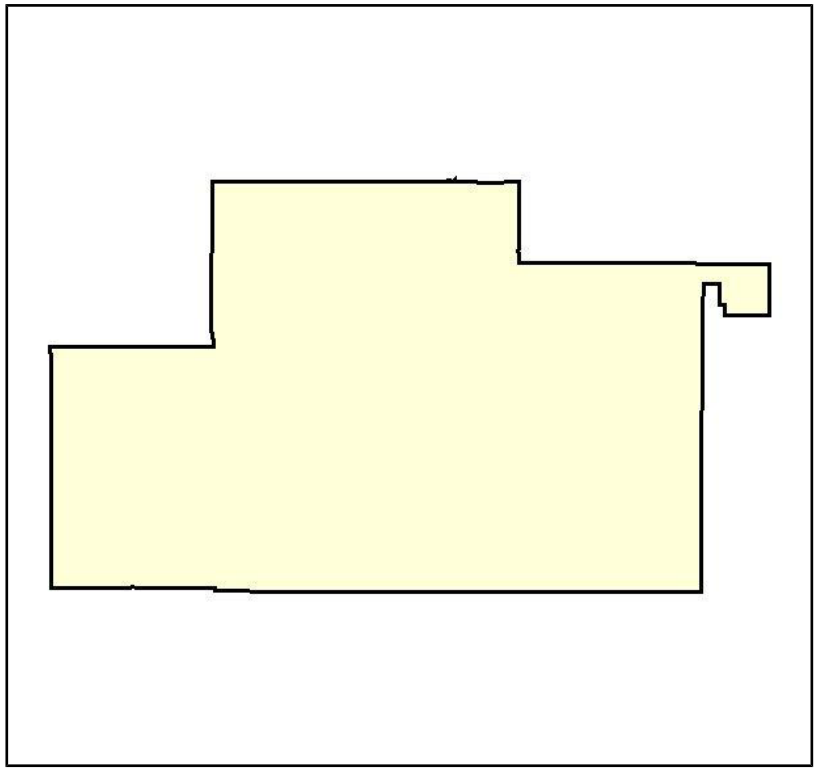
Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour			
				Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	
Single-Family Detached Housing	**210**	**24**	**Dwelling Units**	**9.44**	**50%**	**50%**	**0.74**	**25%**	**75%**	**0.99**	**63%**	**37%**	**227**	**114**	**114**	**18**	**5**	**13**	**24**	**15**	**9**	**Average**
Single-Family Detached Housing	210	24	Dwelling Units	4.81	50%	50%	0.33	25%	75%	0.44	63%	37%	116	58	58	8	2	6	11	7	4	Minimum
Single-Family Detached Housing	210	24	Dwelling Units	19.39	50%	50%	2.27	25%	75%	2.98	63%	37%	466	233	233	55	14	41	72	45	27	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	
Single-Family Detached Housing	210	24	Dwelling Units	Ln(T)=0.92Ln(X)+2.71	50%	50%	T=0.71(X)+4.80	25%	75%	Ln(T)=0.96Ln(X)+0.20	63%	37%	280	140	140	22	6	16	26	16	10	Equation

		Weekday	AM Peak Hour	PM Peak Hour
Single-Family Detached Housing	Standard Deviation	2.10	0.27	0.31
	Number of Studies	159	173	190
	Average Size	264	219	242

Appendix G – MAG Socioeconomic Projections

G

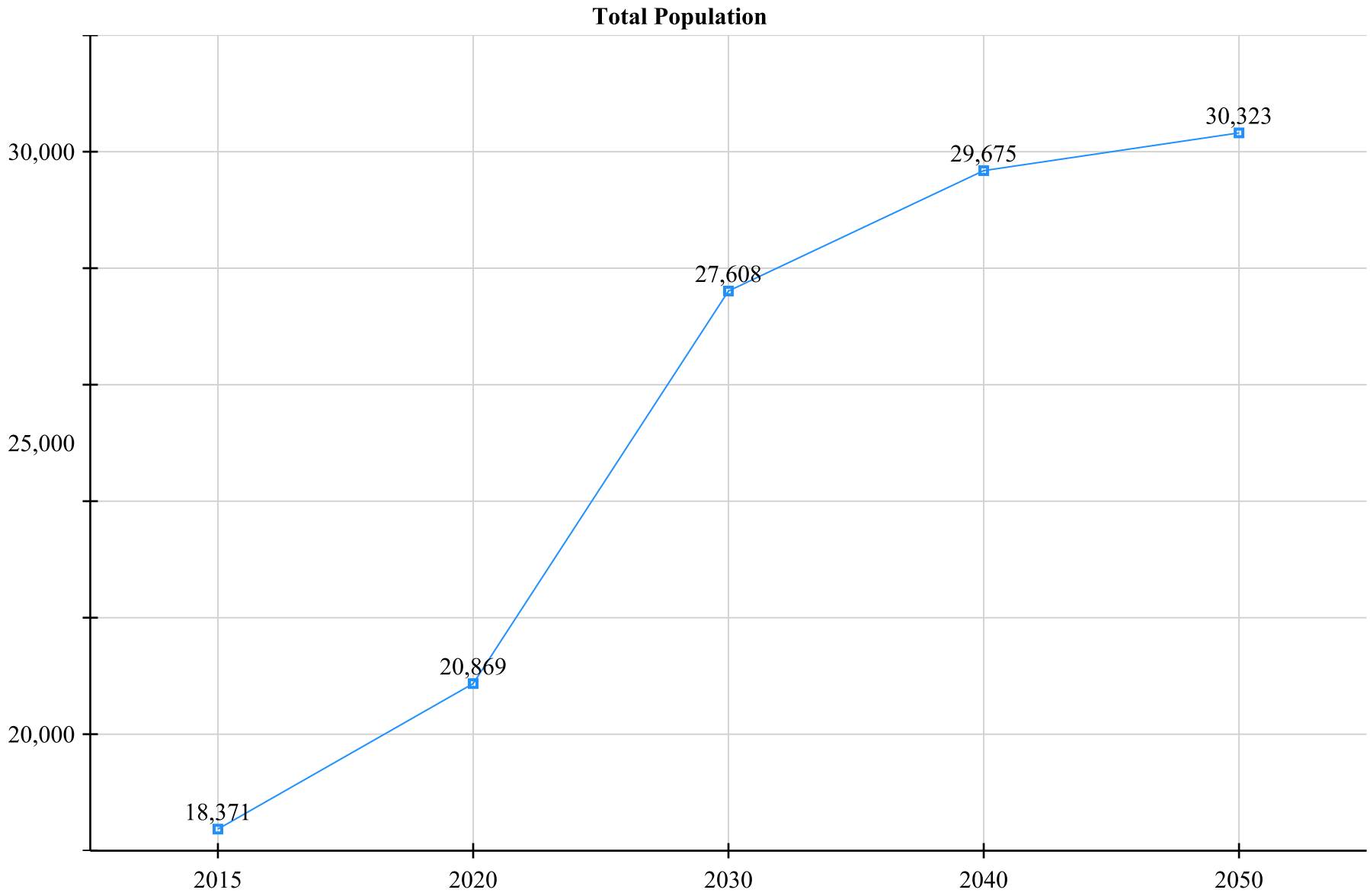
RAZ: 229 Projections Report



Projections summary:

	2015	2020	2030	2040	2050
Total Population	18,371	20,869	27,608	29,675	30,323
Household Population	18,326	20,813	27,521	29,552	30,175
Households	7,749	8,725	11,224	11,944	12,180
Dwelling Units	9,569	10,160	12,529	13,209	13,422
Total Employment	8,061	8,951	9,806	10,968	11,866

RAZ: 229 Projections Report



Source: MAG Socioeconomic Projections 2016

6/19/2018

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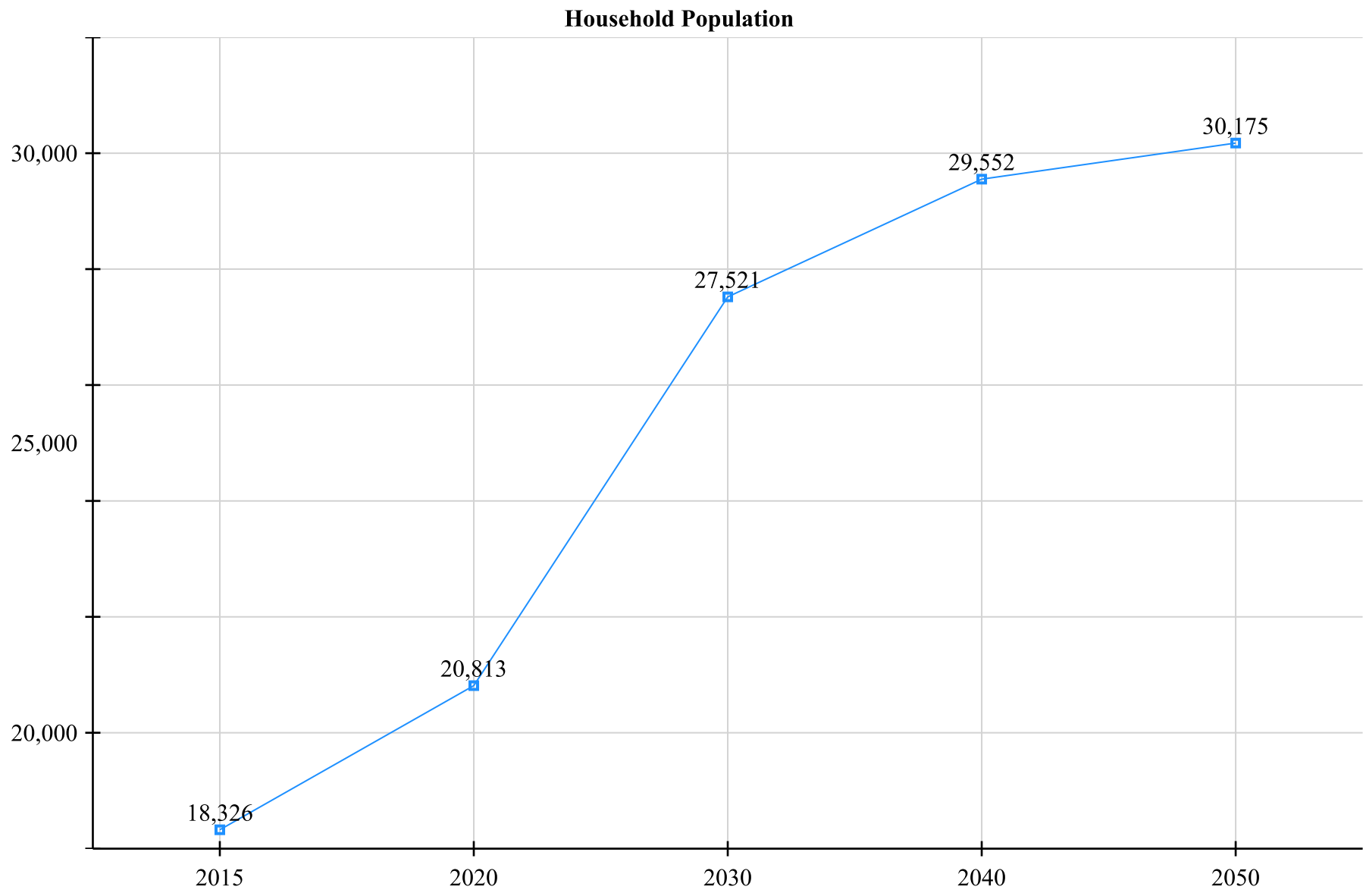

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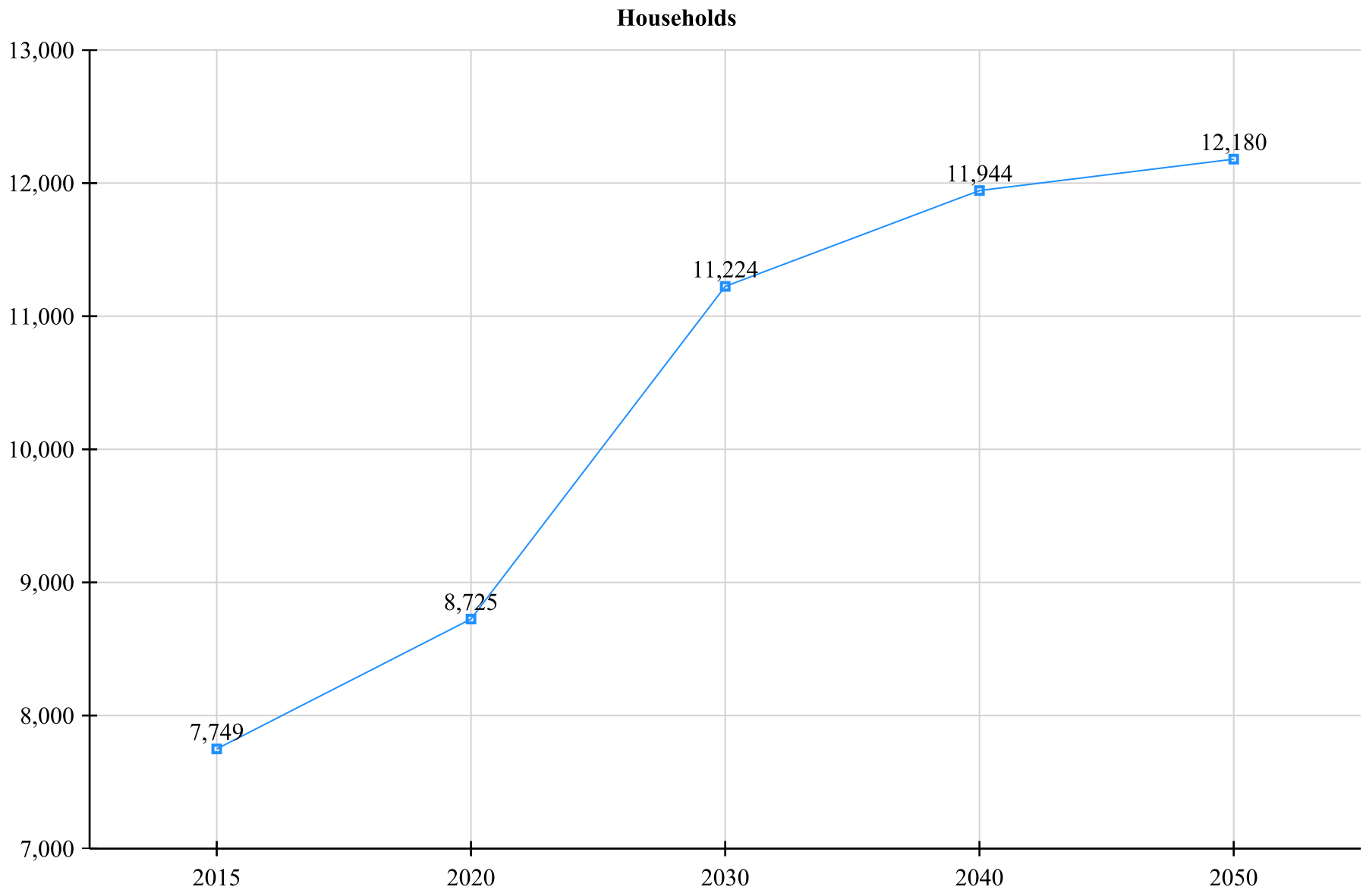

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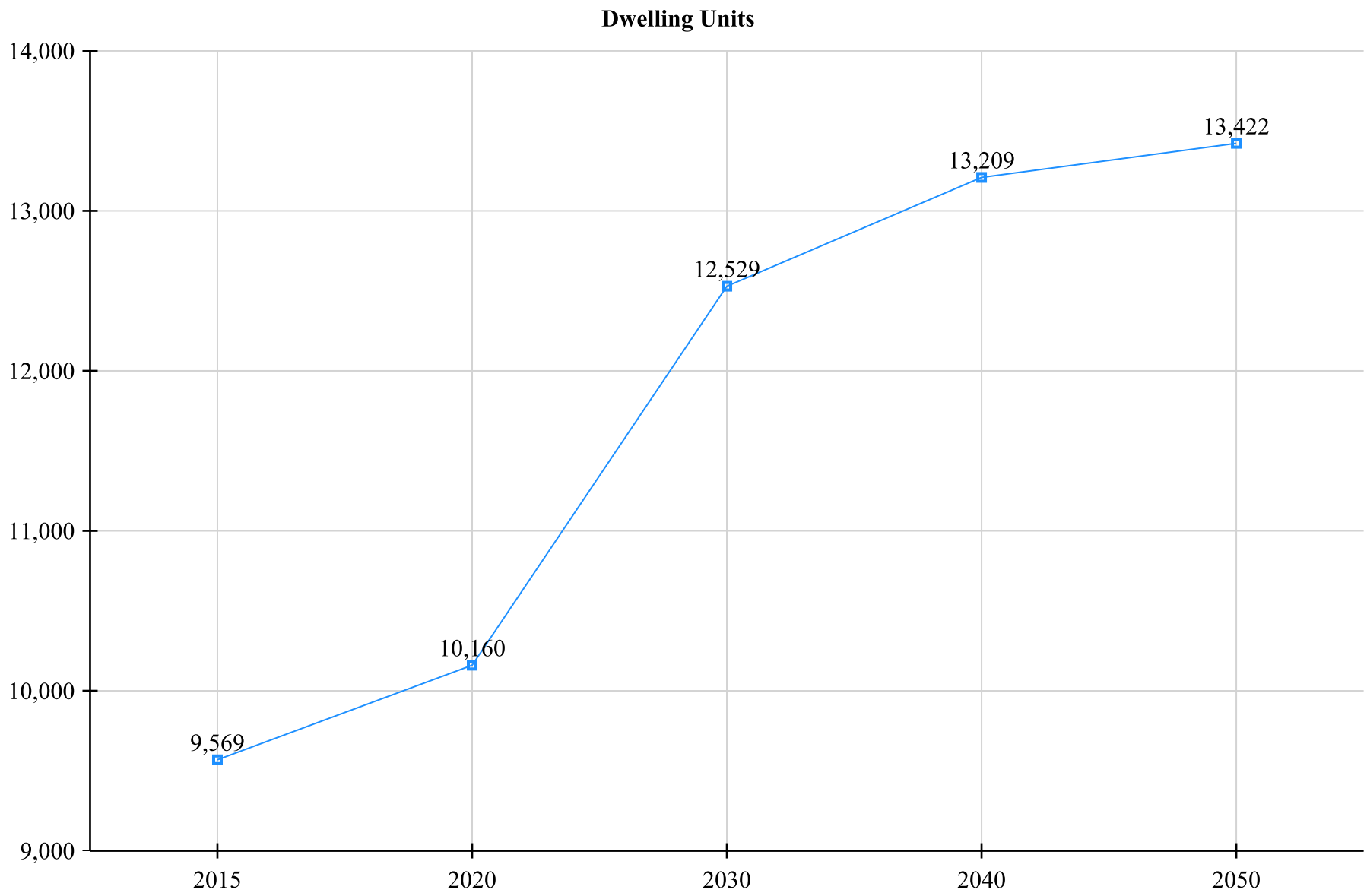

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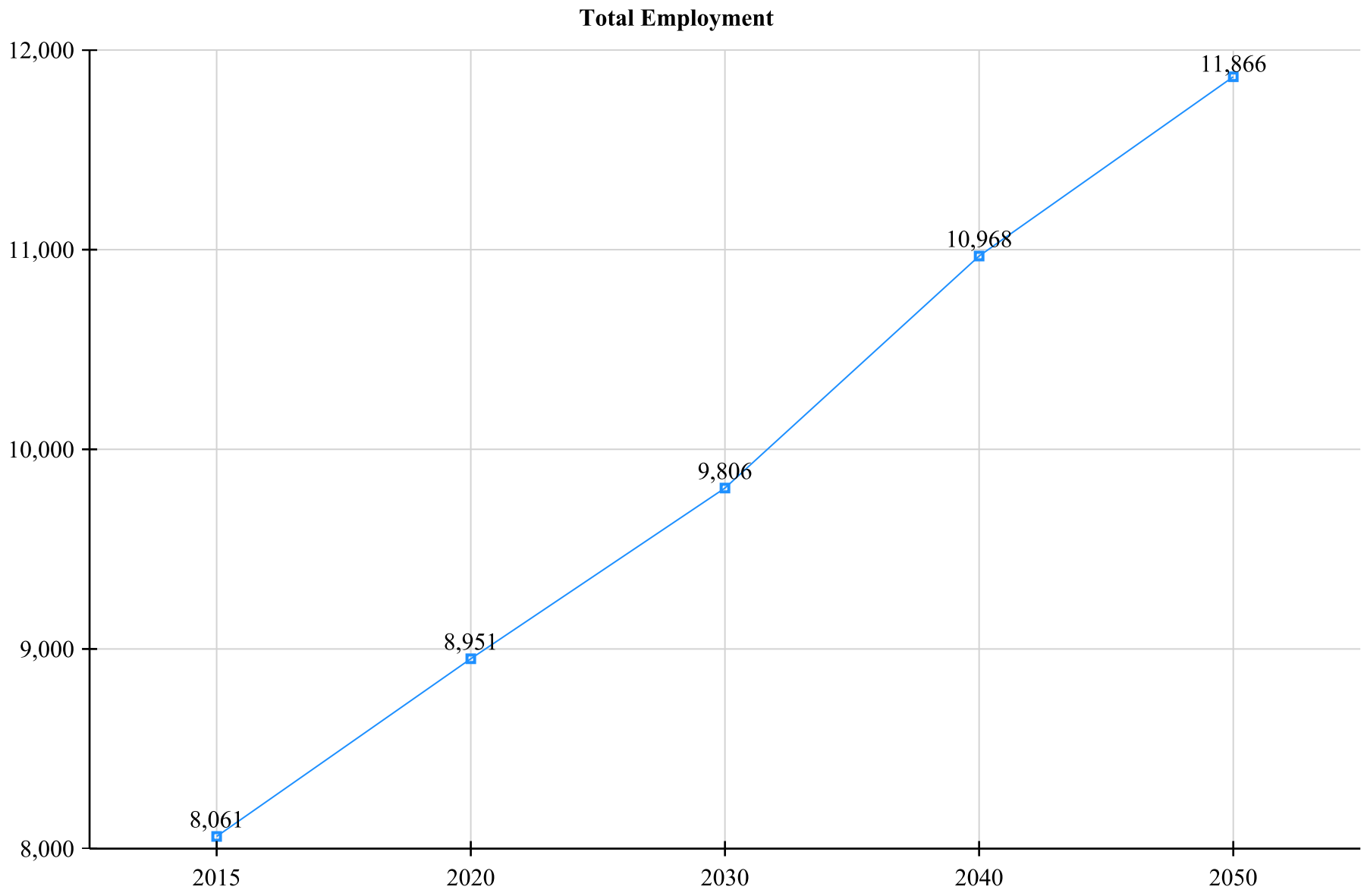

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Appendix H – Year 2027 No Build Capacity Analysis

H

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	344	3	0	491	10	4	2	2	5	2	127
Future Vol, veh/h	59	344	3	0	491	10	4	2	2	5	2	127
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	230	-	-	-	-	100	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	374	3	0	534	11	4	2	2	5	2	138

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	545	0	0	377	0	0	1114	1049	376	1040	1039	534
Stage 1	-	-	-	-	-	-	504	504	-	534	534	-
Stage 2	-	-	-	-	-	-	610	545	-	506	505	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1024	-	-	1181	-	-	185	227	670	208	231	546
Stage 1	-	-	-	-	-	-	550	541	-	530	524	-
Stage 2	-	-	-	-	-	-	482	519	-	549	540	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1024	-	-	1181	-	-	131	213	670	196	217	546
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	213	-	196	217	-
Stage 1	-	-	-	-	-	-	516	507	-	497	524	-
Stage 2	-	-	-	-	-	-	359	519	-	511	507	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	25.3	14.5
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	186	1024	-	-	1181	-	-	196	533
HCM Lane V/C Ratio	0.047	0.063	-	-	-	-	-	0.028	0.263
HCM Control Delay (s)	25.3	8.8	-	-	0	-	-	23.9	14.1
HCM Lane LOS	D	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.1	1

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	329	4	4	479	0	8	0	2	0	0	3
Future Vol, veh/h	2	329	4	4	479	0	8	0	2	0	0	3
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	-	-	-	-	-	-	-	-	-	-	-	-
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	2	358	4	4	521	0	9	0	2	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	521	0	0	362	0	0	895	893	360	894	895	521
Stage 1	-	-	-	-	-	-	364	364	-	529	529	-
Stage 2	-	-	-	-	-	-	531	529	-	365	366	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1045	-	-	1197	-	-	261	281	684	262	280	555
Stage 1	-	-	-	-	-	-	655	624	-	533	527	-
Stage 2	-	-	-	-	-	-	532	527	-	654	623	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1045	-	-	1197	-	-	258	279	684	260	278	555
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	279	-	260	278	-
Stage 1	-	-	-	-	-	-	654	623	-	532	524	-
Stage 2	-	-	-	-	-	-	526	524	-	651	622	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	17.7	11.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	295	1045	-	-	1197	-	-	555
HCM Lane V/C Ratio	0.037	0.002	-	-	0.004	-	-	0.006
HCM Control Delay (s)	17.7	8.5	0	-	8	0	-	11.5
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	322	5	2	470	0	10	0	4	0	0	3
Future Vol, veh/h	2	322	5	2	470	0	10	0	4	0	0	3
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	-	-	-	-	-	-	-	-	-	-	-	-
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	2	350	5	2	511	0	11	0	4	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	511	0	0	355	0	0	874	872	353	874	874	511
Stage 1	-	-	-	-	-	-	357	357	-	515	515	-
Stage 2	-	-	-	-	-	-	517	515	-	359	359	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1054	-	-	1204	-	-	270	289	691	270	288	563
Stage 1	-	-	-	-	-	-	661	628	-	543	535	-
Stage 2	-	-	-	-	-	-	541	535	-	659	627	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1054	-	-	1204	-	-	268	288	691	268	287	563
Mov Cap-2 Maneuver	-	-	-	-	-	-	268	288	-	268	287	-
Stage 1	-	-	-	-	-	-	660	627	-	542	534	-
Stage 2	-	-	-	-	-	-	537	534	-	654	626	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	16.6	11.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	325	1054	-	-	1204	-	-	563
HCM Lane V/C Ratio	0.047	0.002	-	-	0.002	-	-	0.006
HCM Control Delay (s)	16.6	8.4	0	-	8	0	-	11.4
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	99	508	4	5	445	11	8	0	4	12	0	56
Future Vol, veh/h	99	508	4	5	445	11	8	0	4	12	0	56
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	230	-	-	-	-	100	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	108	552	4	5	484	12	9	0	4	13	0	61

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	496	0	0	556	0	0	1301	1276	554	1266	1266	484
Stage 1	-	-	-	-	-	-	770	770	-	494	494	-
Stage 2	-	-	-	-	-	-	531	506	-	772	772	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1068	-	-	1015	-	-	138	167	532	146	169	583
Stage 1	-	-	-	-	-	-	393	410	-	557	546	-
Stage 2	-	-	-	-	-	-	532	540	-	392	409	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1068	-	-	1015	-	-	113	149	532	133	151	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	149	-	133	151	-
Stage 1	-	-	-	-	-	-	353	369	-	501	542	-
Stage 2	-	-	-	-	-	-	473	536	-	349	368	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.1	30.7	16
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	153	1068	-	-	1015	-	-	133	583
HCM Lane V/C Ratio	0.085	0.101	-	-	0.005	-	-	0.098	0.104
HCM Control Delay (s)	30.7	8.7	-	-	8.6	0	-	35	11.9
HCM Lane LOS	D	A	-	-	A	A	-	E	B
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0	-	-	0.3	0.3

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	524	5	0	447	0	8	0	3	2	0	6
Future Vol, veh/h	0	524	5	0	447	0	8	0	3	2	0	6
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	570	5	0	486	0	9	0	3	2	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	486	0	0	575	0	0	1063	1059	573	1060	1061	486
Stage 1	-	-	-	-	-	-	573	573	-	486	486	-
Stage 2	-	-	-	-	-	-	490	486	-	574	575	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1077	-	-	998	-	-	201	224	519	202	224	581
Stage 1	-	-	-	-	-	-	505	504	-	563	551	-
Stage 2	-	-	-	-	-	-	560	551	-	504	503	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1077	-	-	998	-	-	199	224	519	201	224	581
Mov Cap-2 Maneuver	-	-	-	-	-	-	199	224	-	201	224	-
Stage 1	-	-	-	-	-	-	505	504	-	563	551	-
Stage 2	-	-	-	-	-	-	554	551	-	501	503	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	20.9	14.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	239	1077	-	-	998	-	-	395
HCM Lane V/C Ratio	0.05	-	-	-	-	-	-	0.022
HCM Control Delay (s)	20.9	0	-	-	0	-	-	14.3
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	490	10	2	420	0	15	0	3	0	0	3
Future Vol, veh/h	8	490	10	2	420	0	15	0	3	0	0	3
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	-	-	-	-	-	-	-	-	-	-	-	-
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	9	533	11	2	457	0	16	0	3	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	457	0	0	544	0	0	1020	1018	539	1019	1023	457
Stage 1	-	-	-	-	-	-	557	557	-	461	461	-
Stage 2	-	-	-	-	-	-	463	461	-	558	562	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1104	-	-	1025	-	-	215	237	542	215	236	604
Stage 1	-	-	-	-	-	-	515	512	-	581	565	-
Stage 2	-	-	-	-	-	-	579	565	-	514	510	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1104	-	-	1025	-	-	211	233	542	211	232	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	211	233	-	211	232	-
Stage 1	-	-	-	-	-	-	509	506	-	574	563	-
Stage 2	-	-	-	-	-	-	574	563	-	505	504	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	21.7	11
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	235	1104	-	-	1025	-	-	604
HCM Lane V/C Ratio	0.083	0.008	-	-	0.002	-	-	0.005
HCM Control Delay (s)	21.7	8.3	0	-	8.5	0	-	11
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0

Appendix I – Year 2027 Build Capacity Analysis

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	382	6	0	608	10	11	2	3	5	2	127
Future Vol, veh/h	59	382	6	0	608	10	11	2	3	5	2	127
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	230	-	150	100	-	100	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	415	7	0	661	11	12	2	3	5	2	138

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	672	0	0	422	0	0	1280	1215	415	1210	1211	661
Stage 1	-	-	-	-	-	-	543	543	-	661	661	-
Stage 2	-	-	-	-	-	-	737	672	-	549	550	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	919	-	-	1137	-	-	143	181	637	159	182	462
Stage 1	-	-	-	-	-	-	524	520	-	452	460	-
Stage 2	-	-	-	-	-	-	410	454	-	520	516	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	919	-	-	1137	-	-	94	168	637	148	169	462
Mov Cap-2 Maneuver	-	-	-	-	-	-	94	168	-	148	169	-
Stage 1	-	-	-	-	-	-	487	484	-	420	460	-
Stage 2	-	-	-	-	-	-	286	454	-	479	480	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	40	17.1
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	120	919	-	-	1137	-	-	148	450
HCM Lane V/C Ratio	0.145	0.07	-	-	-	-	-	0.037	0.312
HCM Control Delay (s)	40	9.2	-	-	0	-	-	30.3	16.6
HCM Lane LOS	E	A	-	-	A	-	-	D	C
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0	-	-	0.1	1.3

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	350	22	7	543	0	61	0	11	0	0	3
Future Vol, veh/h	2	350	22	7	543	0	61	0	11	0	0	3
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	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	380	24	8	590	0	66	0	12	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	590	0	0	404	0	0	992	990	380	1008	1014	590
Stage 1	-	-	-	-	-	-	384	384	-	606	606	-
Stage 2	-	-	-	-	-	-	608	606	-	402	408	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	985	-	-	1155	-	-	225	246	667	219	239	508
Stage 1	-	-	-	-	-	-	639	611	-	484	487	-
Stage 2	-	-	-	-	-	-	483	487	-	625	597	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	985	-	-	1155	-	-	222	244	667	214	237	508
Mov Cap-2 Maneuver	-	-	-	-	-	-	222	244	-	214	237	-
Stage 1	-	-	-	-	-	-	637	609	-	483	484	-
Stage 2	-	-	-	-	-	-	477	484	-	612	595	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	26.2	12.1
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	247	985	-	-	1155	-	-	508
HCM Lane V/C Ratio	0.317	0.002	-	-	0.007	-	-	0.006
HCM Control Delay (s)	26.2	8.7	0	-	8.1	-	-	12.1
HCM Lane LOS	D	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	0	0	0	0	49	0	15	0	16	10	3
Future Vol, veh/h	8	0	0	0	0	49	0	15	0	16	10	3
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	-	-	-	-	-	-	-	-	-	-	-	-
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	9	0	0	0	0	53	0	16	0	17	11	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	90	63	13	63	64	16	14	0	0	16	0	0
Stage 1	47	47	-	16	16	-	-	-	-	-	-	-
Stage 2	43	16	-	47	48	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	895	828	1067	932	827	1063	1604	-	-	1602	-	-
Stage 1	967	856	-	1004	882	-	-	-	-	-	-	-
Stage 2	971	882	-	967	855	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	843	819	1067	925	818	1063	1604	-	-	1602	-	-
Mov Cap-2 Maneuver	843	819	-	925	818	-	-	-	-	-	-	-
Stage 1	967	847	-	1004	882	-	-	-	-	-	-	-
Stage 2	922	882	-	956	846	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	8.6	0	4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	843	1063	1602	-	-
HCM Lane V/C Ratio	-	-	-	0.01	0.05	0.011	-	-
HCM Control Delay (s)	0	-	-	9.3	8.6	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	332	25	6	473	0	74	0	15	0	0	3
Future Vol, veh/h	2	332	25	6	473	0	74	0	15	0	0	3
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	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	361	27	7	514	0	80	0	16	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	514	0	0	388	0	0	895	893	361	915	920	514
Stage 1	-	-	-	-	-	-	365	365	-	528	528	-
Stage 2	-	-	-	-	-	-	530	528	-	387	392	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1052	-	-	1170	-	-	261	281	684	253	271	560
Stage 1	-	-	-	-	-	-	654	623	-	534	528	-
Stage 2	-	-	-	-	-	-	533	528	-	637	606	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1052	-	-	1170	-	-	258	279	684	245	269	560
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	279	-	245	269	-
Stage 1	-	-	-	-	-	-	653	622	-	533	525	-
Stage 2	-	-	-	-	-	-	527	525	-	621	605	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	23.7	11.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	288	1052	-	-	1170	-	-	560
HCM Lane V/C Ratio	0.336	0.002	-	-	0.006	-	-	0.006
HCM Control Delay (s)	23.7	8.4	0	-	8.1	-	-	11.5
HCM Lane LOS	C	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	69	24	7
Future Vol, veh/h	20	0	0	69	24	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	0	75	26	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	105	30	34	0	-	0
Stage 1	30	-	-	-	-	-
Stage 2	75	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	893	1044	1578	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	893	1044	1578	-	-	-
Mov Cap-2 Maneuver	893	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	948	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1578	-	893	-	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	0	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	6	63	0	2	22
Future Vol, veh/h	0	6	63	0	2	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	68	0	2	24

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	96	68	0	0	68	0
Stage 1	68	-	-	-	-	-
Stage 2	28	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	903	995	-	-	1533	-
Stage 1	955	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	902	995	-	-	1533	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	994	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	995	1533	-
HCM Lane V/C Ratio	-	-	0.007	0.001	-
HCM Control Delay (s)	-	-	8.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	55	0	3	19
Future Vol, veh/h	0	8	55	0	3	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	60	0	3	21

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	87	60	0	0	60	0
Stage 1	60	-	-	-	-	-
Stage 2	27	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	914	1005	-	-	1544	-
Stage 1	963	-	-	-	-	-
Stage 2	996	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	912	1005	-	-	1544	-
Mov Cap-2 Maneuver	912	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	994	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1005	1544	-
HCM Lane V/C Ratio	-	-	0.009	0.002	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	0	0	25	10	10
Future Vol, veh/h	30	0	0	25	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	0	0	27	11	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	44	17	22	0	-	0
Stage 1	17	-	-	-	-	-
Stage 2	27	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	967	1062	1593	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	996	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	967	1062	1593	-	-	-
Mov Cap-2 Maneuver	967	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	996	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1593	-	967	-	-
HCM Lane V/C Ratio	-	-	0.034	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	0	0	0	7	0	14	0	2	7	1
Future Vol, veh/h	4	0	0	0	0	7	0	14	0	2	7	1
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	0	0	0	8	0	15	0	2	8	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	32	28	9	28	28	15	9	0	0	15	0	0
Stage 1	13	13	-	15	15	-	-	-	-	-	-	-
Stage 2	19	15	-	13	13	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	976	865	1073	981	865	1065	1611	-	-	1603	-	-
Stage 1	1007	885	-	1005	883	-	-	-	-	-	-	-
Stage 2	1000	883	-	1007	885	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	968	864	1073	980	864	1065	1611	-	-	1603	-	-
Mov Cap-2 Maneuver	968	864	-	980	864	-	-	-	-	-	-	-
Stage 1	1007	884	-	1005	883	-	-	-	-	-	-	-
Stage 2	993	883	-	1006	884	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.4	0	1.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1611	-	-	968	1065	1603	-	-
HCM Lane V/C Ratio	-	-	-	0.004	0.007	0.001	-	-
HCM Control Delay (s)	0	-	-	8.7	8.4	7.2	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	8	0	3	5
Future Vol, veh/h	0	8	8	0	3	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	9	0	3	5

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	20	9	0	0	9	0
Stage 1	9	-	-	-	-	-
Stage 2	11	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	997	1073	-	-	1611	-
Stage 1	1014	-	-	-	-	-
Stage 2	1012	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	995	1073	-	-	1611	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1010	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	2.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1073	1611	-
HCM Lane V/C Ratio	-	-	0.008	0.002	-
HCM Control Delay (s)	-	-	8.4	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	99	639	12	6	522	11	12	0	5	12	0	56
Future Vol, veh/h	99	639	12	6	522	11	12	0	5	12	0	56
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	230	-	150	100	-	100	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	108	695	13	7	567	12	13	0	5	13	0	61

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	579	0	0	708	0	0	1529	1504	695	1501	1505	567
Stage 1	-	-	-	-	-	-	911	911	-	581	581	-
Stage 2	-	-	-	-	-	-	618	593	-	920	924	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	995	-	-	891	-	-	96	121	442	100	121	523
Stage 1	-	-	-	-	-	-	328	353	-	499	500	-
Stage 2	-	-	-	-	-	-	477	493	-	325	348	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	995	-	-	891	-	-	77	107	442	90	107	523
Mov Cap-2 Maneuver	-	-	-	-	-	-	77	107	-	90	107	-
Stage 1	-	-	-	-	-	-	292	315	-	445	496	-
Stage 2	-	-	-	-	-	-	418	489	-	286	310	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.1	47.9	19.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	102	995	-	-	891	-	-	90	523
HCM Lane V/C Ratio	0.181	0.108	-	-	0.007	-	-	0.145	0.116
HCM Control Delay (s)	47.9	9.1	-	-	9.1	-	-	51.7	12.8
HCM Lane LOS	E	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	0.6	0.4	-	-	0	-	-	0.5	0.4

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	596	65	10	490	0	43	0	9	2	0	6
Future Vol, veh/h	0	596	65	10	490	0	43	0	9	2	0	6
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	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	648	71	11	533	0	47	0	10	2	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	533	0	0	719	0	0	1207	1203	648	1244	1274	533
Stage 1	-	-	-	-	-	-	648	648	-	555	555	-
Stage 2	-	-	-	-	-	-	559	555	-	689	719	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1035	-	-	882	-	-	160	184	470	151	167	547
Stage 1	-	-	-	-	-	-	459	466	-	516	513	-
Stage 2	-	-	-	-	-	-	513	513	-	436	433	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1035	-	-	882	-	-	157	182	470	146	165	547
Mov Cap-2 Maneuver	-	-	-	-	-	-	157	182	-	146	165	-
Stage 1	-	-	-	-	-	-	459	466	-	516	507	-
Stage 2	-	-	-	-	-	-	501	507	-	427	433	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	34.6	16.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	177	1035	-	-	882	-	-	324
HCM Lane V/C Ratio	0.319	-	-	-	0.012	-	-	0.027
HCM Control Delay (s)	34.6	0	-	-	9.1	-	-	16.4
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	0	0	0	33	0	14	0	55	11	9
Future Vol, veh/h	5	0	0	0	0	33	0	14	0	55	11	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	0	0	0	36	0	15	0	60	12	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	170	152	17	152	157	15	22	0	0	15	0	0
Stage 1	137	137	-	15	15	-	-	-	-	-	-	-
Stage 2	33	15	-	137	142	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	794	740	1062	815	735	1065	1593	-	-	1603	-	-
Stage 1	866	783	-	1005	883	-	-	-	-	-	-	-
Stage 2	983	883	-	866	779	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	745	712	1062	791	707	1065	1593	-	-	1603	-	-
Mov Cap-2 Maneuver	745	712	-	791	707	-	-	-	-	-	-	-
Stage 1	866	753	-	1005	883	-	-	-	-	-	-	-
Stage 2	950	883	-	833	749	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	8.5	0	5.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1593	-	-	745	1065	1603	-	-
HCM Lane V/C Ratio	-	-	-	0.007	0.034	0.037	-	-
HCM Control Delay (s)	0	-	-	9.9	8.5	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	497	81	14	431	0	57	0	10	0	0	3
Future Vol, veh/h	8	497	81	14	431	0	57	0	10	0	0	3
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	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	540	88	15	468	0	62	0	11	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	468	0	0	628	0	0	1058	1056	540	1106	1144	468
Stage 1	-	-	-	-	-	-	558	558	-	498	498	-
Stage 2	-	-	-	-	-	-	500	498	-	608	646	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1094	-	-	954	-	-	203	225	542	188	200	595
Stage 1	-	-	-	-	-	-	514	512	-	554	544	-
Stage 2	-	-	-	-	-	-	553	544	-	483	467	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1094	-	-	954	-	-	198	218	542	180	194	595
Mov Cap-2 Maneuver	-	-	-	-	-	-	198	218	-	180	194	-
Stage 1	-	-	-	-	-	-	507	505	-	547	535	-
Stage 2	-	-	-	-	-	-	541	535	-	467	461	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	29.4	11.1
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	219	1094	-	-	954	-	-	595
HCM Lane V/C Ratio	0.333	0.008	-	-	0.016	-	-	0.005
HCM Control Delay (s)	29.4	8.3	0	-	8.8	-	-	11.1
HCM Lane LOS	D	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	0	0	54	73	22
Future Vol, veh/h	13	0	0	54	73	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	0	0	59	79	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	150	91	103	0	-	0
Stage 1	91	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	842	967	1489	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	842	967	1489	-	-	-
Mov Cap-2 Maneuver	842	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	964	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1489	-	842	-	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	4	50	0	7	66
Future Vol, veh/h	0	4	50	0	7	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	54	0	8	72

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	142	54	0	0	54	0
Stage 1	54	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	851	1013	-	-	1551	-
Stage 1	969	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	847	1013	-	-	1551	-
Mov Cap-2 Maneuver	847	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1013	1551	-
HCM Lane V/C Ratio	-	-	0.004	0.005	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	45	0	9	57
Future Vol, veh/h	0	5	45	0	9	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	49	0	10	62

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	131	49	0	0	49	0
Stage 1	49	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	863	1020	-	-	1558	-
Stage 1	973	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	857	1020	-	-	1558	-
Mov Cap-2 Maneuver	857	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	934	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1020	1558	-
HCM Lane V/C Ratio	-	-	0.005	0.006	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	25	23	34
Future Vol, veh/h	20	0	0	25	23	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	0	27	25	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	71	44	62	0	-	0
Stage 1	44	-	-	-	-	-
Stage 2	27	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	933	1026	1541	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	996	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	933	1026	1541	-	-	-
Mov Cap-2 Maneuver	933	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	996	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1541	-	933	-	-
HCM Lane V/C Ratio	-	-	0.023	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	0	0	0	4	0	18	0	7	12	4
Future Vol, veh/h	3	0	0	0	0	4	0	18	0	7	12	4
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	-	-	-	-	-	-	-	-	-	-	-	-
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	3	0	0	0	0	4	0	20	0	8	13	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	53	51	15	51	53	20	17	0	0	20	0	0
Stage 1	31	31	-	20	20	-	-	-	-	-	-	-
Stage 2	22	20	-	31	33	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	946	840	1065	948	838	1058	1600	-	-	1596	-	-
Stage 1	986	869	-	999	879	-	-	-	-	-	-	-
Stage 2	996	879	-	986	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	938	836	1065	944	834	1058	1600	-	-	1596	-	-
Mov Cap-2 Maneuver	938	836	-	944	834	-	-	-	-	-	-	-
Stage 1	986	865	-	999	879	-	-	-	-	-	-	-
Stage 2	992	879	-	981	864	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	8.4	0	2.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	938	1058	1596	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.004	0.005	-	-
HCM Control Delay (s)	0	-	-	8.9	8.4	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	12	0	9	9
Future Vol, veh/h	0	5	12	0	9	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	13	0	10	10

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	43	13	0	0	13	0
Stage 1	13	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	968	1067	-	-	1606	-
Stage 1	1010	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	962	1067	-	-	1606	-
Mov Cap-2 Maneuver	962	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	987	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1067	1606	-
HCM Lane V/C Ratio	-	-	0.005	0.006	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

DATA TABLE

GROSS SITE AREA:	273.2 ACRES
SITE DENSITY:	0.95 DU/AC
# SINGLE FAMILY HOMES:	260
PROPOSED ZONING:	PLANNED COMMUNITY
DISTRICT (PCD) ESL	
N.A.O.S. (REQUIRED):	81.8 AC
N.A.O.S. (PROVIDED):	109.3 AC
	(40% OF SITE)

SITE AREA BY ZONING DISTRICT:

R1-18 PCD ESL:	122.0 AC (45%)
R1-43 PCD ESL:	105.0 AC (38%)
OS PCD ESL:	46.2 (17%)

LAND USE BUDGET

Development Land Use Budget

Parcel #	PCD Base Zoning	Gross Area (Acres)	Max. Density per E.S.L.	Max. # Allowed Units	Target # Allowed Units
1	OS	5.8	0	0	0
2	OS	9.1	0	0	0
3	OS	11.9	0	0	0
4	R1-43	8.1	0.83	6	6
5	R1-43	12.7	0.83	10	10
6	OS	9.2	0	0	0
7	R1-18	14.3	1.87	26	22
8	R1-18	34.1	1.87	63	60
9	R1-43	18.7	0.83	15	11
10	R1-43	11	0.83	9	9
11	R1-18	73.6	1.87	137	108
12	R1-43	24	0.83	19	15
13	OS	10.2	0	0	0
14	R1-43	10.2	0.83	8	7
15	R1-43	20.3	0.83	16	12
Total:		**273.2**			**260**

Note: The maximum number of units provided within Fiesta Ranch is not to exceed 260. Units may be moved from one parcel to another so long as the total number of units for that parcel does not exceed the maximum number of allowed units per the parcel's E.S.L. zoning category.

NOTES

- ALL DIVIDED ENTRANCES SHALL BE A MINIMUM OF 20-FEET WIDE.
- A TURN-AROUND FOR EMERGENCY VEHICLES WILL BE PROVIDED AT THE TERMINUS OF ALL DEAD-ENDS GREATER THAN 300-FEET IN LENGTH.
- SECONDARY ACCESS WILL BE PROVIDED WHERE NECESSARY IN CONFORMANCE WITH DS&PM 2-1.303(B).
- FIRE HYDRANT SPACING WILL BE IN ACCORDANCE WITH CITY OF SCOTTSDALE STANDARDS.
- A KEY SWITCH/PRE-EMPTION SENSOR WILL BE PROVIDED AT ALL GATED ENTRIES.
- ALL STREETS WILL HAVE A MINIMUM DRIVE WIDTH OF 24 FEET.
- RESIDENTIAL LOTS SHALL HAVE FRONTAGE ON AND ACCESS TO A PUBLIC OR PRIVATE STREET PER SRC 48-7.
- ALL EXISTING AND PROPOSED OVERHEAD WIRE FACILITIES ALONG AND WITHIN PROJECT BOUNDARIES TO BE UNDERGROUNDED PER SRC 47-80.
- 136TH STREET TO BE A RURAL/ESL LOCAL COLLECTOR. MIN. 24' PAVEMENT WIDTH, GUTTER PROVIDED ONLY ON THE EAST SIDE. 6' WIDE COMPACTED SHOULDER (NO SIDEWALK).
- 138TH STREET AND 141ST STREET TO BE CONSTRUCTED TO FULL RURAL/ESL LOCAL COLLECTOR STANDARDS WITH CURB AND GUTTER ON BOTH SIDES AND A 6' SIDEWALK ON ONE SIDE WITH THIS DEVELOPMENT (MIN. 50-FEET OF RIGHT OF WAY TO BE DEDICATED).
- PAVEMENT WIDENING ON RIO VERDE TO PROVIDE A CENTER TURN LANE WHILE MAINTAINING EXISTING BIKE LANES.
- SIDEWALK CONSTRUCTION TO BE IN ULTIMATE LOCATION BASED UPON BUILD OUT OF RIO VERDE TO A MINOR COLLECTOR CROSS SECTION AND CONSISTENT WITH CONCEPTUAL RIO VERDE STREET IMPROVEMENT DESIGN PREPARED BY MARICOPA COUNTY DOT.
- ALL STREET INTERSECTIONS SHALL PROVIDE A 25' RADIUS ROW IN CONFORMANCE WITH DSPM SEC. 5-3.123; FIG. 5-3.27.
- ALL STREET INTERSECTIONS SHALL PROVIDE A DEDICATION OF SAFETY TRIANGLES IN CONFORMANCE WITH DSPM 5-3.123; FIG. 5-3.17.

Item	Response	Responsible Party
Zoning Ordinance and Scottsdale Revise Code Significant Issues		
Zoning		
1. The Open Space plan indicates that Vista Corridor washes will be undisturbed NAOS. The grading and drainage plans appear to indicate that there will be significant grading and channeling of the Vista Corridor washes. The Scenic Corridor requirement for Rio Verde is 100 feet and the development plan show 200-feet open space buffer. Please move the development parcels of 5, 6 and 7 to the north reducing the Scenic Corridor and expanding the Vista Corridor wash area. (Section 6.1011 & DSPM 2-1.306).	While the applicant's plan is to leave the vista corridors largely in their natural, undisturbed condition, some disturbance is necessary for development of the site. The NAOS plan has been revised to clarify that certain areas of the Vista Corridors will be provided as undisturbed NAOS with total disturbed area not to exceed to 30% of the required NAOS area. Maintaining a 200-foot wide zoned open space tract along the site's Rio Verde frontage serves as a meaningful open space buffer for future residents, will make the development less visible to passing traffic, and provides amble buffering for the existing wash corridor in this area.	**RVi**
2. Please update the Open Space plan to indicate disturbed NAOS/Open Space areas based on the grading and drainage plan. Maximum disturbed NAOS is 30% of the required NAOS (Section 6.1060.D.2).	A detailed grading and drainage analysis will be conducted as part of the preliminary plat process at which time a NAOS plan will be prepared identifying specific NAOS areas and ensuring that no more than 30% of the required NAOS may be disturbed. In the meantime, a note has been included on the NAOS plan stating that the maximum disturbed NAOS area is 30% of the required NAOS per Section 6.1060.D.2.	**RVI**
3. Development plan states that a 50-foot landscape on-lot easement will be provided along the western perimeter of Parcel 8 and the southern boundary of Parcel 12. All or a portion of this area should be in a perpetual protected NAOS tract.	The 50-loot on-lot landscape easement allows lot sizes within parcels 8 and 12 to match those of adjacent properties creating a consistent development pattern in this area. Building setbacks will be required to meet or exceed those required on adjacent parcels. Tract NAOS will	**RVi**

Item	Response	Responsible Party
	be provided elsewhere along the south and west site frontages in the zoned open space parcels 1, 4 and 11.	
Circulation		
4. Please be advised construction of pavement widening along the site frontage to provide a center turn lane (maintaining existing bike lanes) between 136th Street and 144th Street (turn lane ties into the left-turn lanes at each intersection) plus providing an in-lieu payment for curb and gutter along the site frontage will be required.	Understood. Pavement will be widened along the site frontage to provide a center turn lane (maintaining existing bike lanes) between 136th Street and 144th Street. An in-lieu payment for curb and gutter along the street frontage will be provided. This has been noted on the development plan.	**RVi/Lokahi**
5. This widening will include a minimum width of 24 feet of pavement, widening at the intersection of Rio Verde Drive to match the existing cross section on the north side (including separate left-turn lane). Curb and gutter to be provided only on the east side; 6' wide compacted shoulder (no sidewalk). Please note or show on the development plan.	Understood. This has been noted on the development plan.	**RVi/Lokahi**
6. Rural/ESL Local Collector street along the 138th Street and 141st Street site frontages will require full width construction, curb and gutter on both sides. A six-foot wide sidewalk to be provided on at least one side of each street. Please note or show on the development plan.	Understood. This has been noted on the development plan.	**RVi/Lokahi**
Drainage		
7. Please submit the revised Drainage Report with the original red-lined copy of the report to me with the rest of the resubmittal material identified in Attachment A. Please address the following:	Submitted.	**SEG**
8. The revised drainage report does not allow review and evaluation of the major drainage elements for this zoning case.	Additional wash data provided.	**SEG**
9. The grading and drainage plan provided with the 2nd submittal is essentially the same one as provided during the 1st review, which is extremely conceptual and does not provide the required level of detail required for a zoning case.	Noted, lotting and street layout is not provided at this level as discussed with city staff.	**SEG**
10. The report has been revised to include calculations for these	Additional flow data added to plan and drainage exhibits.	**SEG**

Item	Response	Responsible Party
smaller stormwater inflows; however, these flows are not shown on any of the drainage exhibits or the preliminary G&D plans.		
11. Based on a comparison of the electronic HEC-RAS models provided, there are considerable areas where the post-developed 100-year WSEL is more than 1 ft higher than the existing 100-yr WSEL (and two cross sections where the increase is more than 2 ft).	Cross-sections and WSEL's clarified.	**SEG**
12. Based on the response to comments letter, the Engineer suggests that the significant difference in WSEL is likely due to a datum difference. This potential datum difference should be addressed and must be documented in the drainage report so that comparisons can be made with FEMA WSEL.	Rio Verde wash was modeled in FLO2D which is different than the HECRAS, and as part of the CLOMR process SEG will obtain the effective model and will extend the model HECRAS upstream and downstream as needed to get a tie in to the effective model as required by FEMA. Please note that because existing and proposed models have same water elevations this additional modeling is only for FEMA mapping purposes and will not affect this zoning application.	**SEG**
13. The zoning application identifies proposed numbers of lots for the various zoning areas as shown on the Development Plan and Open Space Plan. The size and limits of these areas are dependent on the ability to confine and improve the two large washes. For this reason the City must evaluate the viability of the wash improvements. With respect to this issue, as a minimum for the zoning case, the applicant will need to provide typical cross sections and show conceptual designs, limits and locations of wash improvements in plan view. These proposed improvements must be reflected in the proposed conditions hydraulics (HEC-RAS) models.	Noted, HEC-RAS models based on assumed improvements shown.	**SEG**
14. Based on the response to comments letter, the Engineer states that HEC-1 modeling will be conducted at a later stage. Note that the Engineer must provide more detailed information at the next stage of the project (Development Review / Preliminary Plat). The hydrology should include a storage routing analysis of each stormwater storage basin including composite inflow and outflow hydrographs for the 2-, 10- and 100-year storm events. The basins must be shown on an actual Grading & Drainage Plan and not shown conceptually as with	Noted.	**SEG**

Item	Response	Responsible Party
this zoning case.		
15. Based on the response to comments letter, the Engineer states that more detail will be provided at a later stage. Note that the Engineer must provide hydraulic analyses for these crossings at the next stage of the project (Development Review / Preliminary Plat).	Noted.	**SEG**
16. Electronic copies of the HEC-RAS models have been provided. Note that detailed hydrologic and hydraulic models will be required at the next stage of the project (Development Review/ Preliminary Plat) in order to demonstrate that post-developed conditions do not adversely affect pre-developed conditions.	Noted.	**SEG**
17. The Warning and Disclaimer of Liability form should be included in the report and signed.	The form is included (page 11) and will be signed after first Improvement Plan review is complete (need plan check #).	**SEG**
Water and Waste Water		
18. Please submit the revised Water and Waste Water Design Report with the rest of the resubmittal material identified in Attachment A. If a lift station is required on this property, please show proposed location on development plan which would have to be dedicate to the City.	Noted.	**SEG**
19. Per DSPM Section 6-1.400 and SRC Sec. 49-219 the developer/owner will be required to install waterlines along all property frontages (E Rio Verde Dr and N 136th St) at their expense. a. The Developer/Owner shall install a minimum of 12-inch water line across the entire E Rio Verde Dr frontage of the project. This line will not be eligible for any reimbursement agreement and shall be at sole cost of the Developer/Owner. b. The Developer/Owner shall install a minimum of 12-inch water line along N 136th St frontage of the project providing future extension to the south. The Developer/Owner may request a water line payback agreement for partial reimbursement per SRC	Addressed comments in the report.	**SEG**

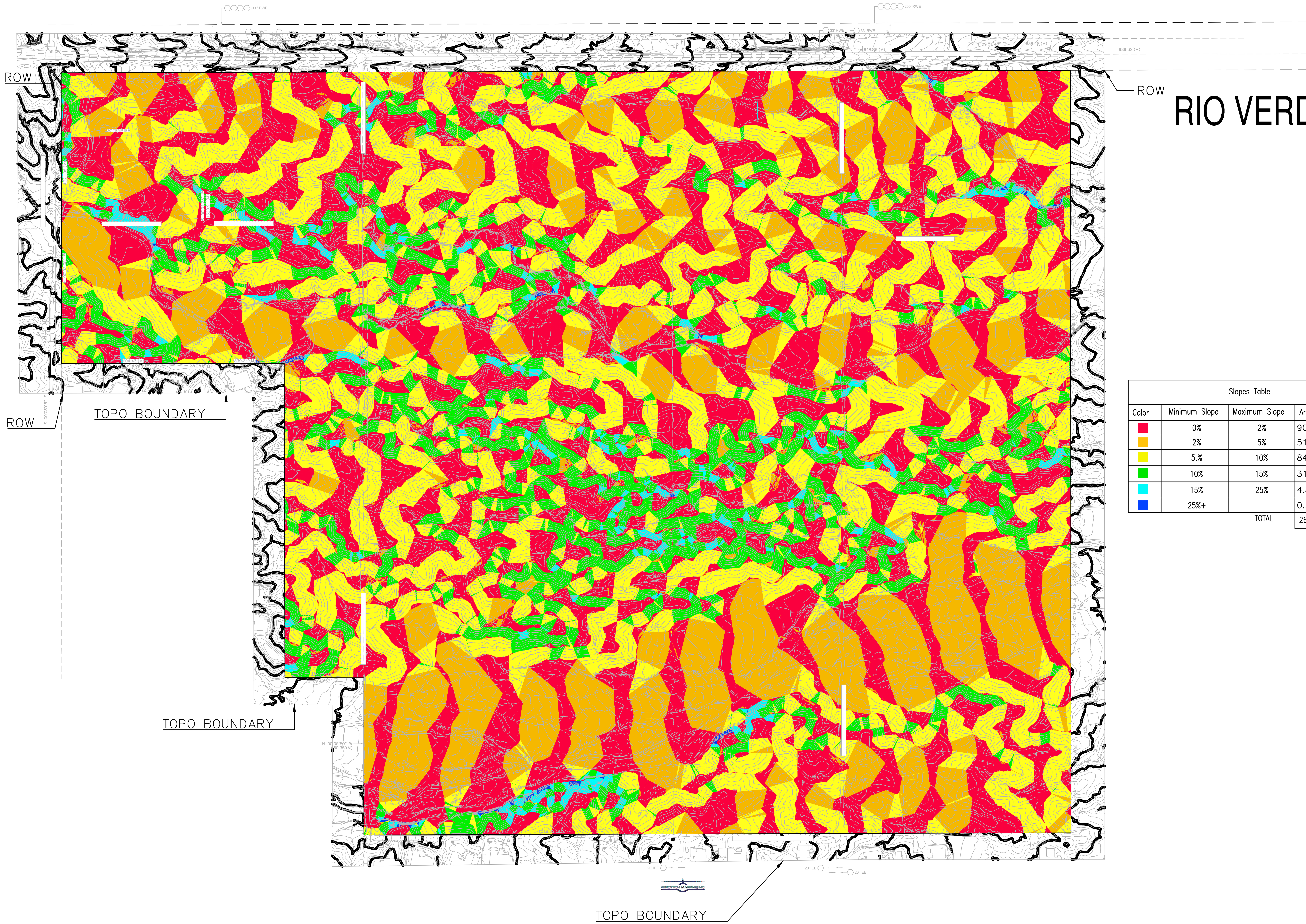
Item	Response	Responsible Party
20. If development of this project precedes Reata Ranch, the following off-site water line extensions are required: a. The Developer/Owner shall install a 16-inch water line along E Rio Verde Dr from N 122nd St to N 128th St along with a PRV and vault just west of N 128th St. This water line may be credit eligible compliant to SRC. b. The Developer/Owner shall install a 12-inch water line along E Rio Verde Dr from N 128th St to N 136th St. This water line may be credit eligible compliant to SRC.	Addressed comments in the report.	**SEG**
Significant Policy Related Issues		
Circulation		
21. Construction of sidewalk to be in ultimate location based upon build out of Rio Verde to a minor collector cross section and consistent with the conceptual Rio Verde street improvement design prepared by Maricopa County DOT. Please note or show on the development plan.	Understood. This has been noted on the development plan.	**RVi/Lokahi**
22. Please be advised a dedication of a 25-foot radius right-of-way at all street intersections. DSPM Sec. 5-3.123; Fig. 5-3.27. Please note or show on the development plan.	Understood. This has been noted on the development plan.	**RVi/Lokahi**
23. Please be advised a Dedication of a safety triangles at all street intersections will be required DSPM 5-3.123; Fig. 5-3.27. Please note or show on the development plan.	Understood. This has been noted on the development plan.	**RVi/Lokahi**
Water and Wastewater		
24. Phased development requires master plan to include off-site water per DSPM Sections 6- 1.200 and 7-1.200.	A Master Plan complying with this comment will be submitted after approval of the zoning request. Final Design Reports will be prepared prior to the submittal of each phase.	**SEG**
25. Provide utility plans per DSPM Sections 6-1.201 and 7-1.201.	Per meeting with City staff - zoning cases typically do not develop specific street or water and sewer line layouts.	**SEG**

Item	Response	Responsible Party
	Both will be included in a future Master Plan or Final Design Report based on approved zoning.	
26. The area between 136th St and 138th St is in Zone 11E. Therefore, PRV's may be required within the subdivision. Per DSPM Section 6-1.407, the developer shall install PRVs at their expense if pressure is in excess of 120 psi.	Addressed within the Preliminary Design Report.	**SEG**
27. Water sampling station will be required per DSPM Section 6-1.418.	Noted with the report.	**SEG**
28. Per 2018 DSPM Figure 6-1.2, water usage shall be 0.69 gpm/DU. Revise water demand calculation.	Disagree - added zoning and DU/Acre columns to support the stated demands. Exhibit 3, Land Use Budget, and revised Table 1 in the design report show 206 lots at 2.4 DU/AC using 0.66 gpm per lot and 54 lots at 1.0 DU/AC using 0.69 gpm per lot. These demands are consistent with the instantaneous modeling rates shown in DSPM Figure 6.1-2.	**SEG**
29. A preliminary hydraulic water modeling including fire flow fire flow condition is required per DSPM Section 6-1.201.	The water system will be modeled with submittal of the master plan and all subsequent final design reports for any phases.	**SEG**
30. Update all off-site sewer demand (Reata Ranch and surroundings in Tables 3 and 4 of BOD Section 6.2.3) calculation using a peaking factor per DSPM Section 7-1.403. Peaking factor per AAC is not acceptable.	Revised as requested in the report.	**SEG**
31. Requires on-site and off-site sewer capacity analysis in the Final Sewer Basis of Design Report per DSPM Sections 7-1.201 and 7-1.202.	Acknowledged.	**SEG**
32. Per DSPM Section 7-1.400 the developer will be required to design, construct, and upgrade any on-site and/or off-site sewer infrastructure, at their expense, necessary to provide services to the	Comment addressed in the report. Off-site improvements are described.	**SEG**

Item	Response	Responsible Party
site. The developer shall be financially responsible for the modifications to the existing Lift stations, particularly, SNGC, dual force mains/valves (if Option 1 or 2 in the BOD is chosen) and downstream gravity sewer along E Rio Verde Dr/E Dynamite Blvd (up to Alma School Rd) that will be impacted by this development.		
33. Requires backwater valves per DSPM Section 7-1.409.G.	Added this comment to the report.	**SEG**
Technical Corrections		
Site		
34. Please clarify what development parcels the Vista Corridor washes are in and what the zoning is proposed for that area.	The Vista Corridors run between development parcels. Gross parcel boundaries run to the center of the wash. Specifically, the vista corridors run through parcels 6 & 9, 7 & 10, 9 & 12, and 10 & 13. A Zoning Plan exhibit has been provided which demonstrates the zoning for the vista corridor areas.	RVi
Water and Wastewater		
35. Requires redesign of Reata Ranch lift station for increased flow.	Agreed - comment is addressed in the report.	**SEG**
36. Requires redesign of SNGC lift station for increased flow if Option 1 or 2 in the BOD is chosen.	Improvements to the station are described in the report.	**SEG**
37. BOD Recommended Option 3 proposes new dual force main along Rio Verde Dr. Need survey and field verification to confirm if there is adequate available easement to run a new set of parallel force mains.	Parallel force mains west of 122nd are not being recommended as space is limited.	**SEG**
38. BOD Recommended Option 3 proposes in-line sewer booster pump. Provide information on the type of pump.	The in-line pump configurations (one pump in the wet well and the second in an adjacent dry pit) are not being recommended.	**SEG**
39. Evaluate Option 2 for further considerations.	The recommendation is to discharge the Reata LS into the SNGC wet well with the increased demands from comment 29 and Fiesta Ranch. Developer upgrades to the SNGC lift station are required along with redesign of the Reata Ranch lift station.	**SEG**
40. See BOD redlines for additional comments	Comments are addressed in the report and via separate comment tracking sheets.	**SEG**
Circulation		

Item	Response	Responsible Party
41. Phased developments require a master circulation plan indicating phasing, street cross sections, proposed traffic control, etc. This must be approved prior to the approval of any preliminary plats	Understood. A master circulation plan will be provided prior to approval of preliminary plats.	RVi/Lokahi
42. Provide documents that show that the existing Rio Verde and 136th Street right-of-way is dedicated in fee title.	Analysis of the Title Report and ALTA Survey reflect that a 100' fee dedication exists for the south half of Rio Verde and a 55' roadway easement dedication exists for the east half of 136th Street. We will provide the fee dedications to the City as required with our zoning case.	RVi/BR
Fire		
43. Construct a roundabout at the 141st Street and Rio Verde Drive intersection. Design may be based upon the recently constructed roundabouts on Rio Verde at 118th Street and 122nd Street (one-lane each direction). Please show on the development plan.	Understood. The roundabout proposed for the 141st Street and Rio Verde Drive intersection has been identified on the Development Plan. The specific design of roadway and round-a-bout improvements will be provided with the preliminary plat.	**RVi**
44. Provide an in-lieu payment for one-quarter estimated design and construction costs for a roundabout at the 136th Street and Rio Verde Drive intersection. Costs may be based upon the recently constructed roundabouts on Rio Verde at 118th Street and 122nd Street (one- lane each direction. Please indicate on the development plan.	Understood. A note has been provided on the development plan stating that an in-lieu payment for one-quarter of the estimated design and construction costs for a roundabout at the 136th Street and Rio Verde Drive intersection.	**RVi**
45. Coordinate all off-site street improvements with the Maricopa County Department of Transportation. Provide documentation that the MCDOT has reviewed the plans and provided comments.	TI&MA was submitted to MCDOT at the end of July. On 8/15/19 received an email from Hossain Behbahani MCDOT Permitting, Construction, and Inspection stating "MCDOT has no review comments on the study since the project site is outside the Maricopa County Jurisdiction."	**Lokahi**
46. Identity all existing and proposed street right-of-way and/or private street tract widths.	The existing and proposed street right of way and private street tract widths have been identified on the streetscape & scenic corridor plan.	**RVi**
47. Identify all proposed street cross sections.	The proposed street cross sections have been identified in the narrative and on the streetscape & scenic corridor plan.	**RVi**

RIO VERDE



Slopes Table					
Color	Minimum Slope	Maximum Slope	Area (AC)	%REQ	AREA NAOS (AC)
[red]	0%	2%	90.66	25	22.67
[orange]	2%	5%	51.20	25	12.80
[yellow]	5.%	10%	84.87	35	29.70
[green]	10%	15%	31.66	45	14.25
[cyan]	15%	25%	4.83	45	2.17
[blue]	25%+		0.36	45	0.16
		TOTAL	264.05	30.95	81.75

0' 200' 400' 600'
SCALE: 1" = 200' HORIZONTAL

NORTH

SEG SUSTAINABILITY ENGINEERING GROUP
8280 E GELDING DR #101, SCOTTSDALE, ARIZONA 85260
WWW. AZSEG.COM TEL. 480.588.7226

PROJECT: RESIDENTIAL DEVELOPMENT
LOCATION: SCOTTSDALE, AZ 85244

DRAWN: ALI
DESIGNED: ALI
CHECKED: COUNSELL
PROJ. MGR.: FAKIH

DATE: 10/01/2018
ISSUED FOR: DRB

REVISION NO.: DATE:

JOB NO.:

SHEET TITLE: SLOPE ANALYSIS

SHEET NO.:

6-ZN-2019
7/11/2019

Class III Cultural Resources Survey of 264.7 Acres at the Southeast Intersection of 136th Street and Rio Verde Road in North Scottsdale, Maricopa County, Arizona

Submitted to:

Wildcat Ridge, LLC
14901 N. Scottsdale Rd. #201
Scottsdale, Arizona 85254

Technical Report 17-440
May 16, 2019

602.261.7253 | paleowest.com | 319 E. Palm Lane | Phoenix, AZ 85004

State Historic Preservation Office
Survey Report Summary Form

Section 1. Report Title

1a. Report Title: Class III Cultural Resources Survey of 264.7 Acres at the Southeast Intersection of 136th Street and Rio Verde Road in North Scottsdale, Maricopa County, Arizona

1b. Report Author(s): Emily Elizabeth Meyer, M.A., RPA

1c. Date: 5/16/2019 **1d. Report No.:** 17-440

Section 2. Project Registration/Permits

2a. ASM Accession Number: N/A

2b. AAA Permit No.: N/A

2c. ASLD Lease Application No.: N/A

2d. Other Permit Number(s): N/A

Section 3. Organization/Consulting Firm

3a. Name: PaleoWest Archaeology

3b. Internal Project Number: 17-433

3c. Internal Project Name: 136th St. and Rio Verde Rd. Class III

3d. Contact Name: Chris North

3e. Contact Address: 319 E. Palm Lane, Phoenix AZ 85004

3f. Contact Phone: 602 261-7253

3g. Contact Email: cnorth@paleowest.com

Section 4. Sponsor/Lead Agency

4a. Sponsor: Wildcat

4b. Lead Agency: City of Scottsdale Historic Preservation Office (COS)

4c. Agency Project Number(s): N/A

4d. Agency Project Name: N/A

4e. Funding Source(s): Private

4f. Other Involved Agencies: N/A

4g. Applicable Regulations: ARS §41-865, COS Ordinance Nos. 3242 & 3243, Scottsdale Revised Code, Chapter 46, Article VI

State Historic Preservation Office
Survey Report Summary Form

Section 5. Description of Project or Undertaking:

The project area is slated for a private residential development consisting of single-family homes. Development of the project area is subject to compliance with ARS §41-865, COS Ordinance Nos. 3242 & 3243, and Scottsdale Revised Code, Chapter 46, Article VI.

Section 6. Project Area:

The project area is an irregularly shaped square that encompasses a total of 264.7 acres of undeveloped private land located on the south side of Rio Verde Road between 136th Street and 142nd Street. The project area measures 1,298 m east-west by 974 m north-south.

Section 7. Project Area Information:

7a. Address: N/A

7b. Route: N/A **7c. Mileposts Limits:** N/A

7d. Nearest City/Town: Scottsdale **7e. County:** Maricopa

7f. Project Locator UTMs: (NAD 83, Zone 12) 427945 mE 3733276 mN

7g. Baseline & Meridian: G&SRB&M **7h. USGS Quadrangle(s):** McDowell Peak, Arizona (1973)

7i. Legal Description(s): Section 31, T5N, R6E

Section 8. Survey Area

8a. Total Acres: 264.7

8b. Survey Area.

1. Land Jurisdiction	2. Total Acres Surveyed	3. Total Acres Not Surveyed	4. Justification for Areas Not Surveyed
Private	264.7	0	N/A

Section 9. Environmental Contexts

9a. Landform: Bajada north of the McDowell Mountains

9b. Elevation: 2,450-2,500 ft above mean sea level

9c. Surrounding Topographic Features: The McDowell Mountains are 3.6 miles southwest and Fraesfield Mountain is 1.2 miles northwest of the project area

6-ZN-2019
7/11/2019

9d. Nearest Drainage (Distance/Direction)**:**	The Verde river is approximately 7 miles east of the project area. Unnamed drainages are present throughout the project area
9e. Local Geology:	Late and Middle Pleistocene Superficial Deposits (Arizona Geological Survey 2013)
9f. Vegetation:	Arizona Upland Division of the Sonoran Desertscrub Community (Brown 1994). Plants within the project area include brittlebush, saguaro, creosote, mesquite, and grasses.
9g. Soils/Deposition:	Light brown loamy and clayey soils
9h. Buried Deposits:	Not Likely
9i. Justification:	No artifacts or features were observed in the project area. Few known sites are in the area.

Section 10. Built Environment:

The project area is undeveloped. The built environment surrounding the project area consists of residential properties along the west, south, and east edges of the survey area. The north edge and portions of the east edge of the project area are bound by Rio Verde Road and 136th Street.

Section 11. Inventory Class Completed

11a. Class I Inventory:	☒
11b. Researcher(s):	Emily Elizabeth Graff, M.A., RPA
11c. Class II Survey:	N/A
11d Sampling Strategy:	N/A
11e. Class III Inventory:	☒

Section 12. Background Research Sources

12a. AZSITE:	☒
12b. ASM Archaeological Records Office:	☐
12c. SHPO Inventories and/or SHPO Library:	☐
12d. NRHP Database:	☒
12e. ADOT Portal:	☐

12f. GLO Maps: Plat 0203-A, filed 5-9-1960, shows two unimproved roads, a fence, and a reservoir. One of these roads is within the project area; however, it was not identified during the survey. Plat 0203-B, filed 7-31-1963, shows two

unimproved roads, one of which is in the project area. Plat 00203 and Plat 00178, filed 2-26-1921, show a structure, road, and well.

12g. Land-Managing Agency Files: City of Scottsdale Historic Preservation Office

12h. Tribal Cultural Resources Files: N/A

12i. Local Government Websites: City of Scottsdale Historic Register

12j. Other: Historic USGS 1:62,500 Camelback (1904) map depicts one unimproved road within the project area. USGS 1:250,000 Mesa (1958) map depicts one road within the project area and one trail outside of the project area. USGS 1:125,000 Cave Creek (1930) map depicts one unimproved road within the project area. No evidence of the three historic roads within the project area was identified during the survey area.

Section 13. Background Research Results

13a. Previous Projects Within One-Mile Radius of Project Area.

1. Project Reference Number	2. Project Name	3. Author(s)	4. Year
1987-243.ASM	North Scottsdale Reconnaissance	AZSITE	1987
1998-219.ASM	320 Acre Archaeological Survey	Stubing & Mitchell	1998
2000-539.ASM	Rio Mountain Estates Survey	Wenker	2000
2000-548.ASM	Scottsdale National Survey	Stubing	2000
2001-439.ASM	132nd Street & Dynamite Survey	Lundin	2001
2012-317.ASM	10 Acres – Rio Verde and 128th Street Survey	Breternitz	2004
2012-554.ASM	Pemberton Trail	Tactikos	2012
2013-9.ASM	PHO Wayward	Luchetta & Moses	2013

13b. Previously Recorded Cultural Resources Within One-Mile Radius of Project Area.

1. Site No./ Name	2. Affiliation	3. Site Type	4. Eligibility Status	5. Associated Reference(s)	6. Inside project area?
AZ U:5:269(ASM)	Cohonina and Unknown Prehistoric (12,000 B.C.-A.D.1500)	Grinding surfaces	Considered Eligible	Lundin 2001	No

13c. Historic Buildings/Districts/Neighborhoods Within One-Mile Radius of Project Area.

1. Property Name or Address	2. Year	3. Eligibility Status	4. Inside project area?
N/A	N/A	N/A	N/A

13d. Historic USGS Map and GLO Properties Within One-Mile Radius of Project Area.

1. Property Description	2. Map Year	3. Inside Project Area?
1904 USGS Camelback map contains 1unimproved road; not relocated	1904	Yes
1958 GLO Plat 0203-B shows unimproved road; not relocated	1958	Yes
1958 USGS Mesa map contains 1 road; not relocated	1958	Yes
1960 GLO Plat 0203-A shows unimproved road; not relocated	1960	Yes
1921 GLO Plat 00178 and 00203 shows a road	1921	No
1921 GLO Plat 00178 and 00203 shows a structure	1921	No
1921 GLO Plat 00178 and 00203 shows a well	1921	No
1930 USGS Cave Creek map shows 1 unimproved road	1930	No
1958 USGS Mesa map contains 1 trail	1958	No
1960 GLO Plat 0203-A shows 1 reservoir	1960	No
1960 GLO Plat 0203-A shows a fence	1960	No
1963 GLO Plat 0203-B shows an unimproved road	1963	No

Section 14. Cultural Contexts

14a. Prehistoric Culture: Paleo-Indian; Archaic; Hohokam

14b. Protohistoric Culture: Pima

14c. Indigenous Historic Culture: Maricopa, Pima, and Yavapai

14d. Euro-American Culture: A.D. 1860–present

Section 15. Field Survey Personnel

15a. Principal Investigator: Chris North, M.A., RPA

15b. Field Supervisor: Emily Elizabeth Graff, M.A., RPA

15c. Crew: Caroline Klebacha and John Rockhill

15d. Fieldwork Date(s): December 5, 2017

Section 16. Survey Methods

16a. Transect Intervals: 20 m apart

16b. Coverage (%): 100%

16c. Site Recording Criteria: Arizona State Museum (Fish 1995)

16d. Ground Surface Visibility: 90%

6-ZN-2019
7/11/2019

16e. Observed Disturbances: Disturbances are minimal and include modern trash and trails utilized by nearby residents.

Section 17. Field Survey Results

17a. No Cultural Resources Identified: ☒

17b. Isolated Occurrences (IOs) Only: ☐

17c. Number of IOs Recorded: N/A

Section 18. Comments/Recommendations:

The project area was previously surveyed in 2000, during which no cultural resources were identified (Stubing 2000). PaleoWest surveyed the 264.7-acre project area in accordance with the COS Ordinance Nos. 3242 and 3243, Chapter 46, Section VI. A Certificate of No Effect is recommended for this project. No avoidance measures or additional investigations are required.

Section 19. Attachments

19a. Project Location Map: ☒ (Figure 1)

19b. Land Jurisdiction Map: ☒ (Figure 1)

19c. Background Research Map(s): ☒ (Figure 2)

19d. GLO Map(s): ☒ (Figure 3)

19e. Project Area Photograph(s): ☒ (Figure 3)

19f. References: ☒

Section 20. Consultant Certification

I certify the information provided herein has been reviewed for content and accuracy and all work meets applicable agency standards.

Date:5/16/2019

Signature

Principal Investigator

Title

Section 21. Discovery Clause

If previously unreported cultural resources are identified during project activities, all ground disturbing activities in the vicinity of the discovery shall cease until the COS Historic Preservation Office is notified and the nature and significance of the discovery is evaluated.

If human remains are encountered during ground-disturbing activities, all work must immediately cease within 30 m (100 ft) of the discovery and the area must be secured. The COS, Arizona State Museum (ASM), SHPO, and appropriate Tribes must be notified of the discovery. All discoveries will be treated in accordance with Arizona Revised Statutes (A.R.S. § 41-844 and A.R.S. § 41-865) and work must not resume in this area without authorization from ASM.

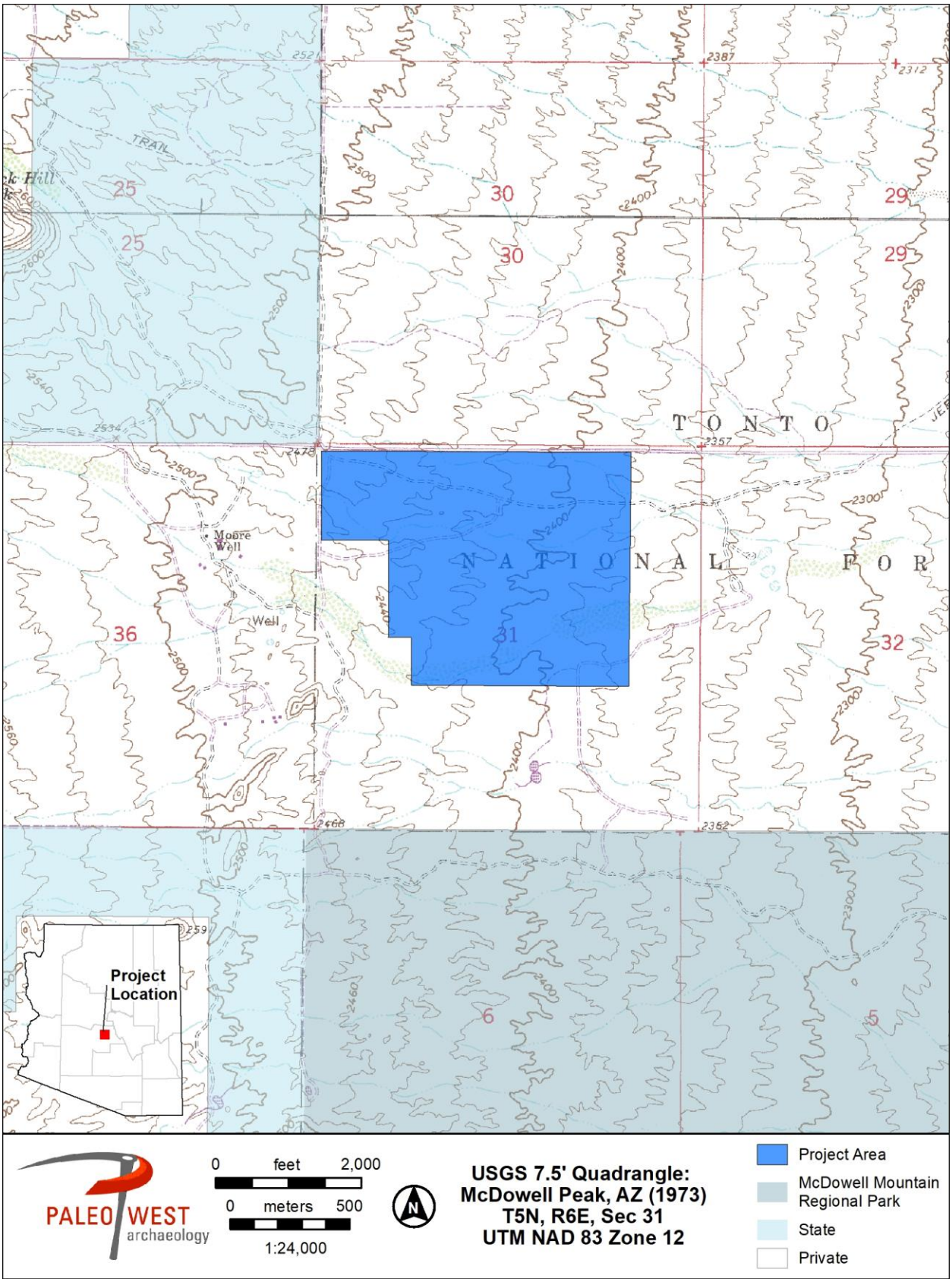
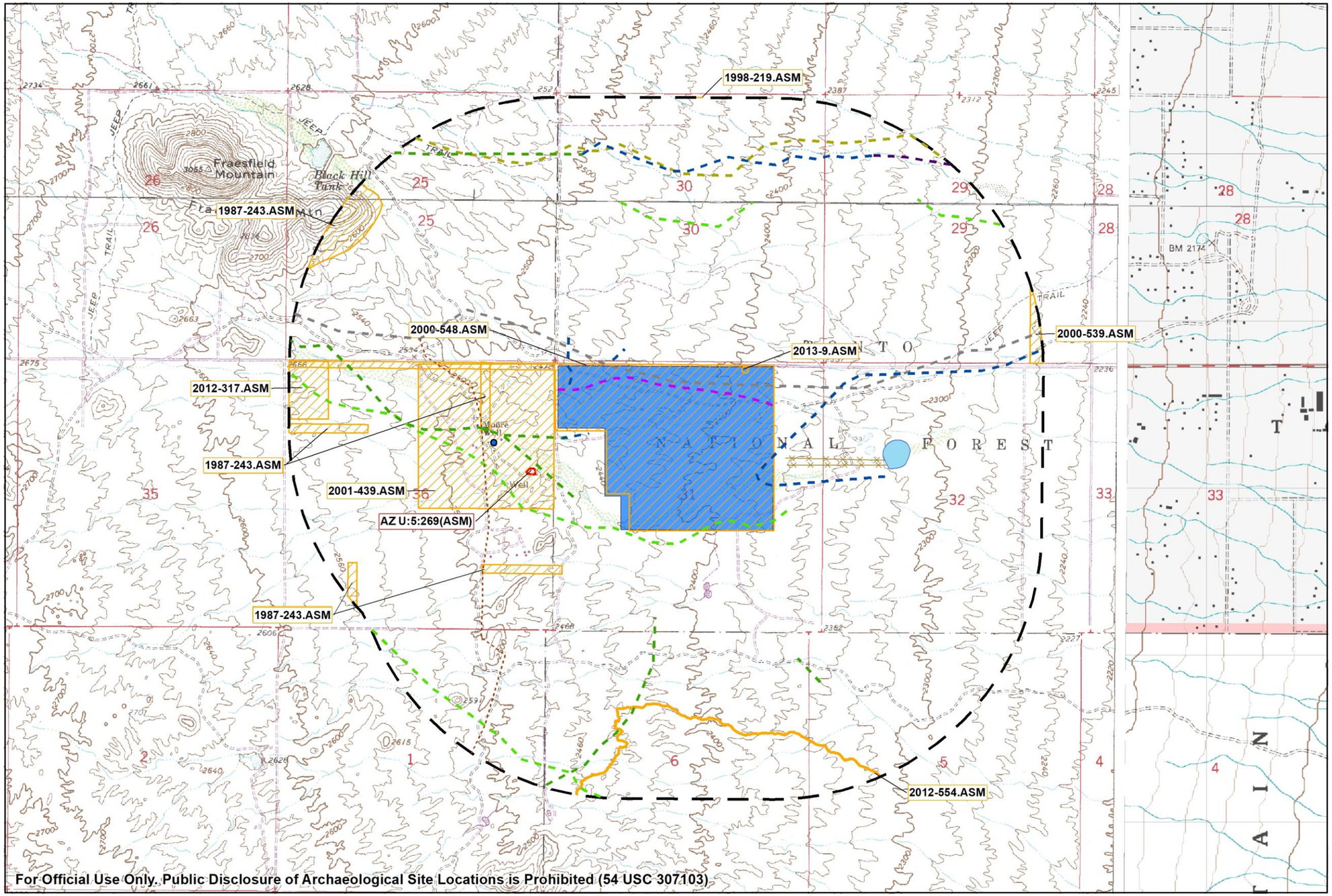


Figure 1. Project location map showing land jurisdiction.

6-ZN-2019
7/11/2019



PALEO WEST archaeology

Project Location

USGS 7.5' Quadrangle:
Wildcat Hill, AZ (1983)
McDowell Peak, AZ (1973)
T5N, R5E, Sec 25, 36
T5N, R6E, Sec, 29-32
T4N, R5E, Sec 1
T4N, R6E, Sec 5, 6
6th PM
UTM NAD 83 Zone 12N

- Project Area
- File Search Area
- Previous Site
- Previous Project

USGS Resource
- Trail, 1958
- Road, 1958
- Unimproved Road, 1904
- Unimproved Road, 1930

GLO Resource
- Reservoir, 1960
- Road, 1921
- Unimproved Road, 1953
- Unimproved Road, 1960
- Unimproved Road, 1963
- Fence, 1960
- Structure, 1921
- Well, 1921

0 feet 2,500
0 meters 800
1:24,000

Map Location

Figure 2. Project area map showing previous projects, sites, and historic map properties.

6-ZN-2019
7/11/2019

Figure 3. Overview photograph of the project area, facing north.

References

Arizona Geological Survey

2013 The Geological Map of Arizona. Electronic document, http://data.azgs.az.gov/geologic-map-of-arizona/#, accessed December 7, 2017.

Breternitz, Cory

2004 *A Cultural Resources Survey of Approximately 10 Acres Land at the Southeast Corner of Rio Verde Drive and 128th Street in North Scottsdale, Maricopa County, Arizona.* Technical Report No. 04-27. Soil Systems, Phoenix.

Brown, David

1994 *Biotic Communities: Southwestern United States and Northwestern Mexico*, edited by D E. Brown. University of Utah Press, Salt Lake City.

Fish, P. R.

1995 Revised Site Definition Policy. Arizona State Museum, Tucson.

Luchetta, Sarah and Jim Moses

2013 *A Class I and Class III Cultural Resources Assessment Survey of the Proposed Wireless Telecommunications Facility Verizon Wireless PHO Wayward Located at the Southeast Corner of Rio Verde Drive and 141st Street in Scottsdale, Maricopa County, Arizona*. Antigua Archaeology, LLC., Prescott.

Lundin, Deil

2001 *An Archaeological Survey of 160 Acres at 132nd Street and Dynamite Boulevard in Scottsdale, Maricopa County, Arizona.* Technical Report No. 01-375, SWCA Environmental Consultants Inc., Phoenix.

Stubing, Michael

2000 *An Archaeological Survey of Approximately 275 Acres for the Proposed Scottsdale National Development in North Scottsdale, Maricopa Country, Arizona.* Technical Report No. 00-78, SWCA Environmental Consultants Inc., Phoenix.

Stubing, Michael and Douglas Mitchell

1998 *An Archaeological Survey of 320 Acres Northeast of Scottsdale, Maricopa County, Arizona.* Technical Report No. 98-42. SWCA Environmental Consultants Inc., Phoenix.

Tactikos, Joanne

2012 *Cultural Resource Survey for the McDowell Mountain Regional Park Recreation-Pemberton Trails near Fountain Hills, Maricopa County, Arizona.* Technical Report No. 12-220-CSUR. Archaeological Consulting Services., Tempe.

Wenker, Chris.

2000 *Archaeological Survey of Rio Mountain Estates, Maricopa County, Arizona.* Technical Report No. 00-89. SWCA Environmental Consultants Inc., Phoenix.