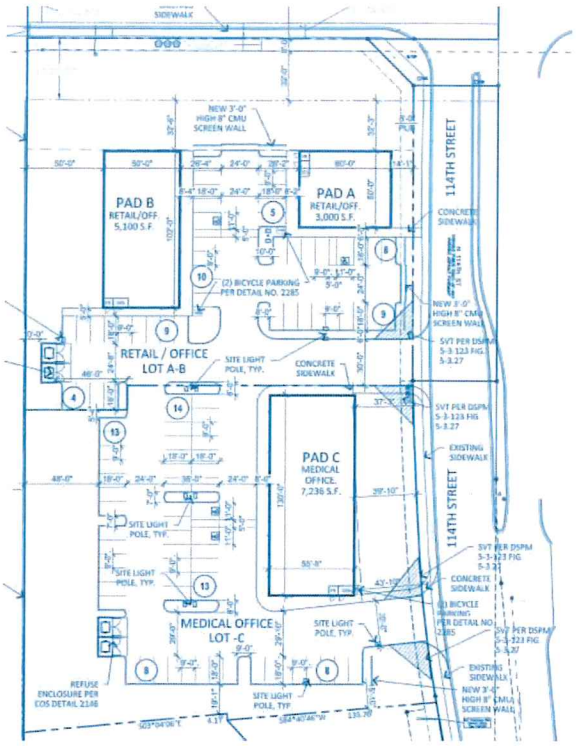
114th Street and Shea Boulevard

Traffic Impact & Mitigation Analysis



Prepared for:

HAWKINS COMPANIES
COMMERCIAL DEVELOPERS

Hawkins Companies
855 W. Broad St., Suite 300
Boise, ID 83702

ACCEPTED
CITY OF SCOTTSDALE
TRANSPORTATION DEPARTMENT

DATE: 2020-08-06

REVIEWER: Doug Ostler

With separate comments on site plan

Registered Professional Engineer (Civil)
CERTIFICATE NO.
51806
SHELLY A.
SORENSEN
Date Signed: 05/08/20
ARIZONA, U.S.A.

Prepared by:

Lokahi

Lōkahi, LLC
4657 E. Cotton Gin Loop,
Suite 102
Phoenix, AZ 85004

Project Number: 20.5093
May 8, 2020

8-ZN-2020
5/22/2020

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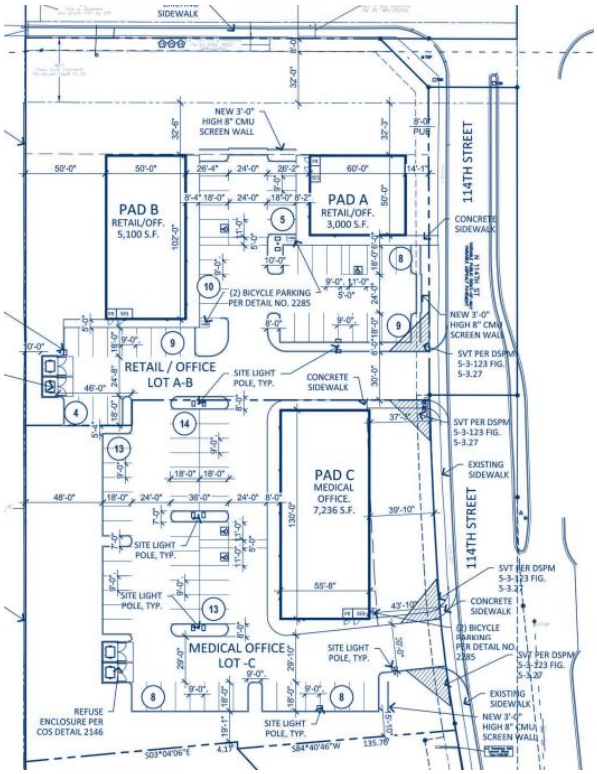

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1. INTRODUCTION AND EXECUTIVE SUMMARY

1.1. PURPOSE OF REPORT AND STUDY OBJECTIVES

Lōkahi, LLC (Lōkahi) was retained by Hawkins Companies to complete a Traffic Impact & Mitigation Analysis for the proposed 114th Street and Shea Boulevard development. The development is located at the southwest corner of 114th Street/Frank Lloyd Wright Boulevard and Shea Boulevard in Scottsdale, Arizona.

The objective of this Traffic Impact & Mitigation Analysis is to analyze the traffic related impacts of the proposed development to the adjacent roadway network. See **Figure 1** for the vicinity map.

The proposed site will be comprised of three (3) buildings, totaling approximately 15,336 square feet (SF) of leasable area. Approximately 8,100 square feet is anticipated to be utilized for retail use, while the remaining 7,236 square feet is anticipated for medical or general office use.

1.2. EXECUTIVE SUMMARY

This report presents the analyses and the results of a traffic study prepared for the proposed 114th Street and Shea Boulevard development that will be located on the southwest corner of 114th Street/Frank Lloyd Wright Boulevard and Shea Boulevard. The proposed development will be comprised of 8,100 square feet (SF) of retail space and 7,236 square feet of medical/general office space.

This Traffic Impact and Mitigation Analysis includes:

- Level of service analysis of existing conditions for the weekday AM and PM peak hours
- Crash Analysis
- Trip Generation for the existing and proposed development
- Trip Generation for the prior approved development and the proposed development
- Trip Generation comparison for the previously approved development with the proposed development
- Level of service analysis for the no build and build capacity analysis with the buildout of development (Year 2021) weekday AM and PM peak hours

The following are the three (3) intersections included in this study:

- 114th Street/Frank Lloyd Wright Boulevard and Shea Boulevard (1)
- 114th Street and Driveway B/Mirage Crossing Driveway (2)
- 114th Street and Driveway A (3)

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Existing Capacity Analysis

The AM and PM peak hour existing conditions capacity analysis were completed for the two (2) existing study intersections. All movements operate at a LOS D or better with the exception of the following intersection:

114th Street/Frank Lloyd Wright Boulevard and Shea Boulevard (1) – Signalized

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

Trip Generation

Previously Approved Development

In 2007 there was a prior site plan that was approved for the proposed site. The prior site included a 5,250 (SF) bank and a 5,200 (SF) office building.

1 single family lot ignored. 2 other single family lots in common not shown

Trip Generation – Prior Approved Development

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Drive-in Bank	912	5.25	1000 SF GFA	525	50	29	21	107	54	53
General Office Building	710	5.2	1000 SF GFA	60	31	27	4	7	1	6
			Total	585	81	56	25	114	55	59

The previously approved development is anticipated to generate 585 weekday trips, with 81 trips occurring during the AM peak hour and 114 trips during the PM peak hour.

Proposed Development

The proposed development will be comprised of 8,100 square feet (SF) of retail space and 7,236 square feet of medical/general office space. For the purposes of this report, the medical/general office building is assumed to be occupied entirely by medical office uses.

Uses weighted average rates instead of fitted curve as expected for ADT and PM. Possibly expect more trips. Overall, not a large difference.

Trip Generation – Proposed Development

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Shopping Center	820	8.1	1000 SF GLA	306	8	5	3	31	15	16
Medical-Dental Office Building	720	7.236	1000 SF GFA	190	22	17	5	27	8	19
			Total	496	30	22	8	58	23	35

The proposed development is anticipated to generate 496 weekday trips, with 30 trips occurring during the AM peak hour and 58 trips during the PM peak hour.

Trip Generation Comparison

The build out of the proposed development requires a minor general plan amendment. A comparison between the trips generated by the prior approved development and the proposed development was calculated.

Trip Generation – Comparison

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Drive-in Bank	912	5.25	1000 SF GFA	525	50	29	21	107	54	53
General Office Building	710	5.2	1000 SF GFA	60	31	27	4	7	1	6
Previously Approved Development - Total				585	81	56	25	114	55	59
Shopping Center	820	8.1	1000 SF GLA	306	8	5	3	31	15	16
Medical-Dental Office Building	720	7.236	1000 SF GFA	190	22	17	5	27	8	19
Proposed Development - Total				496	30	22	8	58	23	35
Difference				-89	-51	-34	-17	-56	-32	-24

The build out of the proposed development is anticipated to generate 89 fewer weekday trips, 51 fewer trips during the AM peak hour, and 56 fewer trips during the PM peak hour, when compared with the prior approved development.

Year 2021

Year 2021 analyses was completed with and without the build out of the proposed development. An annual growth rate of 1.2% was applied to the existing traffic volumes.

A capacity analysis was completed for both the AM and PM peak hours for year 2021, with and without the build out of the proposed development. All movements are maintained at the existing level of service without the build out of the proposed development.

All movements operate at a LOS D or better or are maintained at the no build level of service with the build out of the proposed development.

Carry over stipulations from prior case

Recommendations

The recommendations with the build out of the proposed development include:

- **114th Street and Driveway B (2)**
  Buildout of full access driveway, approximately 350 feet south of Shea Boulevard

- **114th Street and Driveway A (3)**
  Buildout of right-in/right-out driveway, approximately 215 feet south of Shea Boulevard

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

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

2. PROPOSED DEVELOPMENT

The study area is located in the City of Scottsdale, Arizona. The proposed development will be located on the southwest corner of 114th Street and Shea Boulevard. See **Figure 1** for a vicinity map.

The proposed site will be comprised of three (3) buildings, totaling approximately 15,336 square feet (SF) of leasable area. Approximately 8,100 square feet is anticipated to be utilized for retail use, while the remaining 7,236 square feet is anticipated for medical or general office use.

There are two (2) proposed access points to the development along 114th Street evaluated in this study.

114th Street and Driveway B/Mirage Crossing Driveway (2) is located along 114th Street, approximately 350 feet south of Shea Boulevard. This will be a full access driveway, allowing all movements into and out of the site. The buildout of this driveway will form the western leg of the existing 114th Street and Mirage Crossing Driveway intersection.

114th Street and Driveway A (3) is located along 114th Street approximately 215 feet south of Shea Boulevard. This will be a right-in/right-out driveway.

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

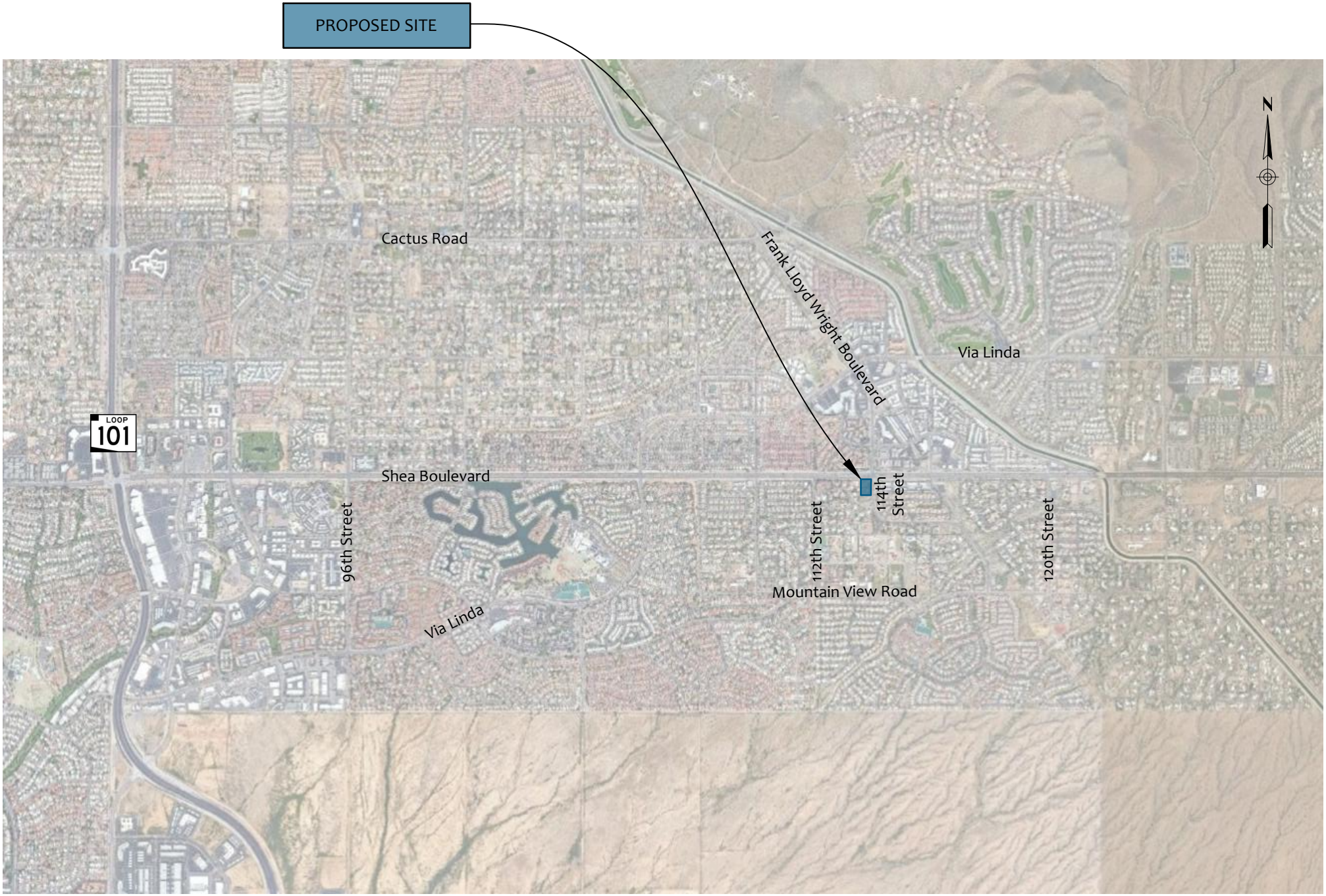

FIGURE 1 | VICINITY MAP

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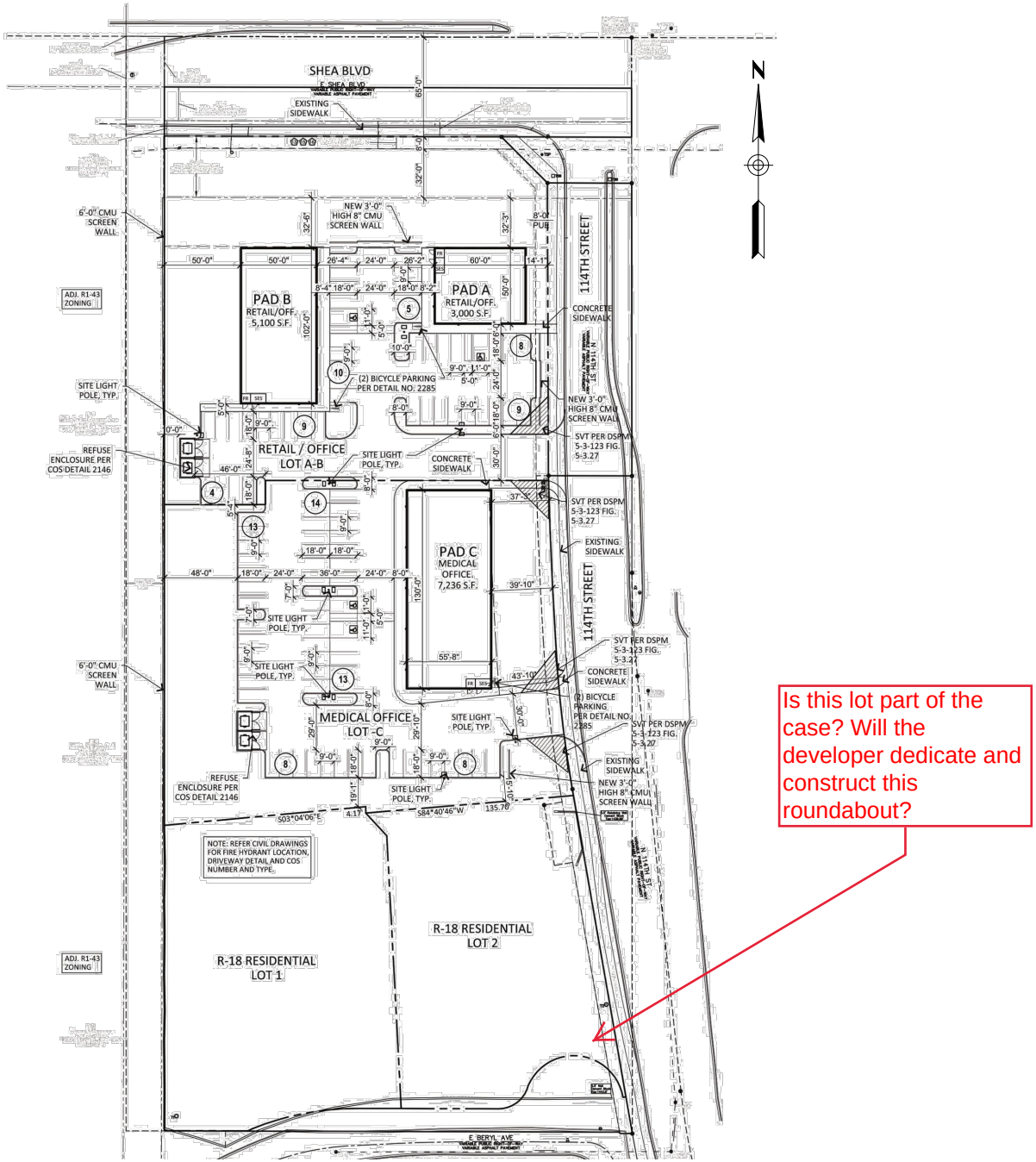

FIGURE 2 | SITE PLAN

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3. AREA CONDITIONS

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

3.1. STUDY ROADWAY SEGMENTS

Shea Boulevard, bordering the proposed development to the north, runs east-west and provides three (3) through lanes for each direction of travel, with a raised landscaped median. There is a posted speed limit of 50 miles per hour (mph), within the vicinity area. The City of Scottsdale classifies Shea Boulevard as a major arterial, according to the *City of Scottsdale Transportation Master Plan,* dated July 5, 2016. The City of Scottsdale's *2018 Average Daily Segment Traffic Volumes* map reports an ADT of 39,700 vehicles per day, between Via Linda and 114th Street, and an ADT of 44,000 vehicles per day, between 114th Street/Frank Lloyd Wright Boulevard and 124th Street.

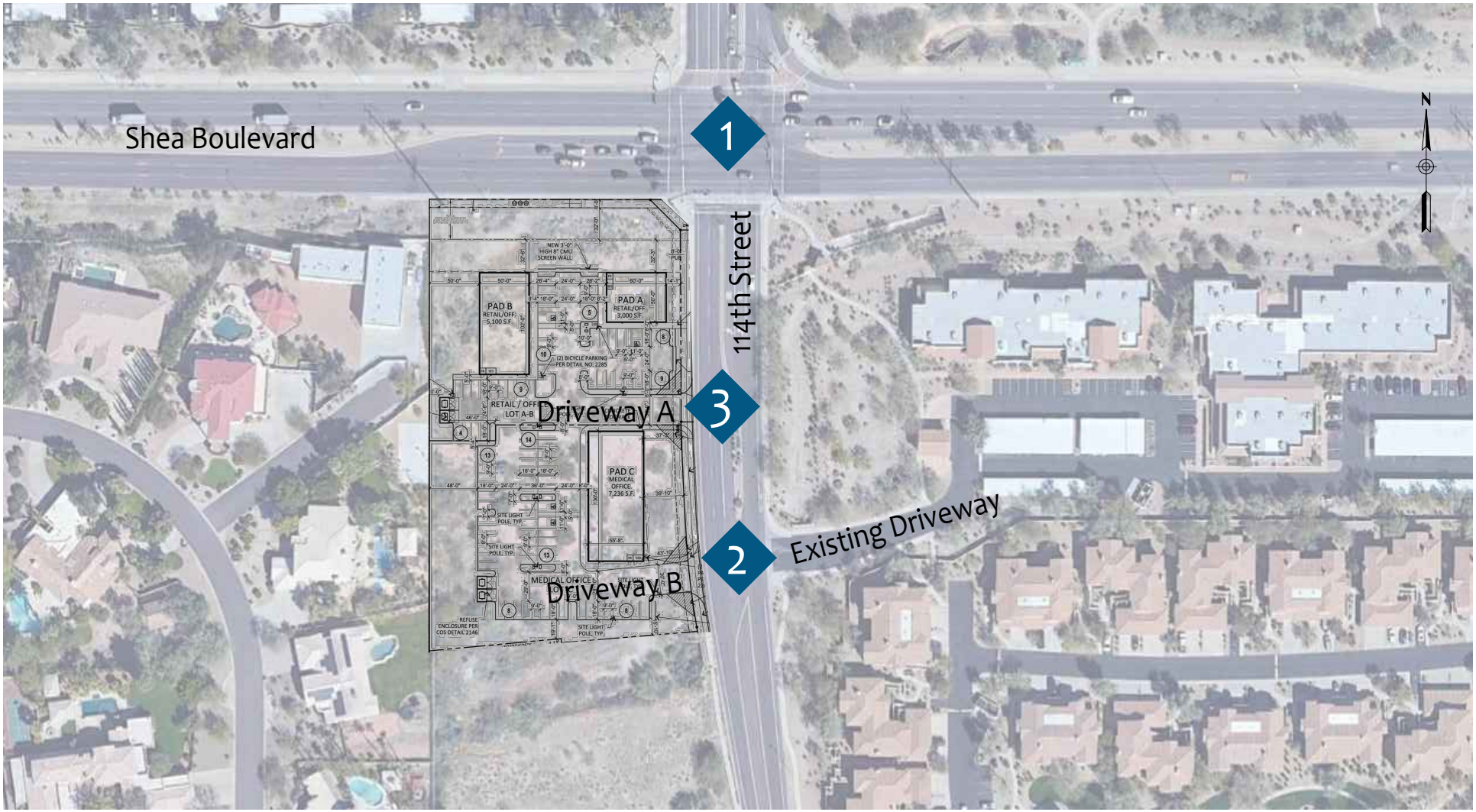
114th Street is generally a north-south roadway, bordering the proposed development to the east. South of Shea Boulevard, 114th Street provides one (1) through lane for northbound travel and approximately 300 feet of two (2) through lanes that taper into one (1) for southbound travel. North of Shea Boulevard is 114th Street becomes Frank Lloyd Wright Boulevard and provides two (2) through lanes in each direction of travel, with a raised landscaped median. Approximately 800 feet south of Shea Boulevard, 114th Street becomes Cochise Drive. There is a posted speed limit of 30 mph south of Shea Boulevard and a posted speed limit of 40 mph north of Shea Boulevard. According to the *City of Scottsdale Transportation Master Plan,* dated July 5, 2016, 114th Street is classified as a minor collector, while Frank Lloyd Wright Boulevard is classified as a minor arterial. The City of Scottsdale's *2018 Average Daily Segment Traffic Volumes* map reports an ADT of 20,500 vehicles per day, north of Shea Boulevard, and an ADT of 2,800 vehicles per day, south of Shea Boulevard.

3.2. STUDY INTERSECTIONS

114th Street/Frank Lloyd Wright Boulevard and Shea Boulevard (1) currently operates as a signalized intersection. The northbound approach provides two (2) dedicated left turn lanes and one (1) shared through-right turn lane. The southbound approach provides two (2) dedicated left turn lanes, two (2) through lanes, and one (1) dedicated right turn lane. The eastbound approach provides two (2) dedicated left turn lanes, two (2) through lanes, and one (1) shared through-right turn lane. The westbound approach provides one (1) dedicated left turn lane, three (3) through lanes, and one (1) channelized right turn lane.

114th Street and Driveway B/Mirage Crossing Driveway (2) currently operates as a one-way stop-controlled T-intersection, with stop control on the westbound approach. The northbound approach provides one (1) shared through-right turn lane. The southbound approach provides one (1)

dedicated left turn lane and two (2) through lanes. The westbound approach provides one (1) shared left-right turn lane.



Legend

X Intersection

FIGURE 3 | STUDY AREA

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3.3. SURROUNDING AREA LAND USE

The approximate 3.8-acre site is bordered by Shea Boulevard to the north, and 114th Street to the east. Residential developments border the western and southern edges of the proposed development. Additionally, offices and commercial developments are located to the east, across 114th Street, as well as on the northeast corner of 114th Street and Shea Boulevard (1).

3.4. SITE ACCESSIBILITY

Roadway System

The study area is located in the City of Scottsdale, Arizona. Arizona State Route 101 is located approximately three and one-quarter mile west of the proposed development. Scottsdale's street network is generally built as a one-mile grid system. Within the near vicinity of the proposed site there is a well-developed roadway network.

Pedestrian Facilities

There are continuous sidewalks provided adjacent to 114th Street and Shea Boulevard, with the exception of an approximate 900 feet segment along the south side of Shea Boulevard, between 112th Street and 114th Street, where no sidewalk is currently provided. Marked crosswalks are provided at all four (4) legs of the signalized intersection of 114th Street and Shea Boulevard (1).

Bicycle Facilities, Trails and Pathways

Bike lanes are currently provided along 114th Street, south of Shea Boulevard in both directions of travel.

An unpaved trail exists on the south side of Shea Boulevard, east of 114th Street. West of 114th Street, a shared use path and an unpaved path are planned. The parcels are stipulated to dedicate ROW and construct the paths.

Transit Facilities

Valley Metro Express Route 514 operates along Shea Boulevard within the study area. This route connects Fountain Hills to Downtown Phoenix. According to the Valley Metro System Map, a stop is located at on the northeast corner of the intersection of 114th Street/Frank Lloyd Wright Boulevard and Shea Boulevard (1). This route operates Monday – Friday.

In addition, the City of Scottsdale provides five trolley routes. The Mustang Route (MSTG) circulates around the north Scottsdale area, including along Via Linda and Frank Lloyd Wright Boulevard. A trolley stop is located approximately one-half mile north of the proposed development at the intersection of Via Linda and Frank Lloyd Wright Boulevard. This trolley route operates every 20 minutes between 4:42 am and 11:15 pm Monday – Friday and 5:13 am – 10:45 pm Saturday and Sunday. See **Figure 4**.

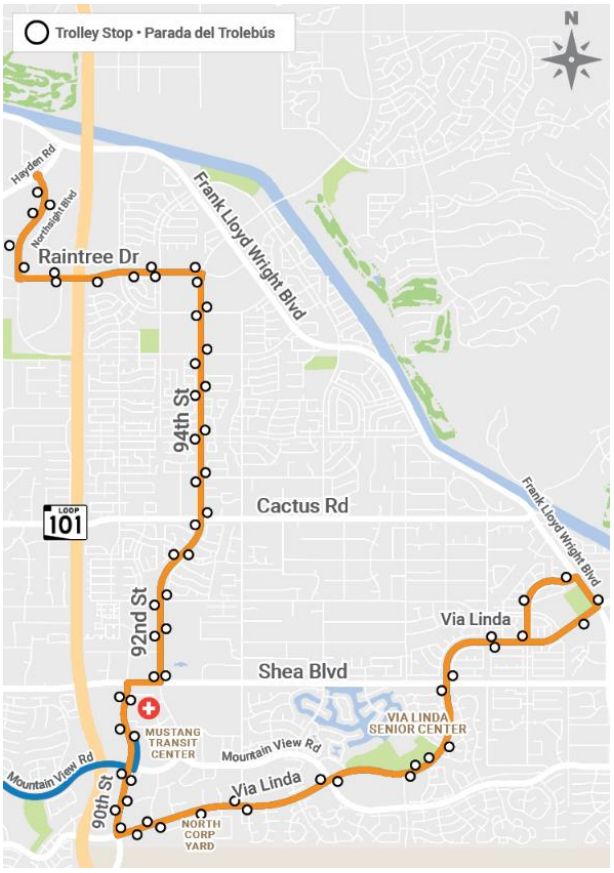


Figure 4 – City of Scottsdale Trolley Mustang Route

3.5. COLLISION HISTORY

The most recent 3-year collision history, from March 2017 to February 2020, was obtained from the City of Scottsdale. See **Appendix B** for collision data. The data included the following intersection and segment:

- 114th Street/Frank Lloyd Wright Boulevard and Shea Boulevard (1)
- Shea Boulevard, between 112th Street and 116th Street

114th Street and Shea Boulevard (1)

During the three-year period, there were a total of seven (7) crashes, of which four (4) were reported as no injury, and three (3) were either not reported or unknown. There was a total of five (5) rear end, one (1) sideswipe same direction, and one (1) single vehicle crashes.

Of the seven (7) reported collisions, four (4) collisions involved vehicles speeding too fast for roadway conditions and colliding with a vehicle slowing or stopping in the roadway, one (1) involved an improper turn of a vehicle, and 2 collisions involved unknown violations.

Shea Boulevard, between 112th Street and 116th Street

During the three-year period, there were a total of four (4) crashes, of which one (1) reported possible injury, one (1) reported no injury, and two (2) were either not reported or unknown. All four (4) were reported as rear end crashes.

Of the four (4) reported collisions, all involved vehicles that were speeding too fast for roadway conditions and colliding with a vehicle slowing or stopping in the roadway.

3.6. COLLISION RATES

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

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

Table 1 – Collision Rates – Study Roadway Segments

Segment	From	To	Collision Rate	Rank
Shea Boulevard	Via Linda	Frank Lloyd Wright Boulevard	0.45	237
Shea Boulevard	Frank Lloyd Wright Boulevard	124th Street	0.45	239
114th/117th Street	Mountain View Road	Shea Boulevard	0.0	307
2018 City of Scottsdale Average Segment Collision Rate			1.53	

Table 2 – Collision Rates – Study Intersections

Intersection	Collision Rate	Rank
Frank Lloyd Wright and Shea	0.78	54
2018 Average Intersection Collision Rate	0.58	

4. EXISTING CONDITIONS

4.1. EXISTING LAND USE

The approximate 3.8-acre site is currently undeveloped land and comprised of four (4) parcels. The existing zoning consists of approximately 1.50-acres of Commercial Office (C-0) and approximately 2.57-acres of Single-Family Residential (R1-18). Commercial Office (C-0) zoning accommodates the development of office and related uses adjacent to commercial areas. Single-Family Residential (R1-18) zoning accommodates the development of individual homes on lot sizes such that a low-density population is maintained.

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 Wednesday, March 4, 2020 turning movement counts were obtained from 7:00 to 9:00 am and from 4:00 to 6:00 pm at the following intersections:

- 114th Street and Shea Boulevard (1)
- 114th Street and Driveway B/Mirage Crossing Driveway (2)

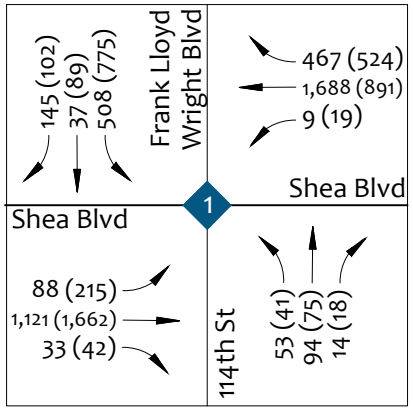
Additionally, on Wednesday, March 4, 2020, bi-directional tube counts for 24-hours in 15-minute intervals were collected along the following two (2) roadway segments:

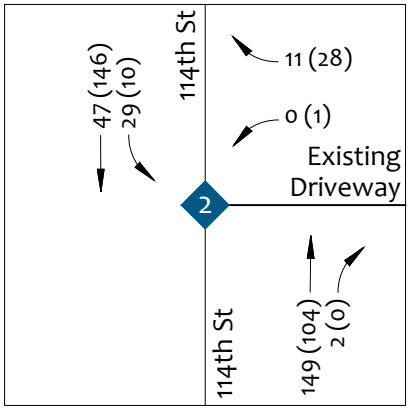
- Shea Boulevard, west of 114th Street
- 114th Street, south of Shea Boulevard

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

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

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





Legend

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

FIGURE 5 | EXISTING TRAFFIC VOLUMES

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4.3. EXISTING CAPACITY ANALYSIS

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

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

Table 3 – Level of Service Criteria

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

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

114th Street and Shea Boulevard (1) – Signalized

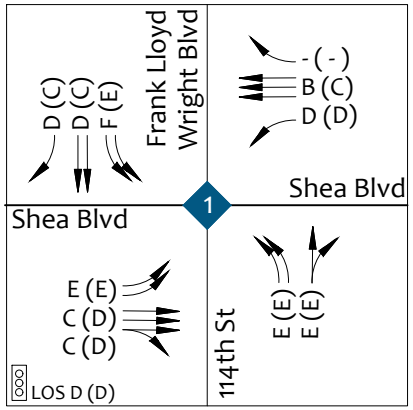
- EB left AM and PM peak hours operate at LOS E
- NB left AM and PM peak hours operate at LOS E
- NB shared through-right AM and PM peak hours operate at LOS E
- SB left AM and PM peak hours operate at LOS F and E, respectively

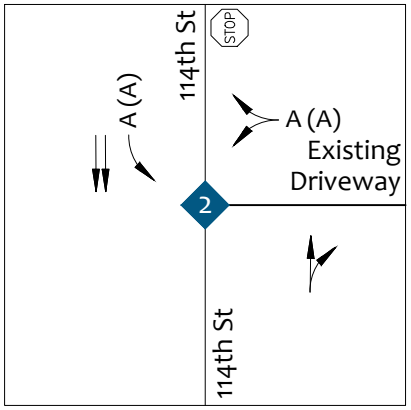
The existing AM and PM peak hour level of service and delay for unsignalized and signalized intersections are shown in **Table 4**.

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

Table 4 – Existing Level of Service and Delay

Intersection	Existing Conditions			
	AM PEAK		PM PEAK	
	LOS	DELAY	LOS	DELAY
114th Street/Frank Lloyd Wright Boulevard and Shea Boulevard (1) - Signalized				
Oveall Intersection	D	50.4	D	42.1
Eastbound Left	E	62.0	E	63.2
Eastbound Through	C	26.7	D	37.2
Eastbound Shared Through-Right	C	27.9	D	41.4
Westbound Left	D	41.3	D	51.5
Westbound Thorugh	B	18.9	C	26.6
Westbound Right	-	-	-	-
Northbound Left	E	56.6	E	56.2
Northbound Shared Through-Right	E	58.0	E	66.5
Southbound Left	F	205.4	E	59.7
Southbound Through	D	42.7	C	32.1
Southbound Right	D	47.6	C	33.6
114th Street and Mirage Crossing Driveway (2) - Unsignalized				
Westbound Shared Left-Right	A	9.2	A	9.0
Southbound Left	A	7.6	A	7.5





Legend

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

FIGURE 6 | EXISTING CAPACITY ANALYSIS

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5. PROJECTED TRAFFIC

5.1. TRIP GENERATION

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

Previously Approved Development

In 2007 there was a prior site plan that was approved for the proposed site. See the site plan in **Appendix G**. The prior site included a 5,250 (SF) bank and a 5,200 (SF) office building. The trip generation for the prior approved development was calculated utilizing ITE Land Use 912 – Drive-In Bank and ITE Land Use Code 710 – General Office Building. Trips generated by the Drive-In Bank, with 5,250 (SF) and General Office Building, with 5,200 (SF) are shown in **Table 5** below. Detailed trip generation calculations are provided in **Appendix H**.

Table 5 – Trip Generation – Previously Approved Development

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Drive-in Bank	912	5.25	1000 SF GFA	525	50	29	21	107	54	53
General Office Building	710	5.2	1000 SF GFA	60	31	27	4	7	1	6
			Total	585	81	56	25	114	55	59

The previously approved development is anticipated to generate 585 weekday trips, with 81 trips occurring during the AM peak hour and 114 trips during the PM peak hour.

Proposed Development

The proposed site will be comprised of three (3) buildings, totaling approximately 15,336 square feet (SF) of leasable area. Approximately 8,100 square feet is anticipated to be utilized for retail use, while the remaining 7,236 square feet is anticipated for medical or general office use.

Therefore, the trip generation for the proposed office development was calculated utilizing ITE Land Use 720 – Medical-Dental Office Building and Land Use 850 – Shopping Center. Trips generated by the three (3) proposed buildings, comprised of 15,336 (SF), are shown in **Table 6** below. Detailed trip generation calculations are provided in **Appendix H**.

Table 6 – Trip Generation – Proposed Development

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Shopping Center	820	8.1	1000 SF GLA	306	8	5	3	31	15	16
Medical-Dental Office Building	720	7.236	1000 SF GFA	190	22	17	5	27	8	19
			Total	496	30	22	8	58	23	35

The proposed development is anticipated to generate 496 weekday trips, with 30 trips occurring during the AM peak hour and 58 trips during the PM peak hour.

Trip Generation Comparison

The build out of the proposed development requires a minor general plan amendment. A trip generation comparison between the prior approved development and proposed development is shown in **Table 7** below, in order to demonstrate the trip generation difference.

Table 7 – Trip Generation – Comparison

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Drive-in Bank	912	5.25	1000 SF GFA	525	50	29	21	107	54	53
General Office Building	710	5.2	1000 SF GFA	60	31	27	4	7	1	6
Previously Approved Development - Total				585	81	56	25	114	55	59
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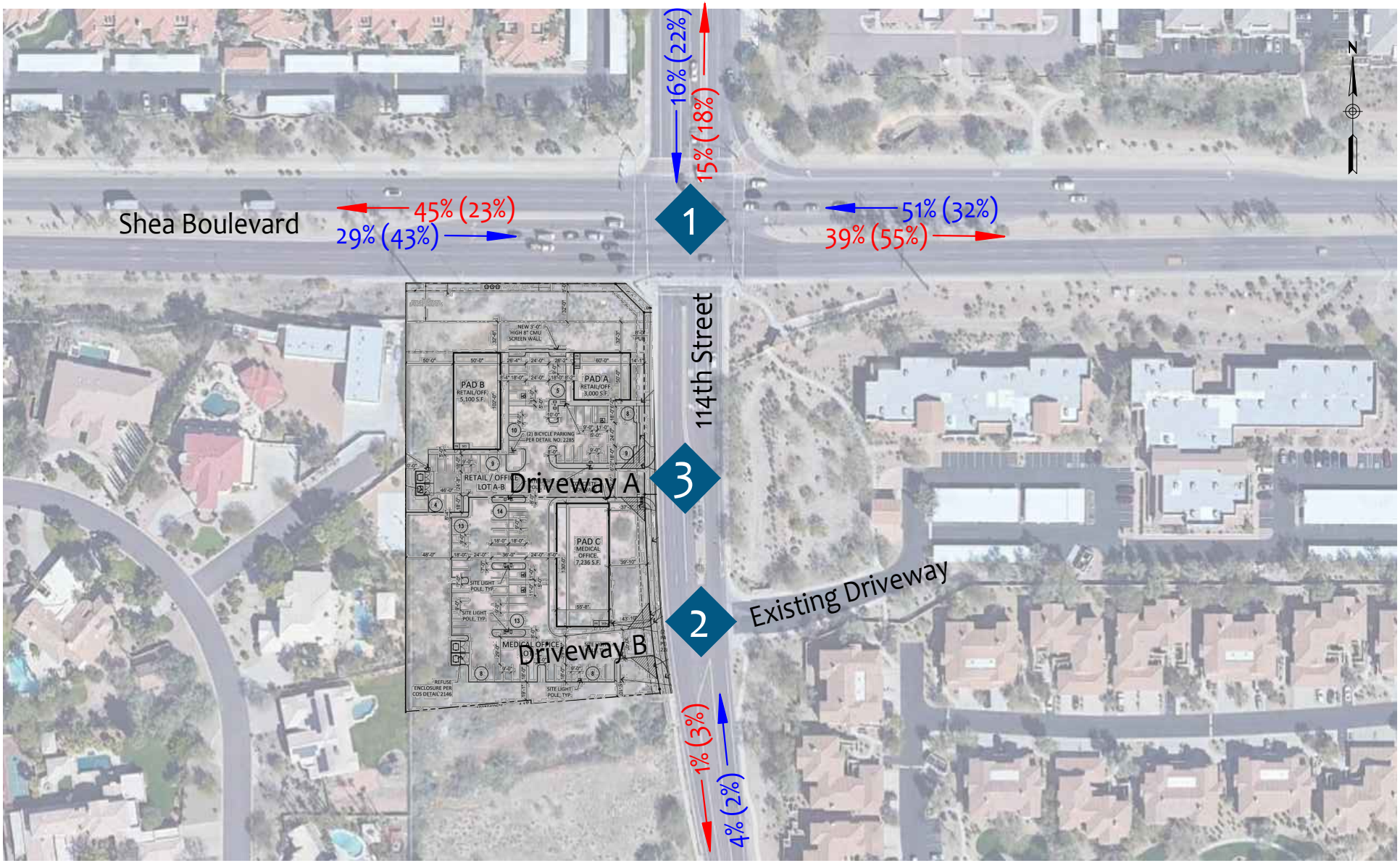
Medical-Dental Office Building	720	7.236	1000 SF GFA	190	22	17	5	27	8	19
Proposed Development - Total				496	30	22	8	58	23	35
Difference				-89	-51	-34	-17	-56	-32	-24

The build out of the proposed development is anticipated to generate 89 fewer weekday trips, 51 fewer trips during the AM peak hour, and 56 fewer trips during the PM peak hour, when compared with the prior approved development.

5.2. TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution procedure determines the general pattern of travel for vehicles entering and leaving the proposed development. The trip distribution for the proposed development is based on the distribution of the existing traffic. The trip distribution is shown in **Figure 7.**

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



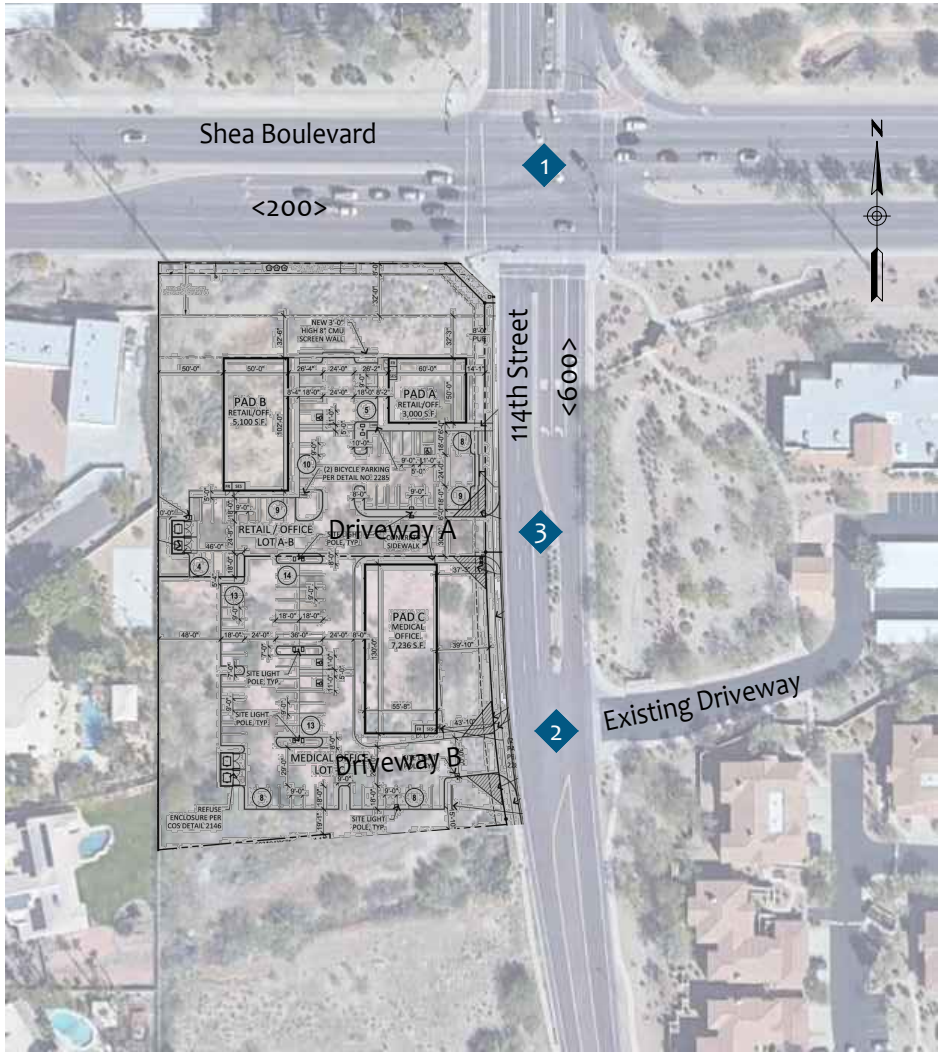
Legend

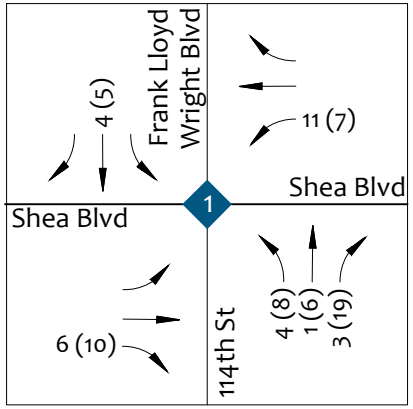
AM(PM) Inbound Trip Distribution Percentages

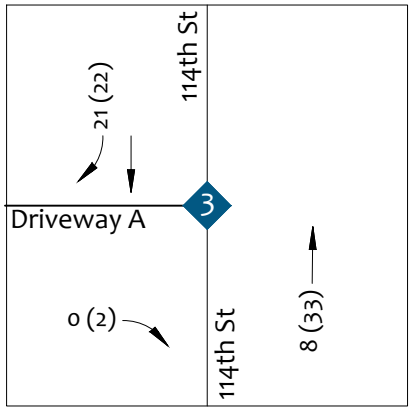
AM(PM) Outbound Trip Distribution Percentages

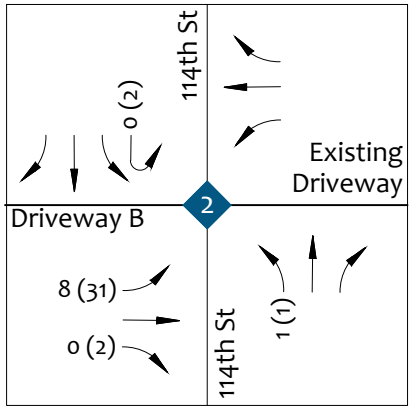
FIGURE 7 | TRIP DISTRIBUTION

8-ZN-2020
5/22/2020









Legend

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

FIGURE 8 | SITE TRAFFIC VOLUMES

8-ZN-2020
5/22/2020

6. FUTURE CONDITIONS (YEAR 2021 – OPENING YEAR)

The proposed 114th Street and Shea development is anticipated to be constructed and ready to open in the year 2021. This section analyzes the effects the proposed development will have on the surrounding roadway network during the opening year of 2021.

6.1. YEAR 2021 BACKGROUND TRAFFIC VOLUMES

According to the 2019 Maricopa Associations of Governments (MAG) socioeconomic projections in the City of Scottsdale within the study area, it is estimated that in the year 2018 the population will be approximately 20,900. MAG estimates that the 2020 population of the surrounding area to be 21,400. This results in an approximate annual growth rate of 1.19%.

A 1.2% annual growth rate was utilized. See **Appendix I** for the MAG socioeconomic projections.

See **Figure 9** for the year 2021 background traffic volumes, which includes a 1.2% annual growth applied to the existing traffic volumes.

6.2. YEAR 2021 BUILD TRAFFIC VOLUMES

When the site traffic (**Figure 8**) is added to the year 2021 background traffic (**Figure 9**), the result is the 2021 build traffic volumes. This represents the traffic volumes with the build out of the proposed development. The year 2021 build traffic volumes are shown in **Figure 10**.

6.3. YEAR 2021 NO BUILD CAPACITY ANALYSIS

The capacity and level of service for the study area intersections were evaluated for the year 2021 no build scenario. The corresponding traffic volumes are shown in **Figure 9**. The signal timing splits were optimized and adjusted for the future traffic volumes. PHF was assumed to be 0.92.

The detailed capacity analysis sheets can be found in **Appendix J**.

The 2021 no build AM and PM peak hour level of service and delay for unsignalized and signalized intersections are shown in **Table 8**.

The results of the 2021 no build capacity analysis level of service is shown in **Figure 11.** All movements operate at a LOS D or better or at the same level of service as the existing conditions.

6.4. YEAR 2021 BUILD CAPACITY ANALYSIS

The capacity and level of service for the study area intersections were evaluated for the year 2021 build traffic volumes. See **Figure 10**. The signal timing splits were optimized and adjusted for the future traffic volumes, and a PHF of 0.92 was used.

The capacity and level of service for the study area intersections were evaluated for the year 2021 build traffic volumes.

The results of the 2021 build capacity analysis level of service is shown in **Figure 12**. All movements operate at a LOS D or better or at the same level of service as the 2021 no build capacity analysis. The *HCM 6th Edition* does not give any level of service results for the u-turns that occur at the southbound left turn lane at the intersection of 114th Street and Mirage Crossing Driveway/Driveway B (2). The result for that movement were taken from the *HCM 2000* analysis results.

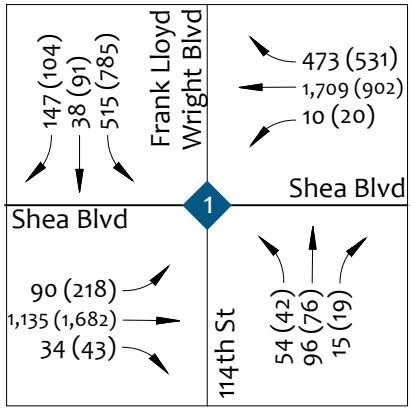
The 2021 build AM and PM peak hour level of service and delay for unsignalized and signalized intersections are shown in **Table 8**.

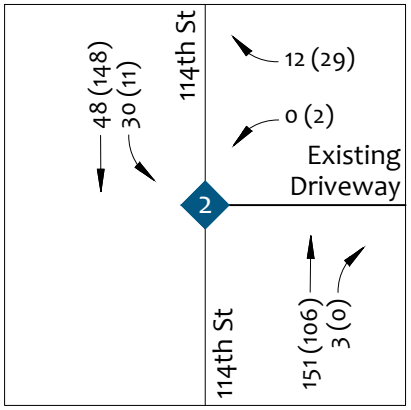
See **Figure 12** year 2021 AM and PM peak hour capacity analysis. The detailed capacity analysis sheets can be found in **Appendix K**.

Table 8 – 2021 No Build and Build Level of Service and Delay

Intersection	2021 Background Conditions				2021 Build Conditions			
	AM PEAK		PM PEAK		AM PEAK		PM PEAK	
	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY
114th Street/Frank Lloyd Wright Boulevard and Shea Boulevard (1) - Signalized								
Oveall Intersection	D	53.7	D	45.0	D	53.7	D	48.0
Eastbound Left	E	62.9	E	64.9	E	62.9	E	64.9
Eastbound Through	C	27.0	D	40.8	C	27.1	D	43.6
Eastbound Right	C	28.3	D	46.4	C	28.4	D	50.2
Westbound Left	D	41.6	D	53.6	D	42.3	D	54.1
Westbound Thorugh	B	19.7	C	29.1	C	20.0	C	30.0
Westbound Right	-	-	-	-	-	-	-	-
Northbound Left	E	56.8	E	56.3	E	56.9	E	56.6
Northbound Right	E	57.8	E	70.0	E	57.7	E	73.0
Southbound Left	F	225.7	E	62.2	F	225.7	E	68.5
Southbound Through	D	42.5	C	30.7	D	42.2	C	29.9
Southbound Right	D	47.6	C	32.2	D	47.2	C	31.4
114th Street and Mirage Crossing Driveway (2) - Unsignalized								
Eastbound Shared Left-Through-Right	-	-	-	-	B	10.1	B	10.3
Westbound Shared Left-Right	A	9.2	A	9.0	-	-	-	-
Westbound Shared Left-Through-Right	-	-	-	-	A	9.3	A	9.1
Northbound Left	-	-	-	-	A	7.3	A	7.5
Southbound Left*	A	7.6	A	7.5	A	7.6	A	7.5
114th Street and Driveway A (3) - Unsignalized								
Eastbound Right	-	-	-	-	A	0.0	A	8.8

**Results from HCM 2000, Not HCM 6th Edition*



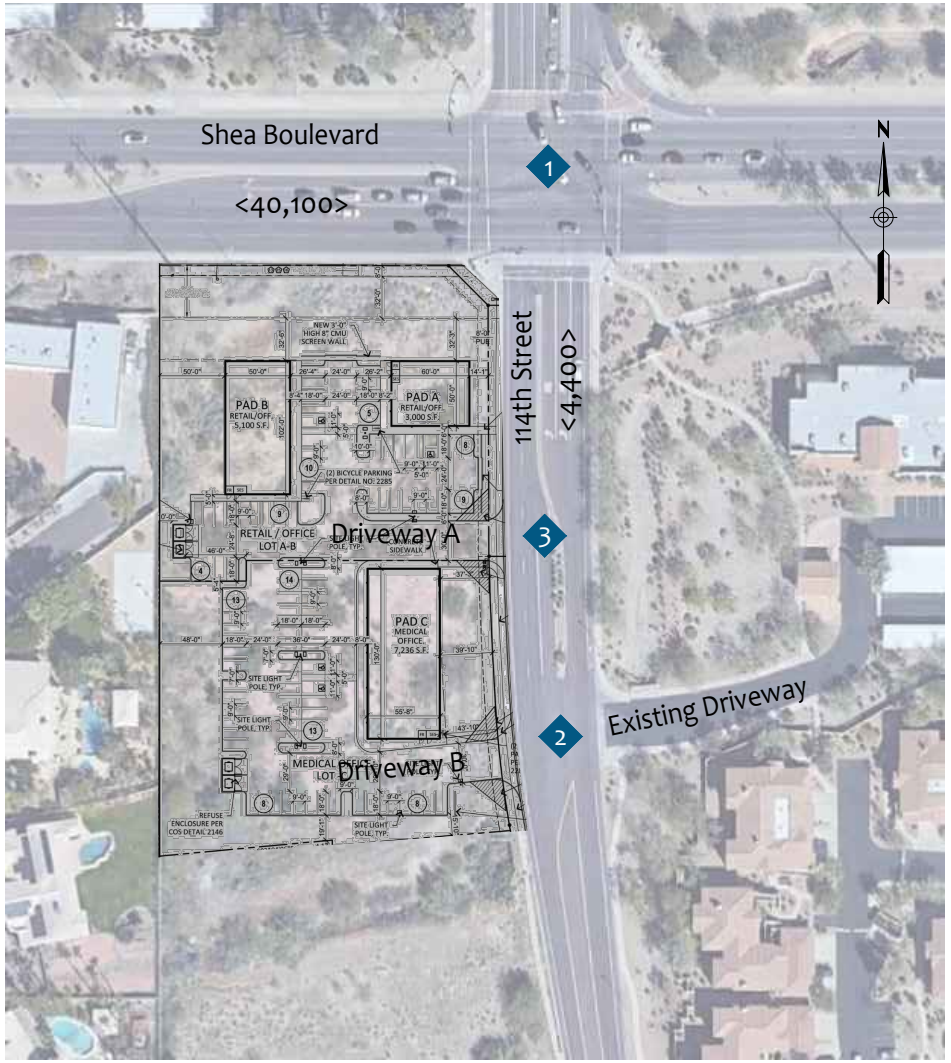


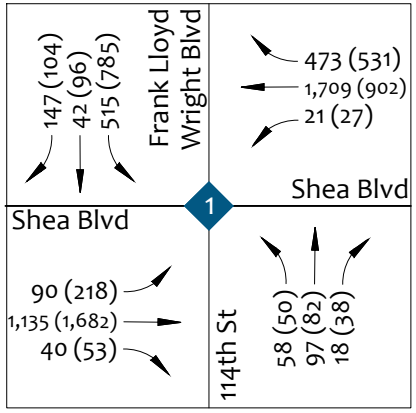
Legend

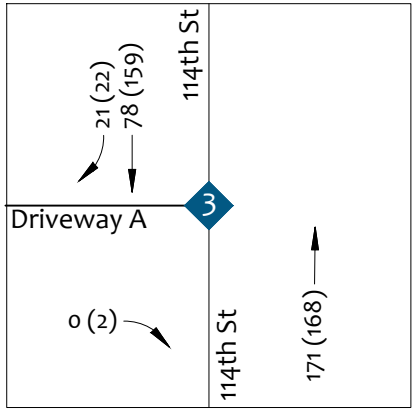
AM(PM)	Peak Hour Traffic Volumes
X	Intersection
<ADT>	Average Daily Traffic

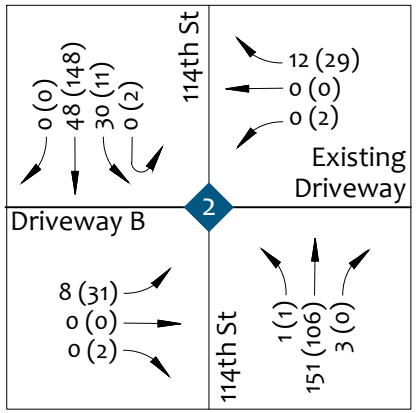
FIGURE 9 | YEAR 2021 BACKGROUND TRAFFIC VOLU

8-ZN-2020
5/22/2020







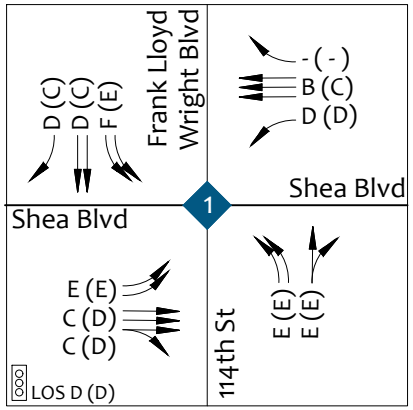


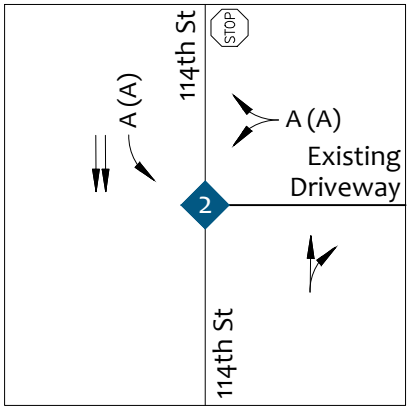
Legend

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

FIGURE 10 | YEAR 2021 BUILD TRAFFIC VOLUMES

8-ZN-2020
5/22/2020



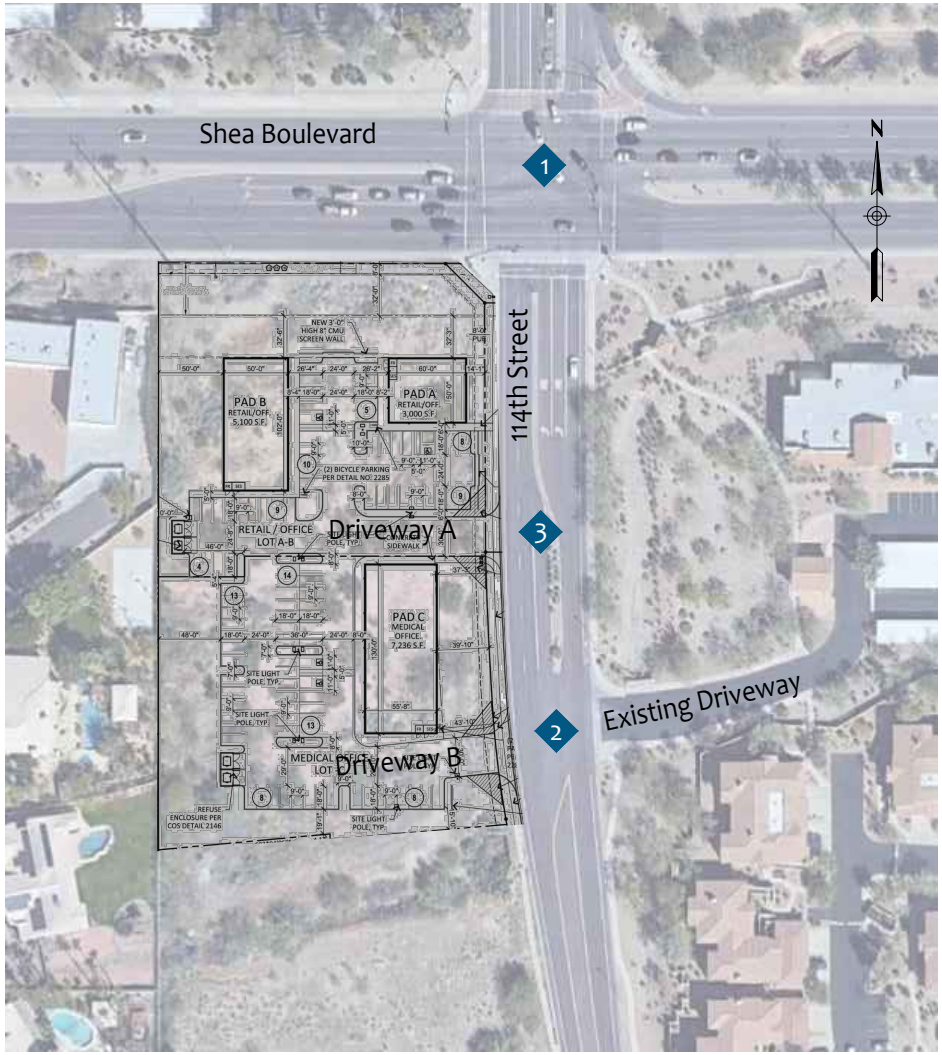


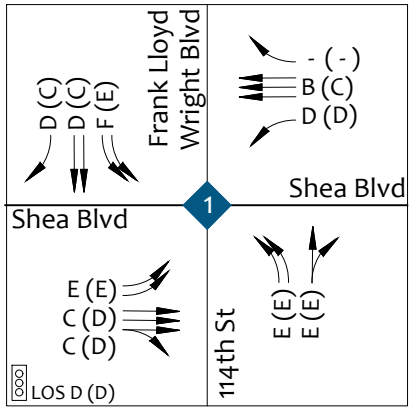
Legend

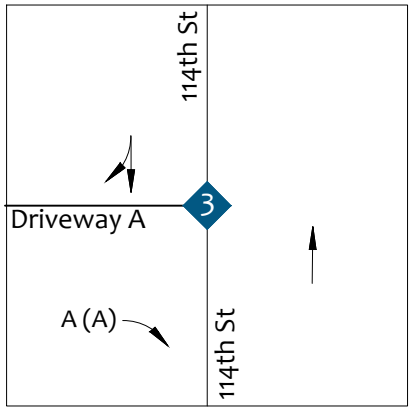
AM(PM)	Peak Hour Capacity Analysis
X	Intersection
	Lane Configuration

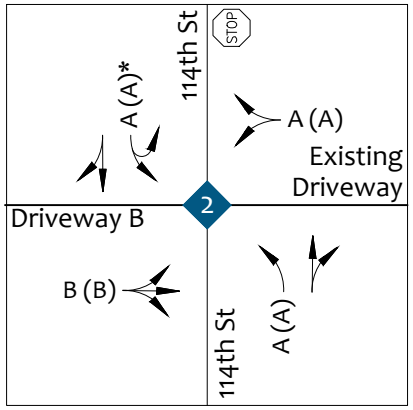
FIGURE 11 | YEAR 2021 BACKGROUND CAPACITY ANAL`

8-ZN-2020
5/22/2020









*LOS from HCM 2000 Results

Legend

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

FIGURE 12 | YEAR 2021 BUILD CAPACITY ANAL

8-ZN-2020
5/22/2020

7. RECOMMENDATIONS & CONCLUSIONS

The proposed 114th Street and Shea Boulevard development will be located on the southwest corner of 114th Street/Frank Lloyd Wright Boulevard and Shea Boulevard, in Scottsdale, Arizona. The proposed site will be comprised of three (3) buildings, totaling approximately 15,336 square feet (SF) of leasable area. Approximately 8,100 square feet is anticipated to be utilized for retail use, while the remaining 7,236 square feet is anticipated for medical or general office use.

Existing Capacity Analysis

The AM and PM peak hour existing conditions capacity analysis were completed for the two (2) existing study intersections. All intersections currently operate with movements at a level of service D or better with the exception of the following intersection:

114th Street and Shea Boulevard (1) – Signalized

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

Trip Generation

Previously Approved Development

In 2007 there was a prior site plan that was approved for the proposed site. The prior site included a 5,250 (SF) bank and a 5,200 (SF) office building.

Trip Generation – Prior Approved Development

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Drive-in Bank	912	5.25	1000 SF GFA	525	50	29	21	107	54	53
General Office Building	710	5.2	1000 SF GFA	60	31	27	4	7	1	6
			Total	585	81	56	25	114	55	59

The previously approved development is anticipated to generate 585 weekday trips, with 81 trips occurring during the AM peak hour and 114 trips during the PM peak hour.

Proposed Development

The proposed development will be comprised of 8,100 square feet (SF) of retail space and 7,236 square feet of medical/general office space. For the purposes of this report, the medical/general office building is assumed to be occupied entirely by medical office uses.

Trip Generation – Proposed Development

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Shopping Center	820	8.1	1000 SF GLA	306	8	5	3	31	15	16
Medical-Dental Office Building	720	7.236	1000 SF GFA	190	22	17	5	27	8	19
Total				**496**	**30**	**22**	**8**	**58**	**23**	**35**

The proposed development is anticipated to generate 496 weekday trips, with 30 trips occurring during the AM peak hour and 58 trips during the PM peak hour.

Trip Generation Comparison

The build out of the proposed development requires a minor general plan amendment. A comparison between the trips generated by the prior approved development and the proposed development was calculated.

Trip Generation – Comparison

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Drive-in Bank	912	5.25	1000 SF GFA	525	50	29	21	107	54	53
General Office Building	710	5.2	1000 SF GFA	60	31	27	4	7	1	6
Previously Approved Development - Total				**585**	**81**	**56**	**25**	**114**	**55**	**59**
Shopping Center	820	8.1	1000 SF GLA	306	8	5	3	31	15	16
Medical-Dental Office Building	720	7.236	1000 SF GFA	190	22	17	5	27	8	19
Proposed Development - Total				**496**	**30**	**22**	**8**	**58**	**23**	**35**
Difference				**-89**	**-51**	**-34**	**-17**	**-56**	**-32**	**-24**

The build out of the proposed development is anticipated to generate 89 fewer weekday trips, 51 fewer trips during the AM peak hour, and 56 fewer trips during the PM peak hour, when compared with the prior approved development.

Year 2021

Year 2021 analyses was completed with and without the build out of the proposed development. An annual growth rate of 1.2% was applied to the existing traffic volumes.

A capacity analysis was completed for both the AM and PM peak hours for year 2021, with and without the build out of the proposed development. All movements are maintained at the existing level of service without the build out of the proposed development.

All movements operate at a LOS D or better or are maintained at the no build level of service with the build out of the proposed development.

Recommendations

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

- **114th Street and Driveway B (2)**
  Buildout of full access driveway, approximately 350 feet south of Shea Boulevard

- **114th Street and Driveway A (3)**
  Buildout of right-in/right-out driveway, approximately 215 feet south of Shea Boulevard

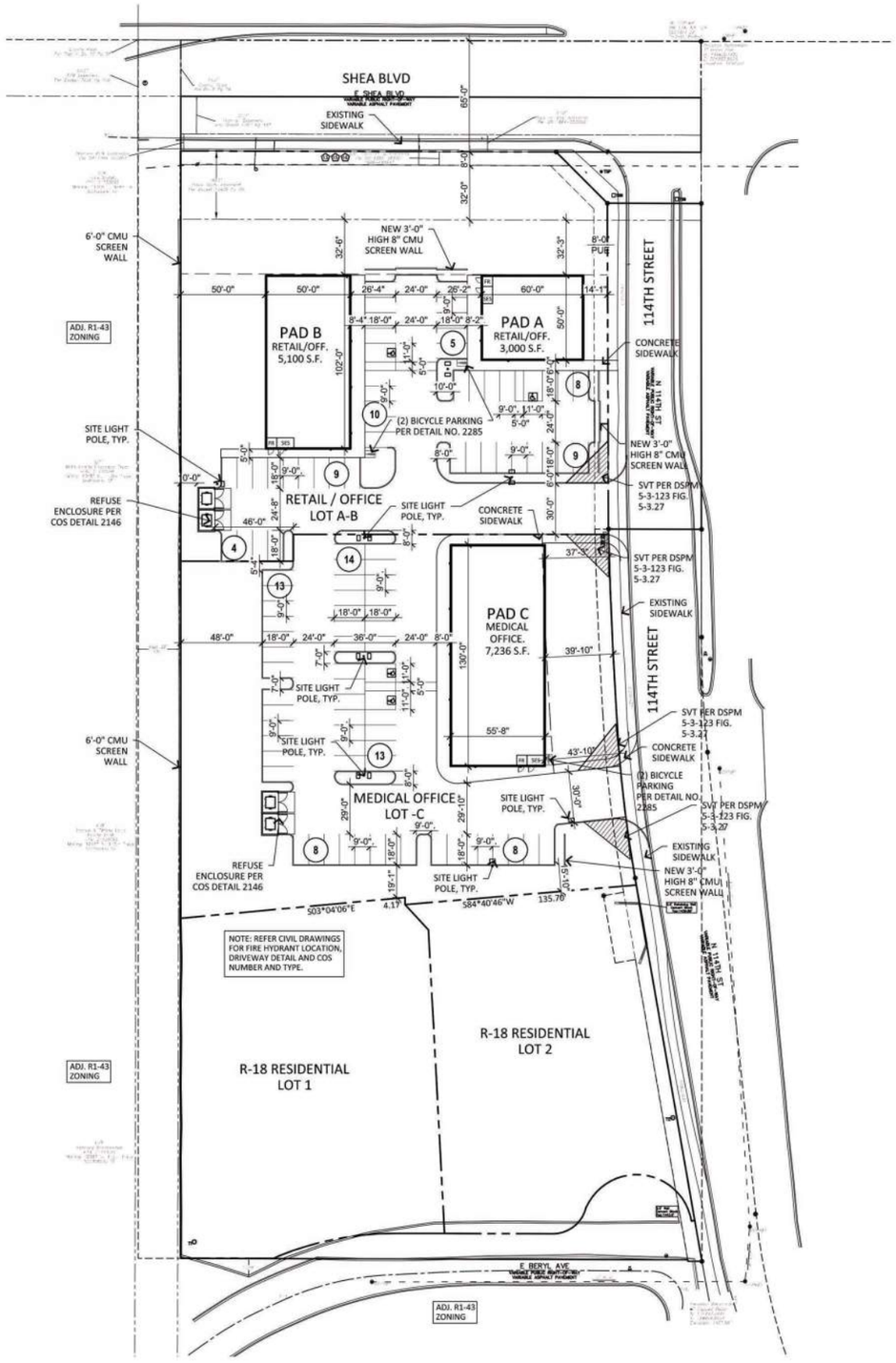
As with any new development and potential change in traffic patterns, the following is recommended:

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

Appendix A – Proposed Site Plan

A

8-ZN-2020
5/22/2020



SITE PLAN

SCALE: 1" = 40'-0"

NORTH

0' 20' 40' 80'

PROJECT DIRECTORY

ARCHITECT:
RKAA ARCHITECTS, INC.
2233 EAST THOMAS ROAD
PHOENIX, ARIZONA 85016
CONTACT: NEIL FEASER
PHONE: (602) 955-3900
FAX: (602) 955-0496
E-MAIL: nfeaser@rkaa.com

SITE DATA

PARCEL NUMBER:	217-33-034G, 034F, 034M & 034K
EXISTING ZONING:	C-0 AND R1-18
PROPOSED ZONING:	C1 (PAD A & B), SR (PAD C) AND R-18
PROPOSED SITE AREA:	3.8077 ACRES (165,864.90 S.F.)
MAX.BUILDING HEIGHT:	
C-1 ZONING:	22'-0" MAX.
SR ZONING:	18'-0" MAX.
PROPOSED BUILDING HEIGHT:	18'-0" MAX.
PROPOSED USE:	RETAIL / MED. OFFICE / OFFICE
BUILDING AREA:	
PAD A: RETAIL / OFFICE/MEDICAL	3,000 S.F.
PAD B: RETAIL / OFFICE/MEDICAL	5,100 S.F.
PAD C: MEDICAL OFFICE	7,236 S.F.
TOTAL BUILDING AREA:	15,336 S.F.
PARKING REQUIRED:	
PAD A: RETAIL-OFFICE / 250 S.F.	12 SPACES
PAD B: RETAIL-OFFICE / 250 S.F.	21 SPACES
PAD C: MEDICAL OFFICE / 250 S.F.	29 SPACES
PARKING PROVIDED:	
PAD A: RETAIL-OFFICE / 250 S.F.	22 SPACES
PAD B: RETAIL-OFFICE / 250 S.F.	23 SPACES
PAD C: MEDICAL OFFICE / 250 S.F.	56 SPACES
TOTAL PARKING REQUIRED:	62 SPACES
TOTAL PARKING PROVIDED:	101 SPACES
BICYCLE SPACES REQUIRED:	05 SPACES
BICYCLE SPACES PROVIDED:	06 SPACES
PROPOSED LOT A-B AREA:	1.3032 ACRES (56,770.44 S.F.)
PROPOSED LOT -C AREA:	1.2438 ACRES (54,182.40 S.F.)
PROPOSED LOT 1 AREA:	0.6795 ACRES (29,599.48 S.F.)
PROPOSED LOT 2 AREA:	0.5811 ACRES (25,312.58 S.F.)

VICINITY MAP

SCALE: N.T.S.

NORTH

THIS SITE PLAN HAS BEEN PREPARED WITHOUT THE AID OF A SURVEY. ALL PROPERTY BOUNDARIES ARE ROUGH APPROXIMATIONS. THIS DRAWING IS TO BE USED FOR CONCEPTUAL PURPOSES ONLY AND IT IS NOT TO BE THE BASIS FOR ANY LEGALLY BINDING DOCUMENTATION.

114TH AND SHEA RETAIL

SWC OF 114TH STREET AND SHEA BLVD
SCOTTSDALE ARIZONA 85259
DATE: 05-01-2020 (PRELIMINARY)

SP-1

RKAA# 20047.50

RKAA ARC

8-ZN-2020
5/22/2020

Appendix B – Crash Data

B

8-ZN-2020
5/22/2020

CITY OF SCOTTSDALE

COLLISION SUMMARY

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST FROM	INJ. SEV. #1	INJ. SEV. #2	PHYS. COND. #1	PHYS. COND. #2	VIOLATION #1	VIOLATION #2	ACTION #1	ACTION #2	TRAV. DIR. #1	TRAV. DIR. #2	MANNER OF COLLISION	COMMENTS
1718446	170820	1103	114	ST	SHEA	BL	AT		1	1	0	0	2	1	1	3	EB	EB	4	
1725363	171115	2101	114	ST	SHEA	BL	AT		99	1	99	0	99	1	1	3	EB	EB	4	MULTI VEH 3, HIT AND RUN
1726933	171205	1823	114	ST	SHEA	BL	AT		1	1	0	0	2	1	2	2	WB	WB	4	
1803981	180219	1824	114	ST	SHEA	BL	AT		1		0		2		4		WB		1	
1816869	180801	1538	114	ST	SHEA	BL	AT		99	1	99	0	99	1	99	2	EB	EB	4	HIT AND RUN
1826669	181211	0635	114	ST	SHEA	BL	N	20	1	1	0	0	7	1	5	3	SB	SB	6	
1922306	191025	1810	114	ST	SHEA	BL	AT				0	0	2	1	1	3	NB	NB	4	

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 **7**

CITY OF SCOTTSDALE

COLLISION SUMMARY

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST FROM	INJ. SEV. #1	INJ. SEV. #2	PHYS. COND. #1	PHYS. COND. #2	VIOLATION #1	VIOLATION #2	ACTION #1	ACTION #2	TRAV. DIR. #1	TRAV. DIR. #2	MANNER OF COLLISION	COMMENTS
2002222	200130	1709	112	ST	SHEA	BL	E	240			0	0	2	1	1	2	EB	EB	4	
1804668	180301	1223	114	ST	SHEA	BL	W	104	1	1	0	0	2	1	1	3	WB	WB	4	
1804672	180301	1300	114	ST	SHEA	BL	W	200	2	1	0	0	2	1	1	2	WB	WB	4	
1901735	190124	0803	114	ST	SHEA	BL	E	300			0	0	2	1	8	3	WB	WB	4	

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 **4**

Appendix C – Parcel Information

8-ZN-2020
5/22/2020

217-33-034G Land Parcel

This is a land parcel located at 11355 E SHEA BLVD SCOTTSDALE 85259. and the current owner is KCI 114 INVESTMENTS LLC. Its current year full cash value is $477,600.

Property Information

11355 E SHEA BLVD SCOTTSDALE 85259

MCR #	
Description:	W2 OF FOL DESC PROP N 286F OF E2 E2 NW4 NW4 EX W 25F & EX N 65F
Lat/Long	33.58197000 | -111.83579100
Lot Size	33,715 sq ft.
Zoning	C-O
Lot #	
High School District	SCOTTSDALE UNIFIED #48
Elementary School District	SCOTTSDALE UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	27 3N 5E
Market Area/Neighborhood	05/019
Subdivision (0 Parcels)	

Owner Information

KCI 114 INVESTMENTS LLC

Mailing Address	7339 E EVANS RD SUITE 201, SCOTTSDALE, AZ 85260
Deed Number	140568992
Last Deed Date	08/27/2014
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	2021	2020	2019	2018	2017
Full Cash Value	$477,600	$438,100	$417,300	$422,600	$202,400
Limited Property Value	$122,276	$116,453	$110,908	$105,627	$100,597
Legal Class	2.R	2.R	2.R	2.R	2.R
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%	15%	15%
Assessed LPV	$18,341	$17,468	$16,636	$15,844	$15,090
Property Use Code	0022	0022	0022	0022	0012
PU Description	Vacant Commercial Land	Vacant Commercial Land	Vacant Commercial Land	Vacant Commercial Land	Vacant Residential Land
Tax Area Code	481400	481400	481400	481400	481400
Valuation Source	Notice	Notice	Notice	Notice	Notice

8-ZN-2020
5/22/2020

217-33-034F Land Parcel

This is a land parcel located at 11355 E SHEA BLVD SCOTTSDALE 85259. and the current owner is KCI 114 INVESTMENTS LLC. Its current year full cash value is $480,100.

Property Information

11355 E SHEA BLVD SCOTTSDALE 85259

MCR #	
Description:	E2 OF FOL N 286F OF E2 E2 NW4 NW4 EX W 25F & EX N 65F & ALSO EX RD PER 88-469357
Lat/Long	33.58197000 | -111.83579100
Lot Size	31,494 sq ft.
Zoning	C-O
Lot #	
High School District	SCOTTSDALE UNIFIED #48
Elementary School District	SCOTTSDALE UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	27 3N 5E
Market Area/Neighborhood	05/019
Subdivision (0 Parcels)	

Owner Information

KCI 114 INVESTMENTS LLC

Mailing Address	7339 E EVANS RD SUITE 201, SCOTTSDALE, AZ 85260
Deed Number	140568992
Last Deed Date	08/27/2014
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	2021	2020	2019	2018	2017
Full Cash Value	$480,100	$455,300	$433,600	$432,900	$194,700
Limited Property Value	$114,819	$109,351	$104,144	$99,185	$94,462
Legal Class	2.R	2.R	2.R	2.R	2.R
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%	15%	15%
Assessed LPV	$17,223	$16,403	$15,622	$14,878	$14,169
Property Use Code	0022	0022	0022	0022	0012
PU Description	Vacant Commercial Land	Vacant Commercial Land	Vacant Commercial Land	Vacant Commercial Land	Vacant Residential Land
Tax Area Code	481400	481400	481400	481400	481400
Valuation Source	Notice	Notice	Notice	Notice	Notice

8-ZN-2020
5/22/2020

217-33-034M Land Parcel

This is a land parcel located at 11355 E SHEA BLVD SCOTTSDALE 85259. and the current owner is KCI 114 INVESTMENTS LLC. Its current year full cash value is $443,000.

Property Information

11355 E SHEA BLVD SCOTTSDALE 85259

MCR #	
Description:	S 428.10F OF N 714.10F OF E2 E2 NW4 NW4 SEC 27 EX W 25F & EX S 203F OF W 240F OF S 428.10F OF N 714.10F E2 E2 NW4 NW4 SEC 27 & ALSO EX TH PT LY E OF LI DAF COM NE COR NW4 NW4 SD SEC TH S 715 TH W 8.12F TO POB SD LI TH N 9D 51M W 179.54F TH W 12F TH N 9D 51M W 40F TH N 80D 8M E 12F TH N 9D 517.05F TO BEG TAN CUR CONC TO NE TH NLY ALG CUR 99.17F TO BEG COMP CUR CONC TO NE TH NLY ALG CUR 107.56F TO PT & POE SD LI
Lat/Long	33.58197000 | -111.83579100
Lot Size	68,484 sq ft.
Zoning	R1-18
Lot #	
High School District	SCOTTSDALE UNIFIED #48
Elementary School District	SCOTTSDALE UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	27 3N 5E
Market Area/Neighborhood	05/019
Subdivision (0 Parcels)	

8-ZN-2020
5/22/2020

Owner Information

KCI 114 INVESTMENTS LLC

Mailing Address	7339 E EVANS RD SUITE 201, SCOTTSDALE, AZ 85260
Deed Number	140568992
Last Deed Date	08/27/2014
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	2021	2020	2019	2018	2017
Full Cash Value	$443,000	$381,100	$352,200	$382,400	$395,900
Limited Property Value	$273,964	$260,918	$248,493	$236,660	$225,390
Legal Class	2.R	2.R	2.R	2.R	2.R
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%	15%	15%
Assessed LPV	$41,095	$39,138	$37,274	$35,499	$33,809
Property Use Code	0012	0012	0012	0012	0012
PU Description	Vacant Residential Land	Vacant Residential Land	Vacant Residential Land	Vacant Residential Land	Vacant Residential Land
Tax Area Code	481400	481400	481400	481400	481400
Valuation Source	Notice	Notice	Notice	Notice	Notice

8-ZN-2020
5/22/2020

217-33-034K Land Parcel

This is a land parcel located at 11355 E SHEA BLVD SCOTTSDALE 85259. and the current owner is KCI 114 INVESTMENTS LLC. Its current year full cash value is $370,000.

Property Information

11355 E SHEA BLVD SCOTTSDALE 85259

MCR #	
Description:	S 203F OF W 240F OF S 428.10F OF N 714.10F OF E2 E2 NW4 NW4 SEC 27 EX W 25F TH/OF
Lat/Long	33.58197000 | -111.83579100
Lot Size	43,647 sq ft.
Zoning	R1-18
Lot #	
High School District	SCOTTSDALE UNIFIED #48
Elementary School District	SCOTTSDALE UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	27 3N 5E
Market Area/Neighborhood	05/019
Subdivision (0 Parcels)	

Owner Information

KCI 114 INVESTMENTS LLC

Mailing Address	7339 E EVANS RD SUITE 201, SCOTTSDALE, AZ 85260
Deed Number	140568992
Last Deed Date	08/27/2014
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	2021	2020	2019	2018	2017
Full Cash Value	$370,000	$311,800	$283,300	$294,500	$305,600
Limited Property Value	$209,377	$199,407	$189,911	$180,868	$172,255
Legal Class	2.R	2.R	2.R	2.R	2.R
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%	15%	15%
Assessed LPV	$31,407	$29,911	$28,487	$27,130	$25,838
Property Use Code	0014	0014	0014	0014	0014
PU Description	Vacant Residential Land	Vacant Residential Land	Vacant Residential Land	Vacant Residential Land	Vacant Residential Land
Tax Area Code	481400	481400	481400	481400	481400
Valuation Source	Notice	Notice	Notice	Notice	Notice

8-ZN-2020
5/22/2020

Appendix D – Traffic Count Data

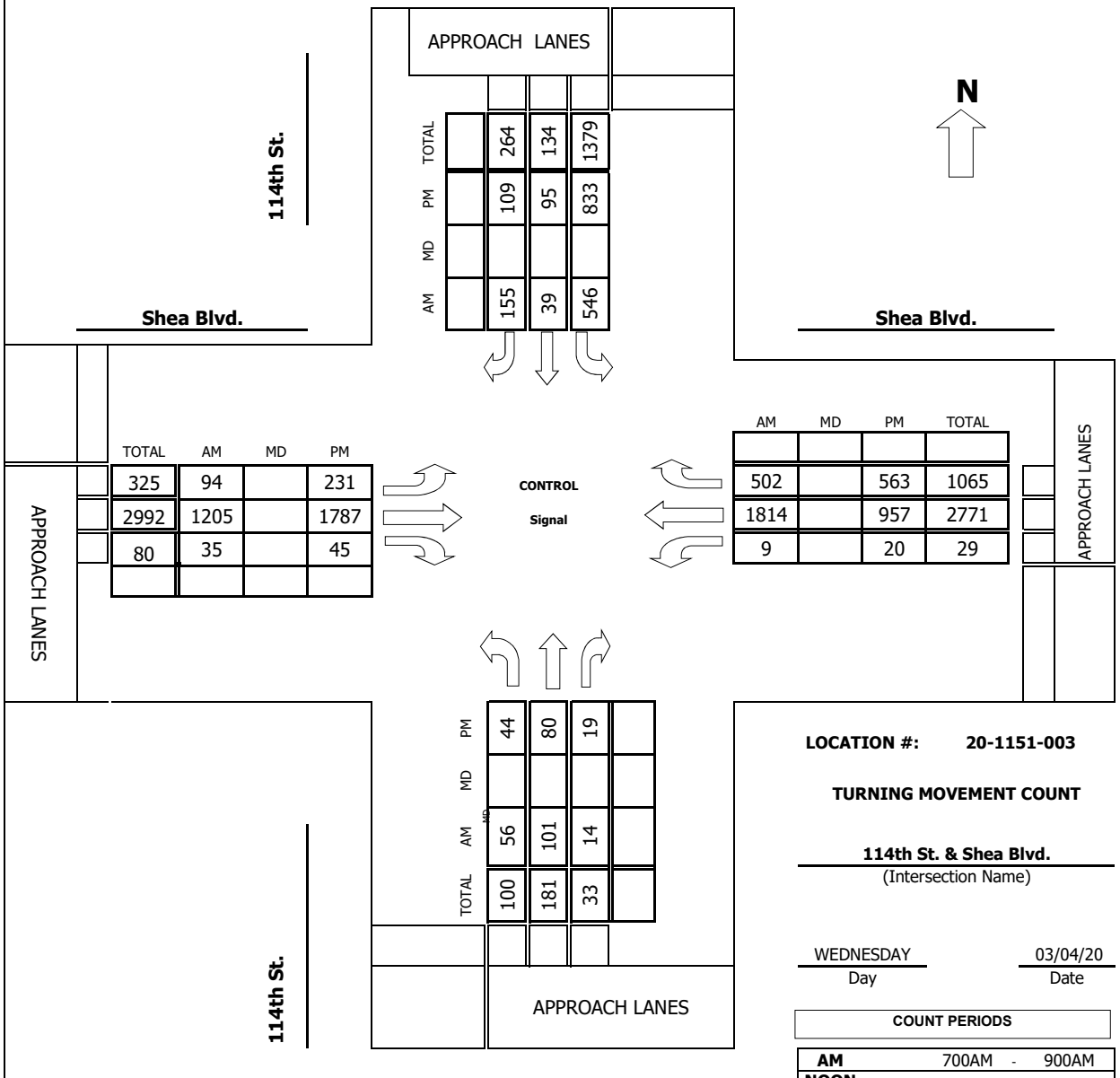
8-ZN-2020
5/22/2020

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 20-1151-003

TMC SUMMARY OF 114th St. & Shea Blvd.



LOCATION #: 20-1151-003

TURNING MOVEMENT COUNT

114th St. & Shea Blvd.
(Intersection Name)

WEDNESDAY (Day) 03/04/20 (Date)

COUNT PERIODS

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

AM PEAK HOUR 700 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

8-ZN-2020
5/22/2020

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	114th St.	DATE:	03/04/20	LOCATION:	Scottsdale
E-W STREET:	Shea Blvd.	DAY:	WEDNESDAY	PROJECT#	20-1151-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	1	0	2	2	1	2	3	0	1	3	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	12	28	1	155	6	34	22	342	11	2	431	143	1187
7:15 AM	17	29	5	137	5	32	24	310	7	2	417	142	1127
7:30 AM	10	22	0	138	12	43	16	313	7	5	524	125	1215
7:45 AM	17	22	8	116	16	46	32	240	10	0	442	92	1041
8:00 AM	10	23	1	103	13	41	28	290	15	0	374	146	1044
8:15 AM	13	16	2	101	9	40	47	254	7	1	353	146	989
8:30 AM	20	32	1	114	11	42	33	231	7	4	376	140	1011
8:45 AM	9	26	4	79	12	43	37	244	10	0	294	95	853
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	108	198	22	943	84	321	239	2224	74	14	3211	1029	8467
Approach %	32.93	60.37	6.71	69.96	6.23	23.81	9.42	87.66	2.92	0.33	75.48	24.19	
App/Depart	328	/	1466	1348	/	172	2537	/	3189	4254	/	3640	

AM Peak Hr Begins at: 700 AM

PEAK													
Volumes	56	101	14	546	39	155	94	1205	35	9	1814	502	4570
Approach %	32.75	59.06	8.19	73.78	5.27	20.95	7.05	90.33	2.62	0.39	78.02	21.59	
PEAK HR. FACTOR:		0.838			0.949			0.889			0.889		0.940

CONTROL:	Signal
COMMENT 1:	
GPS:	33.582462, -111.835079

8-ZN-2020
5/22/2020

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	114th St. 0	DATE:	03/04/20	LOCATION:	Scottsdale
E-W STREET:	Shea Blvd.	DAY:	WEDNESDAY	PROJECT#	20-1151-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	1	0	2	2	1	2	3	0	1	3	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	11	26	0	162	23	39	50	403	16	3	287	132	1152
4:15 PM	9	18	4	223	37	29	53	409	14	1	237	136	1170
4:30 PM	13	17	6	202	22	25	51	463	18	7	244	164	1232
4:45 PM	6	18	3	232	29	28	57	409	8	6	219	133	1148
5:00 PM	15	20	6	187	17	26	55	440	12	4	268	144	1194
5:15 PM	10	25	4	212	27	30	68	475	7	3	226	122	1209
5:30 PM	9	18	3	165	18	33	65	380	8	4	255	131	1089
5:45 PM	12	21	3	150	24	40	47	308	11	5	197	91	909
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	85	163	29	1533	197	250	446	3287	94	33	1933	1053	9103
Approach %	30.69	58.84	10.47	77.42	9.95	12.63	11.65	85.89	2.46	1.09	64.03	34.88	
App/Depart	277	/	1662	1980	/	324	3827	/	4849	3019	/	2268	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	44	80	19	833	95	109	231	1787	45	20	957	563	4783
Approach %	30.77	55.94	13.29	80.33	9.16	10.51	11.20	86.62	2.18	1.30	62.14	36.56	
PEAK HR. FACTOR:		0.872			0.897			0.938			0.925		0.971

CONTROL:	Signal
COMMENT 1:	0
GPS:	33.582462, -111.835079

8-ZN-2020
5/22/2020

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: 114th St.
E-W STREET: Shea Blvd.

Date: 03/04/20
Day: WEDNESDAY

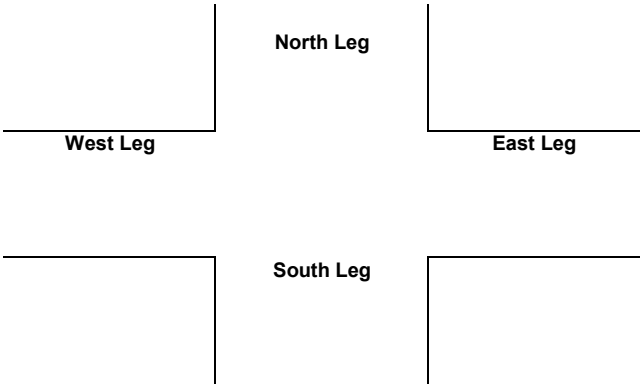
City: Scottsdale
Project #: 20-1151-003

	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	2	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	1	0	2	0
TOTAL	**3**	**0**	**2**	**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	1	0	0	0
5:15 PM	1	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**2**	**0**	**0**	**0**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	0	0
4:15 PM	0	0	0	1
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**	**1**



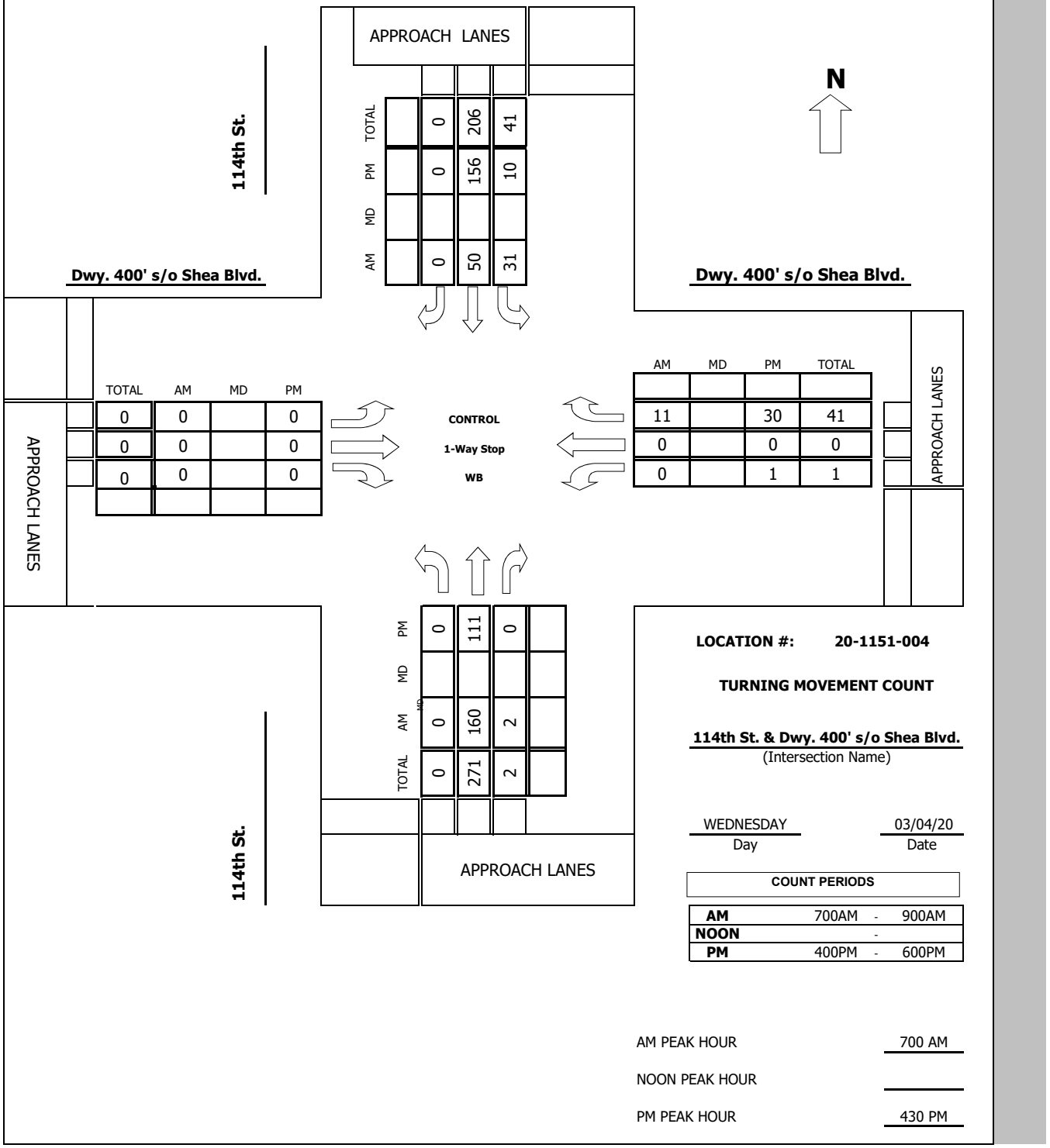
8-ZN-2020
5/22/2020

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 20-1151-004

TMC SUMMARY OF 114th St. & Dwy. 400' s/o Shea Blvd.



LOCATION #: 20-1151-004

TURNING MOVEMENT COUNT

114th St. & Dwy. 400' s/o Shea Blvd.
(Intersection Name)

WEDNESDAY (Day) 03/04/20 (Date)

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

AM PEAK HOUR 700 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

8-ZN-2020
5/22/2020

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	114th St.	DATE:	03/04/20	LOCATION:	Scottsdale
E-W STREET:	Dwy. 400' s/o Shea Blvd.	DAY:	WEDNESDAY	PROJECT#	20-1151-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	2	0	0	0	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	42	1	12	8	0	0	0	0	0	0	1	64
7:15 AM	0	45	0	4	9	0	0	0	0	0	0	4	62
7:30 AM	0	30	0	9	14	0	0	0	0	0	0	3	56
7:45 AM	0	43	1	6	19	0	0	0	0	0	0	3	72
8:00 AM	0	33	0	8	20	0	0	0	0	0	0	2	
8:15 AM	0	26	0	3	15	0	0	0	0	0	0	6	50
8:30 AM	0	47	0	9	14	0	0	0	0	0	0	5	75
8:45 AM	0	37	0	6	15	0	0	0	0	0	0	3	61
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	0	303	2	57	114	0	0	0	0	0	0	27	503
Approach %	0.00	99.34	0.66	33.33	66.67	0.00	####	####	####	0.00	0.00	100.00	
App/Depart	305	/	330	171	/	114	0	/	59	27	/	0	

AM Peak Hr Begins at: 700 AM

PEAK													
Volumes	0	160	2	31	50	0	0	0	0	0	0	11	254
Approach %	0.00	98.77	1.23	38.27	61.73	0.00	####	####	####	0.00	0.00	100.00	
PEAK HR. FACTOR:		0.900			0.810			0.000			0.688		0.882

CONTROL: 1-Way Stop (WB)
COMMENT 1:
GPS: 33.581309, -111.835054

8-ZN-2020
5/22/2020

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	114th St.		DATE:	03/04/20	LOCATION:	Scottsdale
	0					
E-W STREET:	Dwy. 400' s/o Shea Blvd.		DAY:	WEDNESDAY	PROJECT#	20-1151-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	2	0	0	0	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	0	25	0	9	35	0	0	0	0	2	0	10	81
4:15 PM	0	24	0	2	49	0	0	0	0	2	0	8	
4:30 PM	0	28	0	6	43	0	0	0	0	1	0	7	85
4:45 PM	0	20	0	2	42	0	0	0	0	0	0	9	73
5:00 PM	0	30	0	2	36	0	0	0	0	0	0	9	77
5:15 PM	0	33	0	0	35	0	0	0	0	0	0	5	73
5:30 PM	0	24	0	1	30	0	0	0	0	0	0	7	62
5:45 PM	0	26	0	4	35	0	0	0	0	1	0	11	77
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	0	210	0	26	305	0	0	0	0	6	0	66	613
Approach %	0.00	100.00	0.00	7.85	92.15	0.00	####	####	####	8.33	0.00	91.67	
App/Depart	210	/	276	331	/	311	0	/	26	72	/	0	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	0	111	0	10	156	0	0	0	0	1	0	30	308
Approach %	0.00	100.00	0.00	6.02	93.98	0.00	####	####	####	3.23	0.00	96.77	
PEAK HR. FACTOR:		0.841			0.847			0.000			0.861		0.906

CONTROL: 1-Way Stop (WB)
COMMENT 1: 0
GPS: 33.581309, -111.835054

8-ZN-2020
5/22/2020

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: 114th St.
E-W STREET: Dwy. 400' s/o Shea Blvd.

Date: 03/04/20
Day: WEDNESDAY

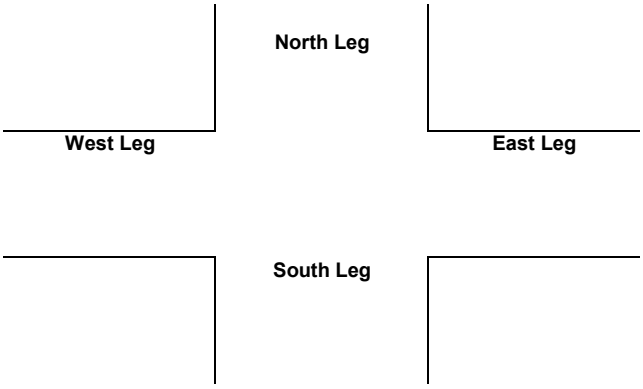
City: Scottsdale
Project #: 20-1151-004

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



8-ZN-2020
5/22/2020

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

Volumes for: Wednesday, March 4, 2020 City: Scottsdale Project #: 20-1151-001

Location: Shea Blvd. west of 114th St.

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			28		13			12:00			302		313		
00:15			23		11			12:15			368		312		
00:30			10		14			12:30			340		302		
00:45			7	68	5	43	111	12:45			331	1341	336	1263	2604
01:00			16		15			13:00			314		299		
01:15			6		18			13:15			358		284		
01:30			12		9			13:30			355		330		
01:45			12	46	7	49	95	13:45			338	1365	328	1241	2606
02:00			6		13			14:00			331		293		
02:15			6		8			14:15			355		355		
02:30			7		5			14:30			366		289		
02:45			6	25	2	28	53	14:45			414	1466	319	1256	2722
03:00			6		8			15:00			444		344		
03:15			4		4			15:15			446		327		
03:30			9		7			15:30			469		332		
03:45			4	23	12	31	54	15:45			429	1788	270	1273	3061
04:00			16		19			16:00			469		337		
04:15			20		21			16:15			476		275		
04:30			20		35			16:30			532		282		
04:45			32	88	40	115	203	16:45			474	1951	253	1147	3098
05:00			26		50			17:00			507		309		
05:15			57		80			17:15			550		266		
05:30			72		97			17:30			453		297		
05:45			88	243	112	339	582	17:45			366	1876	249	1121	2997
06:00			95		140			18:00			374		272		
06:15			169		193			18:15			335		210		
06:30			252		274			18:30			282		187		
06:45			294	810	292	899	1709	18:45			280	1271	162	831	2102
07:00			375		477			19:00			258		153		
07:15			341		466			19:15			245		128		
07:30			336		577			19:30			223		117		
07:45			282	1334	505	2025	3359	19:45			180	906	82	480	1386
08:00			333		425			20:00			195		106		
08:15			308		406			20:15			185		104		
08:30			271		438			20:30			178		79		
08:45			291	1203	346	1615	2818	20:45			135	693	77	366	1059
09:00			307		323			21:00			139		109		
09:15			268		332			21:15			125		67		
09:30			291		330			21:30			101		68		
09:45			268	1134	327	1312	2446	21:45			89	454	60	304	758
10:00			256		315			22:00			90		46		
10:15			309		321			22:15			79		49		
10:30			284		343			22:30			59		44		
10:45			293	1142	301	1280	2422	22:45			44	272	34	173	445
11:00			264		315			23:00			42		35		
11:15			317		369			23:15			37		22		
11:30			276		297			23:30			33		19		
11:45			295	1152	328	1309	2461	23:45			21	133	13	89	222
Total Vol.			7268		9045		**16313**				13516		9544		**23060**

GPS Coordinates: 33.582456, -111.836613

Daily Totals

NB	SB	EB	WB	Combined
		20784	18589	**39373**

	AM			PM		
Split %	44.6%	55.4%	**41.4%**	58.6%	41.4%	**58.6%**
Peak Hour	06:45	07:00	**07:00**	16:30	14:45	**16:30**
Volume	1346	2025	**3359**	2063	1322	**3173**
P.H.F.	0.90	0.88	**0.92**	0		

8-ZN-2020
5/22/2020

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

Volumes for: Wednesday, March 4, 2020 City: Scottsdale Project #: 20-1151-002

Location: 114th St. south of Shea Blvd.

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	2		1					12:00	43		22				
00:15	1		0					12:15	30		43				
00:30	2		2					12:30	41		47				
00:45	1	6	2	5			11	12:45	26	140	40	152			292
01:00	0		1					13:00	32		32				
01:15	0		0					13:15	29		36				
01:30	0		0					13:30	41		32				
01:45	0	0	1	2			2	13:45	25	127	31	131			258
02:00	0		0					14:00	40		42				
02:15	0		0					14:15	40		35				
02:30	0		0					14:30	31		36				
02:45	0	0	0	0				14:45	42	153	35	148			301
03:00	0		0					15:00	32		39				
03:15	0		0					15:15	42		39				
03:30	0		0					15:30	38		37				
03:45	2	2	0	0			2	15:45	22	134	32	147			281
04:00	0		0					16:00	37		42				
04:15	3		0					16:15	31		52				
04:30	2		0					16:30	36		47				
04:45	2	7	1	1			8	16:45	27	131	43	184			315
05:00	3		2					17:00	41		33				
05:15	0		6					17:15	39		37				
05:30	10		4					17:30	30		30				
05:45	2	15	2	14			29	17:45	36	146	40	140			286
06:00	10		5					18:00	32		26				
06:15	16		6					18:15	16		29				
06:30	18		4					18:30	9		22				
06:45	17	61	11	26			87	18:45	13	70	32	109			179
07:00	41		19					19:00	13		23				
07:15	51		14					19:15	11		29				
07:30	32		24					19:30	13		19				
07:45	47	171	26	83			254	19:45	7	44	19	90			134
08:00	34		28					20:00	7		8				
08:15	31		17					20:15	6		20				
08:30	53		22					20:30	9		23				
08:45	39	157	22	89			246	20:45	5	27	12	63			90
09:00	29		23					21:00	5		6				
09:15	35		32					21:15	17		14				
09:30	44		28					21:30	5		7				
09:45	24	132	19	102			234	21:45	3	30	5	32			62
10:00	40		38					22:00	0		3				
10:15	41		26					22:15	4		2				
10:30	50		31					22:30	16		3				
10:45	46	177	18	113			290	22:45	7	27	3	11			38
11:00	45		30					23:00	2		1				
11:15	32		36					23:15	2		1				
11:30	36		35					23:30	1		2				
11:45	37	150	29	130			280	23:45	0	5	0	4			9
Total Vol.		878		565			**1443**			1034		1211			**2245**

GPS Coordinates: 33.581488, -111.835049

Daily Totals

NB	SB	EB	WB	Combined
1912	1776			**3688**

	AM			PM		
Split %	60.8%	39.2%	**39.1%**	46.1%	53.9%	**60.9%**
Peak Hour	10:15	11:45	**11:45**	14:45	16:00	**16:00**
Volume	182	141	**292**	154	184	**315**
P.H.F.	0.91	0.75	**0.83**	0.92	0.88	

8-ZN-2020
5/22/2020

Appendix E – Existing Signal Timing

E

8-ZN-2020
5/22/2020

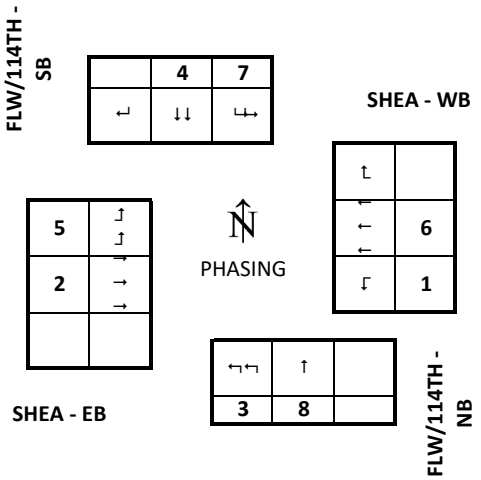
SHEA & FLW/114TH

System # 139

BASIC TIMING PLAN

Section #	I.P. Address	Date Designed
	MM1-5-1	
	172.27.11.39	3/12/2020

	Phase	1	2	3	4	5	6	7	8
TIMING PLAN - MM-2-1	Movement	WBL	EBT	NBL	SBT	EBL	WBT	SBL	NBT
	NOTES	PROT	COORD	L-P		L-P	COORD	PROT	
	MIN GRN	5	10	5	7	5	10	5	7
	BK MGRN								
	CS MGRN								
	DLY GRN								
	WALK		4		4		4		4
	WALK2								
	WLK MAX								
	PED CLR/FDW		21		31		22		28
	PD CLR2								
	PC MAX								
	PED CO								
	VEH EXT	2		2		2		2	
	VH EXT2								
	MAX 1	20	55	20	50	20	55	30	50
	MAX 2	30	65	30	60	30	65	40	60
	MAX 3								
	DYM MAX	30	65	30	60	30	65	40	60
	DYM STP	5	5	5	5	5	5	5	5
	YELLOW	4.4	5.1	3	4.4	4.4	5.1	3.6	3.6
	RED CLR	2	1.0	2	1.2	2	1.0	2	1.8
	RED MAX								
	RED RVT	2	2	2	2	2	2	2	2
	ACT B4								
	SEC/ACT								
	MAX INT								
	TIME B4								
	CARS WT								
	STPTDUC								
	TTREDUC								
	MIN GAP								
RECALLS - MM-2-8	LOCK DET								
	VEH RECALL		X				X		
	PED RECALL								
	MAX RECALL								
	SOFT RECALL								
	NO REST								
	ADD INIT CAL								



PHASING SEQUENCES

TOD: MORNING

R1: 2 1 3 4
R2: 5 6 8 7
B B

Use Timing plan:

TOD: MIDDAY

R1: 2 1 3 4
R2: 5 6 8 7
B B

Use Timing plan:

TOD: EVENING

R1: 2 1 3 4
R2: 5 6 8 7
B B

Use Timing plan:

TOD: NIGHT

R1: 2 1 3 4
R2: 5 6 8 7
B B

Use Timing plan:

FREE

R1: 2 1 3 4
R2: 5 6 8 7
B B

Use Timing plan: 254

NOTES

Advance detection on NBT, SBT, EBT, WBT.

Approved By
Effective Date

8-ZN-2020
5/22/2020

SHEA & FLW/114TH

System #	139

COORDINATOR	Section #	Date Updated
	0	3/12/2020

	PHASE	1	2	3	4	5	6	7	8	
	FDW		21		31		22		28	
	YELLOW	4.4	5.1	3	4.4	4.4	5.1	3.6	3.6	
	ALL RED	2	1	2	1.2	2	1	2	1.8	
	WALK		21		31		22		28	

										COORD PATTERN	OFFSET
PLAN 1 AM PLAN OPERATIVE TIMES 6:00	R1	2	→	1	↓	3	←	4	↓		
	R2	5	↑	6	←	8	↑	7	→	Balanced	44
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	12	58	11	39	12	58	20	30	Target Cycle Length	
	COORD		X				X			120	
	RECALLS		V				V			Actual Cycle Length	
	GREEN	5.6	51.9	6.0	33.4	5.6	51.9	14.4	24.6	120	

										COORD PATTERN	OFFSET
PLAN 2 MIDDAY PLAN OPERATIVE TIMES 9:00	R1	2	→	1	↓	3	←	4	↓		
	R2	5	↑	6	←	8	↑	7	→	Balanced	103
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	12	65	18	25	18	59	25	18	Target Cycle Length	
	COORD		X				X			120	
	RECALLS		V				V			Actual Cycle Length	
	GREEN	5.6	58.9	13.0	19.4	11.6	52.9	19.4	12.6	120	

										COORD PATTERN	OFFSET
PLAN 3 PM PLAN OPERATIVE TIMES 15:00	R1	2	→	1	↓	3	←	4	↓		
	R2	5	↑	6	←	8	↑	7	→	Balanced	4
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	12	55	16	37	18	49	37	16	Target Cycle Length	
	COORD		X				X			120	
	RECALLS		V				V			Actual Cycle Length	
	GREEN	5.6	48.9	11.0	31.4	11.6	42.9	31.4	10.6	120	

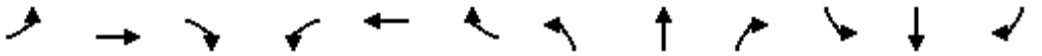
										COORD PATTERN	OFFSET
PLAN 4 MIDNIGHT PLAN OPERATIVE TIMES 22:00	R1	2	→	1	↓	3	←	4	↓		
	R2	5	↑	6	←	8	↑	7	→	Balanced	84
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	12	43	12	23	14	41	21	14	Target Cycle Length	
	COORD		X				X			90	
	RECALLS		V				V			Actual Cycle Length	
	GREEN	5.6	36.9	7.0	17.4	7.6	34.9	15.4	8.6	90	

8-ZN-2020
5/22/2020

Appendix F – Existing Capacity Analysis

F

8-ZN-2020
5/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	1121	33	9	1688	467	53	94	14	508	37	145
Future Volume (veh/h)	88	1121	33	9	1688	467	53	94	14	508	37	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	1193	35	10	1796	0	56	100	15	540	39	154
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	2205	65	307	2864		144	126	19	415	572	255
Arrive On Green	0.04	0.43	0.43	0.17	0.56	0.00	0.04	0.08	0.08	0.12	0.16	0.16
Sat Flow, veh/h	3456	5098	150	1781	5106	1585	3456	1589	238	3456	3554	1585
Grp Volume(v), veh/h	94	797	431	10	1796	0	56	0	115	540	39	154
Grp Sat Flow(s),veh/h/ln	1728	1702	1843	1781	1702	1585	1728	0	1827	1728	1777	1585
Q Serve(g_s), s	3.2	20.8	20.8	0.6	28.6	0.0	1.9	0.0	7.4	14.4	1.1	10.8
Cycle Q Clear(g_c), s	3.2	20.8	20.8	0.6	28.6	0.0	1.9	0.0	7.4	14.4	1.1	10.8
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	144	1472	797	307	2864		144	0	145	415	572	255
V/C Ratio(X)	0.65	0.54	0.54	0.03	0.63		0.39	0.00	0.79	1.30	0.07	0.60
Avail Cap(c_a), veh/h	161	1472	797	307	2864		173	0	375	415	989	441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	25.2	25.2	41.3	17.9	0.0	56.0	0.0	54.3	52.8	42.7	46.8
Incr Delay (d2), s/veh	5.3	1.4	2.6	0.0	1.1	0.0	0.6	0.0	3.7	152.6	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.2	9.1	0.2	10.3	0.0	0.8	0.0	3.6	14.9	0.5	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.0	26.7	27.9	41.3	18.9	0.0	56.6	0.0	58.0	205.4	42.7	47.6
LnGrp LOS	E	C	C	D	B		E	A	E	F	D	D
Approach Vol, veh/h		1322			1806	A		171			733	
Approach Delay, s/veh		29.6			19.0			57.5			163.6	
Approach LOS		C			B			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.1	58.0	10.0	24.9	11.4	73.7	20.0	14.9
Change Period (Y+Rc), s	6.4	6.1	5.0	* 5.6	6.4	* 6.4	* 5.6	5.4
Max Green Setting (Gmax), s	5.6	51.9	6.0	* 33	5.6	* 52	* 14	24.6
Max Q Clear Time (g_c+I1), s	2.6	22.8	3.9	12.8	5.2	30.6	16.4	9.4
Green Ext Time (p_c), s	0.0	1.0	0.0	0.0	0.0	2.3	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	50.4
HCM 6th LOS	D

Notes

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

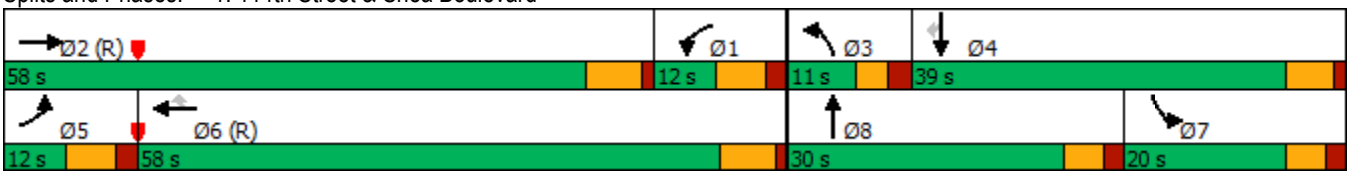
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBT	NBL	SBT	EBL	WBT	SBL	NBT
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	12	58	11	39	12	58	20	30
Maximum Split (%)	10.0%	48.3%	9.2%	32.5%	10.0%	48.3%	16.7%	25.0%
Minimum Split (s)	11.4	31.1	10	40.6	11.4	32.1	10.6	37.4
Yellow Time (s)	4.4	5.1	3	4.4	4.4	5.1	3.6	3.6
All-Red Time (s)	2	1	2	1.2	2	1	2	1.8
Minimum Initial (s)	5	10	5	7	5	10	5	7
Vehicle Extension (s)	2	0.2	2	0.2	2	0.2	2	0.2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4		4		4		4
Flash Dont Walk (s)		21		31		22		28
Dual Entry	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	90	32	102	113	32	44	12	102
End Time (s)	102	90	113	32	44	102	32	12
Yield/Force Off (s)	95.6	83.9	108	26.4	37.6	95.9	26.4	6.6
Yield/Force Off 170(s)	95.6	62.9	108	115.4	37.6	73.9	26.4	98.6
Local Start Time (s)	46	108	58	69	108	0	88	58
Local Yield (s)	51.6	39.9	64	102.4	113.6	51.9	102.4	82.6
Local Yield 170(s)	51.6	18.9	64	71.4	113.6	29.9	102.4	54.6

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	125
Offset: 44 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green	

Splits and Phases: 1: 114th Street & Shea Boulevard



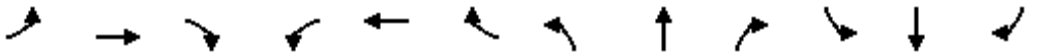
Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	11	149	2	29	47
Future Vol, veh/h	0	11	149	2	29	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	169	2	33	53

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	263	170	0	0	171	0
Stage 1	170	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	715	873	-	-	1405	-
Stage 1	859	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	699	873	-	-	1405	-
Mov Cap-2 Maneuver	719	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	900	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	2.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	873	1405	-
HCM Lane V/C Ratio	-	-	0.014	0.023	-
HCM Control Delay (s)	-	-	9.2	7.6	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	1662	42	19	891	524	41	75	18	775	89	102
Future Volume (veh/h)	215	1662	42	19	891	524	41	75	18	775	89	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	222	1713	43	20	919	0	42	77	19	799	92	105
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	2088	52	143	2067		144	100	25	855	988	441
Arrive On Green	0.08	0.41	0.41	0.08	0.40	0.00	0.04	0.07	0.07	0.25	0.28	0.28
Sat Flow, veh/h	3456	5123	129	1781	5106	1585	3456	1449	357	3456	3554	1585
Grp Volume(v), veh/h	222	1138	618	20	919	0	42	0	96	799	92	105
Grp Sat Flow(s),veh/h/ln	1728	1702	1847	1781	1702	1585	1728	0	1806	1728	1777	1585
Q Serve(g_s), s	7.6	35.7	35.7	1.3	15.7	0.0	1.4	0.0	6.3	27.2	2.3	6.1
Cycle Q Clear(g_c), s	7.6	35.7	35.7	1.3	15.7	0.0	1.4	0.0	6.3	27.2	2.3	6.1
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	278	1387	753	143	2067		144	0	125	855	988	441
V/C Ratio(X)	0.80	0.82	0.82	0.14	0.44		0.29	0.00	0.77	0.93	0.09	0.24
Avail Cap(c_a), veh/h	334	1387	753	143	2067		317	0	160	904	988	441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	31.6	31.7	51.3	25.9	0.0	55.8	0.0	54.9	44.2	32.1	33.5
Incr Delay (d2), s/veh	9.0	5.5	9.8	0.2	0.7	0.0	0.4	0.0	11.6	15.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	14.7	16.9	0.5	6.1	0.0	0.6	0.0	3.3	13.1	1.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.2	37.2	41.4	51.5	26.6	0.0	56.2	0.0	66.5	59.7	32.1	33.6
LnGrp LOS	E	D	D	D	C		E	A	E	E	C	C
Approach Vol, veh/h		1978			939	A		138			996	
Approach Delay, s/veh		41.4			27.1			63.4			54.4	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	55.0	10.0	39.0	16.1	55.0	35.3	13.7
Change Period (Y+Rc), s	6.4	6.1	5.0	* 5.6	6.4	* 6.4	* 5.6	5.4
Max Green Setting (Gmax), s	5.6	48.9	11.0	* 31	11.6	* 43	* 31	10.6
Max Q Clear Time (g_c+I1), s	3.3	37.7	3.4	8.1	9.6	17.7	29.2	8.3
Green Ext Time (p_c), s	0.0	1.5	0.0	0.1	0.1	1.0	0.5	0.0

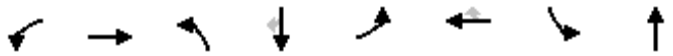
Intersection Summary	
HCM 6th Ctrl Delay	42.1
HCM 6th LOS	D

Notes

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

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

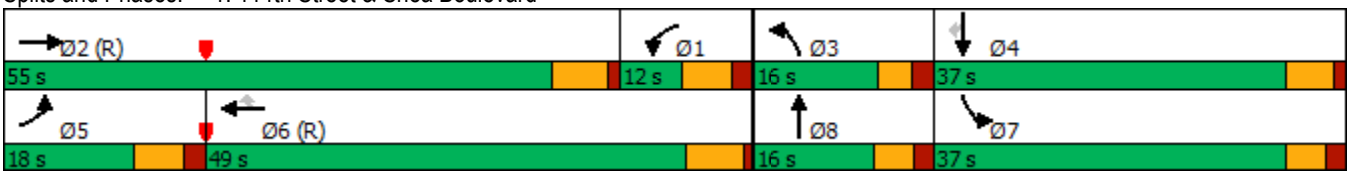
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBT	NBL	SBT	EBL	WBT	SBL	NBT
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	12	55	16	37	18	49	37	16
Maximum Split (%)	10.0%	45.8%	13.3%	30.8%	15.0%	40.8%	30.8%	13.3%
Minimum Split (s)	11.4	31.1	10	40.6	11.4	32.1	10.6	37.4
Yellow Time (s)	4.4	5.1	3	4.4	4.4	5.1	3.6	3.6
All-Red Time (s)	2	1	2	1.2	2	1	2	1.8
Minimum Initial (s)	5	10	5	7	5	10	5	7
Vehicle Extension (s)	2	0.2	2	0.2	2	0.2	2	0.2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4		4		4		4
Flash Dont Walk (s)		21		31		22		28
Dual Entry	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	41	106	53	69	106	4	69	53
End Time (s)	53	41	69	106	4	53	106	69
Yield/Force Off (s)	46.6	34.9	64	100.4	117.6	46.9	100.4	63.6
Yield/Force Off 170(s)	46.6	13.9	64	69.4	117.6	24.9	100.4	35.6
Local Start Time (s)	37	102	49	65	102	0	65	49
Local Yield (s)	42.6	30.9	60	96.4	113.6	42.9	96.4	59.6
Local Yield 170(s)	42.6	9.9	60	65.4	113.6	20.9	96.4	31.6

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	145
Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Green	

Splits and Phases: 1: 114th Street & Shea Boulevard



8-ZN-2020
5/22/2020

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	28	104	0	10	146
Future Vol, veh/h	1	28	104	0	10	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	31	114	0	11	160

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	216	114	0	0	114	0
Stage 1	114	-	-	-	-	-
Stage 2	102	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	762	938	-	-	1474	-
Stage 1	910	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	757	938	-	-	1474	-
Mov Cap-2 Maneuver	760	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	905	-	-	-	-	-

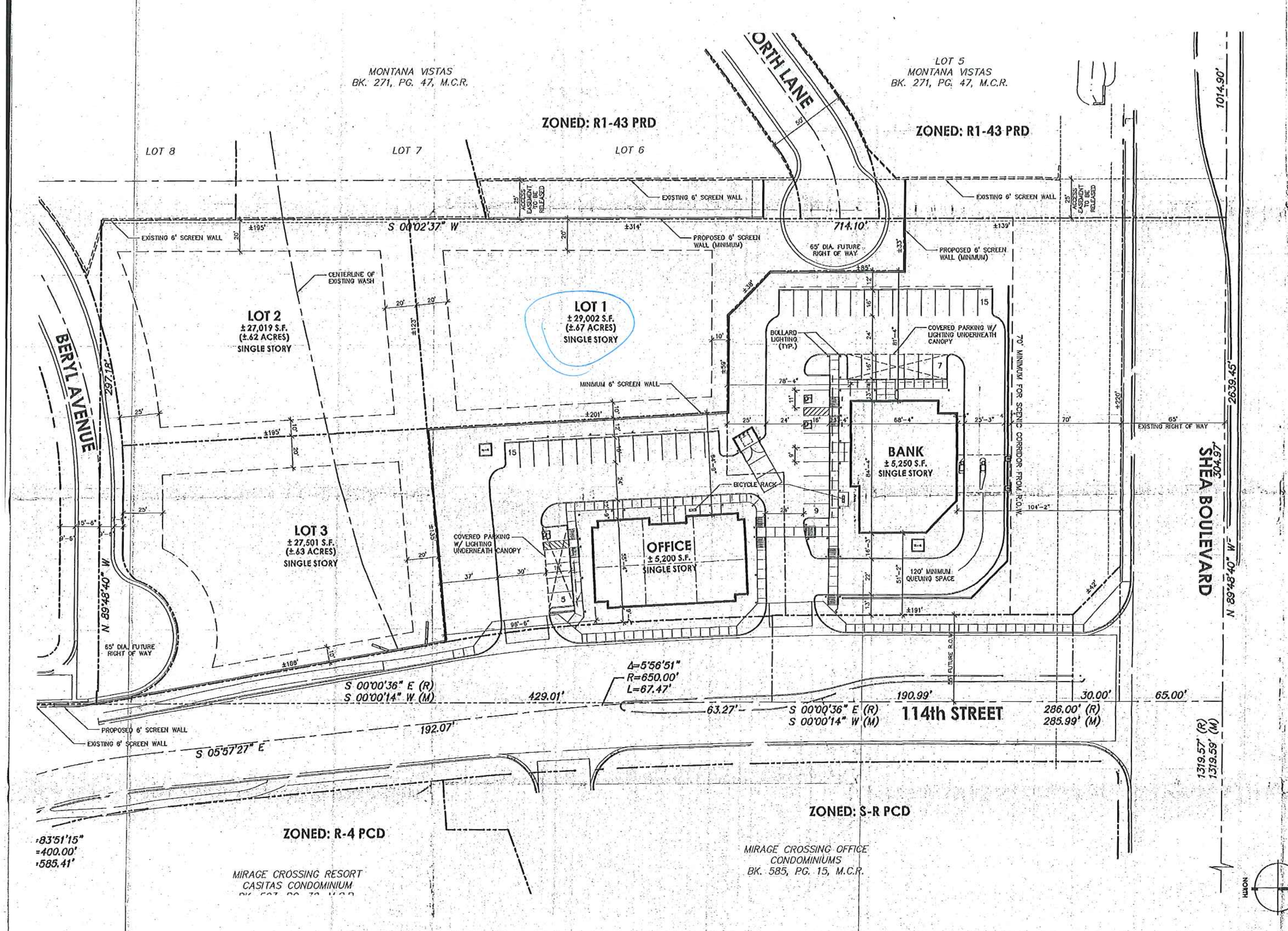
Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	930	1474	-
HCM Lane V/C Ratio	-	-	0.034	0.007	-
HCM Control Delay (s)	-	-	9	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Appendix G – Prior Approved Site Plan

G

8-ZN-2020
5/22/2020

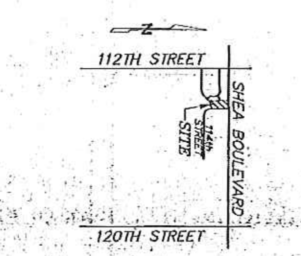


PROJECT DATA

PARCEL NUMBER:	217-33-Ø34G, 217-33-Ø34F 217-33-Ø34E
EXISTING ZONING:	RI-43
PROPOSED ZONING:	C-O/RI-18 P.R.D.

SITE DATA

BANK PARCEL:	
NET SITE AREA:	+/- 54,895 SF. (+/- 1.26 ACRES)
BUILDING AREA:	+/- 5250 SF.
F.A.R. ALLOWED:	+/- 60% (32,937 SF.)
F.A.R. PROVIDED:	+/- 9.6% (5,250 SF.)
PARKING REQUIRED:	21 SPACES (BANK @ 1/250 SF.)
PARKING PROVIDED:	+/- 31 SPACES
ADA PARKING REQUIRED:	2 SPACES (@ 4%)
ADA PARKING PROVIDED:	+/- 2 SPACES
PARKING RATIO:	+/- 5.9 SPACES PER 1,ØØØ SF.
OPEN SPACE REQUIRED:	+/- 11,528 SF. (21% - 24' HEIGHT)
OPEN SPACE PROVIDED:	+/- 34,578 SF. (63.Ø%)
FRONTAGE OPEN SPACE REQ.:	+/- 5,764 SF. (1Ø.5%)
FRONTAGE OPEN SPACE PROV.:	+/- 2Ø,449 SF. (37.3%)
PARKING LOT LANDSCAPE REQ.:	+/- 1,628 SF. (31 SPACESx35Øx.15)
PARKING LOT LANDSCAPE PROV.:	+/- 1,92Ø SF. (17.7%)
ISLAND LANDSCAPE REQ.:	+/- 538 SF. (1,628x33%)
ISLAND LANDSCAPE PROV.:	+/- 799 SF. (799/1,628 = 49.1%)
OFFICE PARCEL:	
NET SITE AREA:	+/- 27,48Ø SF. (+/- Ø.63 ACRES)
BUILDING AREA:	+/- 52ØØ SF.
F.A.R. ALLOWED:	+/- 60% (16,488 SF.)
F.A.R. PROVIDED:	+/- 18.9% (5,2ØØ SF.)
PARKING REQUIRED:	18 SPACES (OFFICE @ 1/3ØØ SF.)
PARKING PROVIDED:	+/- 2Ø SPACES
ADA PARKING REQUIRED:	1 SPACES (@ 4%)
ADA PARKING PROVIDED:	+/- 1 SPACES
PARKING RATIO:	+/- 3.8 SPACES PER 1,ØØØ SF.
OPEN SPACE REQUIRED:	+/- 5,771 SF. (21% - 24' HEIGHT)
OPEN SPACE PROVIDED:	+/- 9,162 SF. (33.3%)
FRONTAGE OPEN SPACE REQ.:	+/- 2,886 SF. (1Ø.5%)
FRONTAGE OPEN SPACE PROV.:	+/- 2,951 SF. (1Ø.7%)
PARKING LOT LANDSCAPE REQ.:	+/- 1,1Ø3 SF. (21 SPACESx35Øx.15)
PARKING LOT LANDSCAPE PROV.:	+/- 3,323 SF. (45.2%)
ISLAND LANDSCAPE REQ.:	+/- 364 SF. (1,1Ø3x33%)
ISLAND LANDSCAPE PROV.:	+/- 615 SF. (615/1,1Ø3 = 55.8%)
RESIDENTIAL:	
GROSS SITE AREA:	+/- 98,229 SF. (+/- 2.26 ACRES)
NET SITE AREA:	+/- 83,522 SF. (+/- 1.92 ACRES)
DENSITY ALLOWED:	1.9 D.U./ACRE (4 LOTS)
DENSITY PROVIDED:	1.3 D.U./ACRE (3 LOTS)



VICINITY MAP
NOT TO SCALE

CONCEPTUAL SITE PLAN-19

SCALE: 1"=30'-0"

PHArchitecture

WESTAR DEVELOPMENT

FLW/Shea
SWC Shea Blvd. & 114th St.
Scottsdale, Arizona
12.19.2007

07021_Site Plan-19

5-GP-07/15-ZN-07
3rd: 12/20/07

14-ZN-2007
3rd: 12/20/07

8-ZN-2020
5/22/2020

Appendix H – Trip Generation

H

8-ZN-2020
5/22/2020

Existing Development: Bank and Office

Completed: KS 3/16/2020
Checked: SAS 3/24/2020

Trip Generation Calculations (10th Edition)

912 Drive-in Bank

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	
Drive-in Bank	912	5.25	1000 SF GFA	100.03	50%	50%	9.50	58%	42%	20.45	50%	50%	525	263	262	50	29	21	107	54	53	Average
Drive-in Bank	912	5.25	1000 SF GFA	32.67	50%	50%	0.89	58%	42%	3.04	50%	50%	172	86	86	5	3	2	16	8	8	Minimum
Drive-in Bank	912	5.25	1000 SF GFA	408.42	50%	50%	29.47	58%	42%	109.91	50%	50%	2,144	1,072	1,072	155	90	65	577	289	288	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	
Drive-in Bank	912	5.25	1000 SF GFA	T=82.87(X)+117.10	50%	50%	N/A	N/A	N/A	N/A	N/A	N/A	552	276	276	N/A	N/A	N/A	N/A	N/A	N/A	Equation

Drive-in Bank	Standard Deviation	61.61		5.85		15.01
	Number of Studies	21		46		115
	Average Size	7		5		4
	R^2	0.66		N/A		N/A

710 General Office Building

Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour			
				Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	
General Office Building	710	5.2	1000 SF GFA	9.74	50%	50%	1.16	86%	14%	1.15	16%	84%	51	26	25	6	5	1	6	1	5	Average
General Office Building	710	5.2	1000 SF GFA	2.71	50%	50%	0.37	86%	14%	0.47	16%	84%	14	7	7	2	2	0	2	0	2	Minimum
General Office Building	710	5.2	1000 SF GFA	27.56	50%	50%	4.23	86%	14%	3.23	16%	84%	143	72	71	22	19	3	17	3	14	Maximum
Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour			
				Equation	% In	% Out	Equation	% In	% Out	Equation	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	
General Office Building	710	5.2	1000 SF GFA	Ln(T)=0.97Ln(X)+2.50	50%	50%	T=.94(X)+26.49	86%	14%	Ln(T)=0.95Ln(X)+0.36	16%	84%	60	30	30	31	27	4	7	1	6	Equation

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

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Completed: KS 3/16/2020

Checked: SAS 3/24/2020

Trip Generation Calculations (10th Edition)

720	Medical-Dental Office Building																					
Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour			
				Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	
Medical-Dental Office Building	720	7.2	1000 SF GFA	34.80	50%	50%	2.78	78%	22%	3.46	28%	72%	252	126	126	20	16	4	25	7	18	Average
Medical-Dental Office Building	720	7.2	1000 SF GFA	9.14	50%	50%	0.85	78%	22%	0.25	28%	72%	66	33	33	6	5	1	2	1	1	Minimum
Medical-Dental Office Building	720	7.2	1000 SF GFA	100.75	50%	50%	14.30	78%	22%	8.86	28%	72%	729	365	364	103	80	23	64	18	46	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	
Medical-Dental Office Building	**720**	**7.2**	**1000 SF GFA**	**T=38.42(X)-87.62**	**50%**	**50%**	**Ln(T)=0.89Ln(X)+1.31**	**78%**	**22%**	**T=3.39(X)+2.02**	**28%**	**72%**	**190**	**95**	**95**	**22**	**17**	**5**	**27**	**8**	**19**	**Equation**
Medical-Dental Office Building	Standard Deviation			9.79			1.28			1.58												
	Number of Studies			28			44			65												
	Average Size			24			32			28												
	R^2			0.95			0.80			0.73												

820	Shopping Center																					
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	
Shopping Center	**820**	**8.1**	**1000 SF GLA**	**37.75**	**50%**	**50%**	**0.94**	**62%**	**38%**	**3.81**	**48%**	**52%**	**306**	**153**	**153**	**8**	**5**	**3**	**31**	**15**	**16**	**Average**
Shopping Center	820	8.1	1000 SF GLA	7.42	50%	50%	0.18	62%	38%	0.74	48%	52%	60	30	30	1	1	0	6	3	3	Minimum
Shopping Center	820	8.1	1000 SF GLA	207.98	50%	50%	23.74	62%	38%	18.69	48%	52%	1,685	843	842	192	119	73	151	72	79	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	
Shopping Center	820	8.1	1000 SF GLA	Ln(T)=0.68Ln(X)+5.57	50%	50%	T=0.50(X)+151.78	62%	38%	Ln(T)=0.74Ln(X)+2.89	48%	52%	1,088	544	544	156	97	59	85	41	44	Equation
Shopping Center	Standard Deviation			16.41			0.87			2.04												
	Number of Studies			147			84			261												
	Average Size			453			351			327												
	R^2			0.76			0.50			0.82												

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Appendix I – MAG Socioeconomic Projections

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5/22/2020

Socioeconomic Projections

Population and Employment

by Municipal Planning Area, Jurisdiction, and Regional Analysis Zone

June 2019

MARICOPA ASSOCIATION of GOVERNMENTS

302 North 1st Avenue, Suite 300
Phoenix, Arizona 85003
(602) 254-6300

Maricopa Association of Governments
Table 1: Total Population by Municipal Planning Area
July 1, 2018 and Projections July 1, 2020 to July 1, 2055

	Total Population					
Municipal Planning Area	**2018**	**2020**	**2030**	**2040**	**2050**	**2055**
Apache Junction	59,000	60,800	70,000	92,000	117,100	132,600
Avondale	84,200	86,700	101,800	111,900	119,000	122,100
Buckeye	89,000	97,700	186,600	305,400	409,900	459,300
Carefree	3,700	3,800	4,100	4,200	4,200	4,300
Cave Creek	5,900	6,000	6,500	7,000	7,200	7,300
Chandler	270,300	279,500	309,100	321,100	329,000	332,400
El Mirage	34,300	35,100	36,500	36,900	37,200	37,200
Florence	79,400	85,500	120,300	160,500	209,900	231,400
Fort McDowell Yavapai Native Nation	1,000	1,100	1,100	1,100	1,100	1,100
Fountain Hills	24,000	24,700	26,200	26,600	26,900	27,000
Gila Bend	2,500	2,700	3,700	3,700	3,900	4,200
Gila River Indian Native Nation	12,000	12,200	12,300	12,300	12,300	12,300
Gilbert	256,500	265,900	293,500	308,800	318,100	321,400
Glendale	272,200	279,100	306,400	323,400	333,200	338,800
Goodyear	87,300	92,100	140,300	192,200	228,600	247,900
Guadalupe	6,300	6,400	6,700	6,800	6,800	6,800
Litchfield Park	13,300	14,000	15,400	15,700	16,100	16,400
Maricopa	59,800	67,000	90,800	106,400	121,600	128,900
Mesa	533,400	552,800	607,500	649,400	680,000	690,300
Paradise Valley	14,000	14,100	14,700	15,100	15,200	15,300
Peoria	188,500	196,600	232,400	273,700	312,600	329,900
Phoenix	1,653,500	1,697,700	1,881,900	2,019,300	2,117,400	2,155,300
Queen Creek	58,700	65,000	90,900	109,000	120,900	128,500
Salt River Pima-Maricopa Native Nation	6,800	6,100	5,700	5,800	5,800	5,800
Scottsdale	245,500	253,800	281,900	299,400	311,400	316,700
Surprise	144,000	150,300	216,700	307,500	383,300	417,200
Tempe	185,300	190,000	217,100	247,000	272,400	282,200
Tolleson	7,000	7,100	8,600	10,300	11,400	11,800
Unicorporated Pinal County	66,800	68,600	79,100	93,700	110,800	122,700
Unincorporated Maricopa County	97,900	101,200	110,500	116,800	137,000	152,600
Wickenburg	8,200	8,500	9,400	9,500	9,800	10,000
Youngtown	6,600	6,800	7,300	7,700	7,800	7,800

Notes: Numbers rounded to the nearest 100. These projections include both the Maricopa County and Pinal County portions for Apache Junction, Queen Creek, and the Gila River Indian Community. Peoria and Wickenburg include only the Maricopa County portion.

Source: Maricopa Association of Governments (MAG) Socioeconomic Projections of Population and Employment by Municipal Planning Area (MPA) and Regional Analysis Zone (RAZ), June 2019

For explanation of variables and complete notation on this series, please refer to the Notes and Caveats in Appendix A.

Maricopa Association of Governments
Table 2: Total Employment by Municipal Planning Area
July 1, 2018 and Projections July 1, 2020 to July 1, 2055

	Total Employment					
Municipal Planning Area	**2018**	**2020**	**2030**	**2040**	**2050**	**2055**
Apache Junction	7,800	8,800	13,100	17,800	26,400	30,500
Avondale	22,400	23,200	30,400	36,200	42,800	45,400
Buckeye	21,600	26,900	42,900	64,500	98,000	128,900
Carefree	1,600	1,600	2,100	2,400	2,500	2,600
Cave Creek	2,200	2,400	2,700	2,900	3,000	3,200
Chandler	145,500	154,700	182,300	202,100	215,200	222,000
El Mirage	5,000	5,100	6,500	7,200	8,000	8,900
Florence	11,000	12,100	17,000	26,400	40,900	51,100
Fort McDowell Yavapai Native Nation	2,200	2,400	2,400	2,500	2,600	2,600
Fountain Hills	7,100	7,700	9,100	9,800	10,200	10,300
Gila Bend	900	900	1,200	1,300	1,500	1,700
Gila River Indian Native Nation	10,500	10,700	11,500	13,100	14,800	15,500
Gilbert	92,800	98,600	120,200	135,900	146,600	152,200
Glendale	103,800	111,400	134,000	153,100	168,900	175,900
Goodyear	35,900	37,200	50,600	69,000	92,600	102,500
Guadalupe	1,300	1,300	1,500	1,600	1,600	1,600
Litchfield Park	3,800	4,400	5,200	5,900	6,400	6,700
Maricopa	6,200	7,100	11,400	18,200	28,200	33,500
Mesa	197,200	205,900	249,000	296,000	333,700	351,000
Paradise Valley	6,300	6,300	6,800	7,100	7,500	7,700
Peoria	58,200	62,400	73,100	84,800	91,900	96,300
Phoenix	897,700	937,600	1,084,000	1,189,200	1,264,900	1,298,900
Queen Creek	15,500	16,400	19,900	24,000	28,900	31,100
Salt River Pima-Maricopa Native Nation	21,200	22,900	28,200	33,900	35,900	36,400
Scottsdale	197,200	207,400	235,500	252,000	261,700	267,000
Surprise	33,600	36,400	59,500	86,400	113,400	130,500
Tempe	190,000	200,500	231,200	257,700	280,000	290,900
Tolleson	17,700	18,300	21,200	23,900	26,000	26,700
Unicorporated Pinal County	3,500	3,900	6,000	8,900	13,500	17,800
Unincorporated Maricopa County	28,600	31,500	35,500	41,100	51,200	58,400
Wickenburg	4,400	4,600	5,200	5,600	6,000	6,200
Youngtown	1,500	1,800	2,200	2,700	2,800	3,100

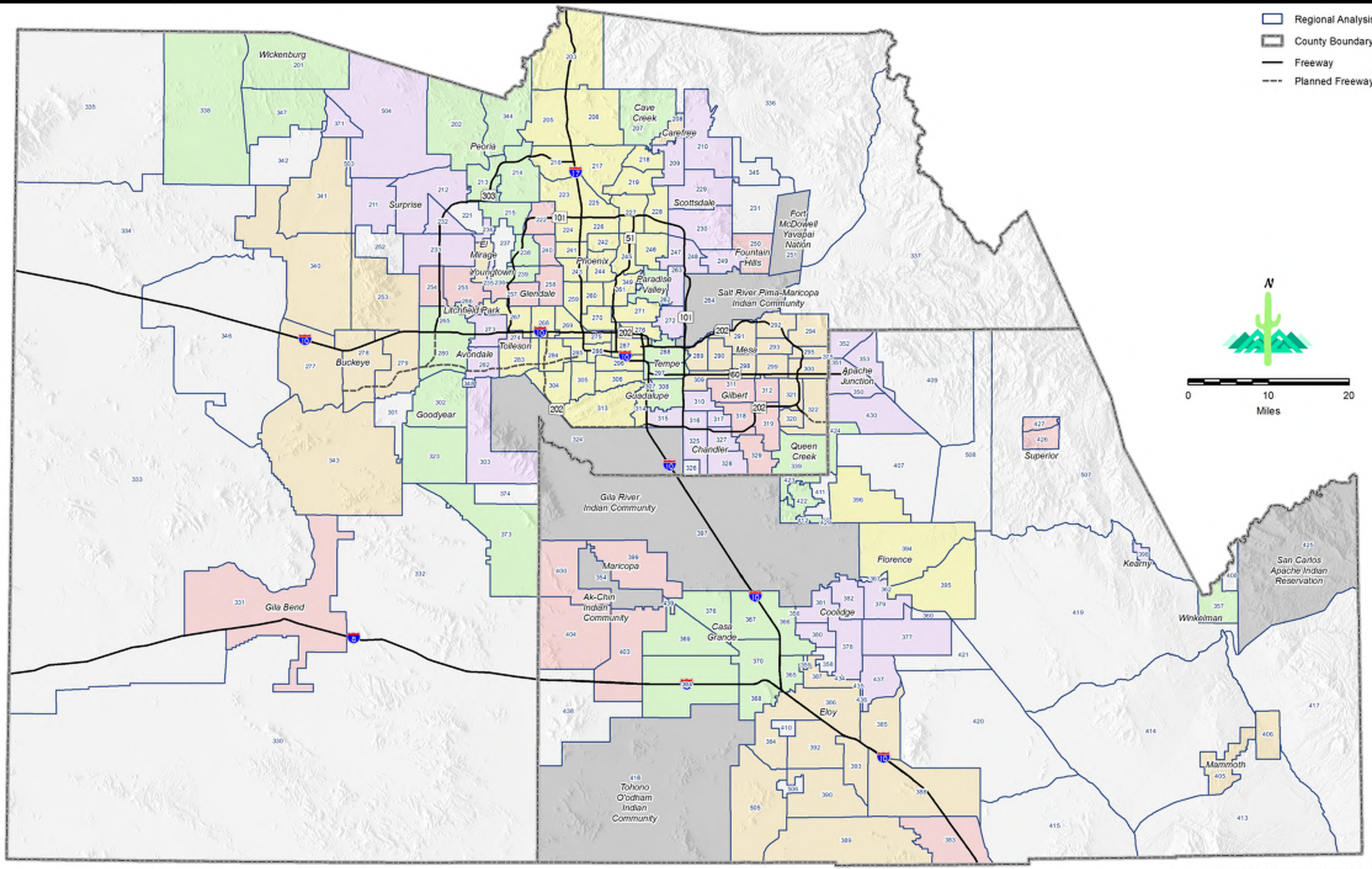
Notes: Numbers rounded to the nearest 100. These projections include both the Maricopa County and Pinal County portions for Apache Junction, Queen Creek, and the Gila River Indian Community. Peoria and Wickenburg include only the Maricopa County portion.

Source: Maricopa Association of Governments (MAG) Socioeconomic Projections of Population and Employment by Municipal Planning Area (MPA) and Regional Analysis Zone (RAZ), June 2019

For explanation of variables and complete notation on this series, please refer to the Notes and Caveats in Appendix A.

Regional Analysis Zones (RAZ), 2019
Maricopa and Pinal Counties, Arizona

MARICOPA ASSOCIATION of GOVERNMENTS



Source: MAG and the MAG member agencies, CAG and the CAG member agencies

Date: May 2019

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5/22/2020

Maricopa Association of Governments
Table 4: Population by Regional Analysis Zone (RAZ) by MPA
July 1, 2018 and Projections July 1, 2020 to July 1, 2055

RAZ	County	Total Population					
		2018	2020	2030	2040	2050	2055
	Total	1,653,469	1,697,722	1,881,876	2,019,269	2,117,427	2,155,333
Queen Creek MPA							
339	**Maricopa County**	49,781	53,579	72,670	82,172	87,155	89,586
422	**Pinal County**	13	13	300	437	564	638
423	**Pinal County**	1,286	1,410	3,714	6,136	7,457	8,686
424	**Pinal County**	7,642	10,003	14,200	20,287	25,759	29,586
	Total	58,722	65,005	90,884	109,032	120,935	128,496
Salt River Pima-Maricopa Native Nation MPA							
264	**Maricopa County**	6,798	6,073	5,708	5,820	5,820	5,820
	Total	6,798	6,073	5,708	5,820	5,820	5,820
Scottsdale MPA							
209	**Maricopa County**	12,188	12,605	13,961	14,512	14,984	15,255
210	**Maricopa County**	6,013	6,591	10,463	12,339	13,491	13,961
229	**Maricopa County**	20,542	21,269	25,221	27,864	29,698	30,229
230	**Maricopa County**	32,232	33,028	38,882	43,580	46,789	48,510
247	**Maricopa County**	13,549	13,858	15,420	16,342	16,871	17,019
248	**Maricopa County**	36,178	37,227	38,468	38,807	39,048	39,143
249	**Maricopa County**	20,903	21,410	22,543	22,768	22,839	22,848
263	**Maricopa County**	34,908	35,814	37,002	37,252	37,584	37,773
272	**Maricopa County**	68,987	71,970	79,910	85,942	90,054	91,927
	Total	245,500	253,772	281,870	299,406	311,358	316,665
Surprise MPA							
211	**Maricopa County**	863	884	4,471	23,112	36,704	40,737
212	**Maricopa County**	10,265	11,365	37,615	69,296	85,862	93,806
232	**Maricopa County**	29,296	30,200	34,506	37,144	37,927	38,313
233	**Maricopa County**	87,834	91,276	111,822	119,384	123,777	126,523
234	**Maricopa County**	8,969	9,467	10,460	10,878	11,335	11,488
371	**Maricopa County**	342	344	434	734	2,584	4,316
504	**Maricopa County**	6,460	6,718	17,425	46,912	85,127	102,004
	Total	144,029	150,254	216,733	307,460	383,316	417,187
Tempe MPA							
288	**Maricopa County**	73,442	76,444	100,651	129,202	150,094	157,410
297	**Maricopa County**	53,146	54,092	56,336	57,432	61,780	64,273
308	**Maricopa County**	58,756	59,473	60,120	60,348	60,476	60,559
	Total	185,344	190,009	217,107	246,982	272,350	282,242

Notes: Numbers rounded to the nearest 100. These projections include both the Maricopa County and Pinal County portions for Apache Junction, Queen Creek, and the Gila River Indian Community. Peoria and Wickenburg include only the Maricopa County portion.

Source: Maricopa Association of Governments (MAG) Socioeconomic Projections of Population and Employment by Municipal Planning Area (MPA) and Regional Analysis Zone (RAZ), May 2019

For explanation of variables and complete notation on this series, please refer to the Notes and Caveats in Appendix A.

Maricopa Association of Governments
Table 5: Employment by Regional Analysis Zone (RAZ) by MPA
July 1, 2018 and Projections July 1, 2020 to July 1, 2055

RAZ	County	Total Employment					
		2018	2020	2030	2040	2050	2055
	Total	897,713	937,622	1,083,980	1,189,209	1,264,941	1,298,903
Queen Creek MPA							
339	**Maricopa County**	13,933	14,696	16,482	18,825	20,733	21,151
422	**Pinal County**	9	8	18	22	31	39
423	**Pinal County**	89	109	351	620	1,068	1,639
424	**Pinal County**	1,435	1,576	3,073	4,571	7,020	8,309
	Total	15,466	16,389	19,924	24,038	28,852	31,138
Salt River Pima-Maricopa Native Nation MPA							
264	**Maricopa County**	21,160	22,869	28,215	33,871	35,903	36,442
	Total	21,160	22,869	28,215	33,871	35,903	36,442
Scottsdale MPA							
209	**Maricopa County**	4,488	4,659	4,851	5,174	5,161	5,344
210	**Maricopa County**	2,386	3,018	2,759	3,091	3,139	3,191
229	**Maricopa County**	9,604	10,005	11,231	11,962	12,193	12,896
230	**Maricopa County**	23,272	24,919	32,112	36,968	40,834	42,136
247	**Maricopa County**	44,254	47,089	52,652	54,822	55,679	56,105
248	**Maricopa County**	29,603	30,901	33,285	34,001	34,234	34,548
249	**Maricopa County**	7,409	7,692	8,179	8,684	8,906	9,045
263	**Maricopa County**	26,351	26,961	28,903	30,245	30,919	31,381
272	**Maricopa County**	49,833	52,185	61,540	67,039	70,676	72,330
	Total	197,200	207,429	235,512	251,986	261,741	266,976
Surprise MPA							
211	**Maricopa County**	60	53	1,560	3,172	4,766	7,017
212	**Maricopa County**	2,008	2,338	5,821	9,965	13,362	15,709
232	**Maricopa County**	8,349	9,228	11,297	12,187	12,875	13,116
233	**Maricopa County**	19,943	21,079	32,661	44,032	52,007	57,402
234	**Maricopa County**	2,588	2,711	3,354	3,922	4,239	4,386
371	**Maricopa County**	18	20	327	423	2,381	2,937
504	**Maricopa County**	677	1,020	4,460	12,695	23,763	29,886
	Total	33,643	36,449	59,480	86,396	113,393	130,453
Tempe MPA							
288	**Maricopa County**	88,927	94,229	111,010	128,894	144,714	152,703
297	**Maricopa County**	44,730	47,069	53,149	57,125	60,725	62,552
308	**Maricopa County**	56,380	59,208	67,052	71,701	74,542	75,596
	Total	190,037	200,506	231,211	257,720	279,981	290,851

Notes: Numbers rounded to the nearest 100. These projections include both the Maricopa County and Pinal County portions for Apache Junction, Queen Creek, and the Gila River Indian Community. Peoria and Wickenburg include only the Maricopa County portion.

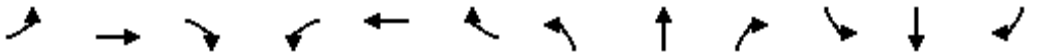
Source: Maricopa Association of Governments (MAG) Socioeconomic Projections of Population and Employment by Municipal Planning Area (MPA) and Regional Analysis Zone (RAZ), May 2019

For explanation of variables and complete notation on this series, please refer to the Notes and Caveats in Appendix A.

Appendix J – Year 2021 No Build Capacity Analysis

J

8-ZN-2020
5/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1135	34	10	1709	473	54	96	15	515	38	147
Future Volume (veh/h)	90	1135	34	10	1709	473	54	96	15	515	38	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	1234	37	11	1858	0	59	104	16	560	41	160
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	2203	66	302	2843		144	130	20	415	582	259
Arrive On Green	0.04	0.43	0.43	0.17	0.56	0.00	0.04	0.08	0.08	0.12	0.16	0.16
Sat Flow, veh/h	3456	5094	153	1781	5106	1585	3456	1583	244	3456	3554	1585
Grp Volume(v), veh/h	98	825	446	11	1858	0	59	0	120	560	41	160
Grp Sat Flow(s),veh/h/ln	1728	1702	1843	1781	1702	1585	1728	0	1827	1728	1777	1585
Q Serve(g_s), s	3.4	21.8	21.8	0.6	30.4	0.0	2.0	0.0	7.7	14.4	1.2	11.3
Cycle Q Clear(g_c), s	3.4	21.8	21.8	0.6	30.4	0.0	2.0	0.0	7.7	14.4	1.2	11.3
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	148	1472	797	302	2843		144	0	150	415	582	259
V/C Ratio(X)	0.66	0.56	0.56	0.04	0.65		0.41	0.00	0.80	1.35	0.07	0.62
Avail Cap(c_a), veh/h	161	1472	797	302	2843		173	0	374	415	989	441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	25.5	25.5	41.6	18.5	0.0	56.1	0.0	54.1	52.8	42.5	46.7
Incr Delay (d2), s/veh	6.3	1.5	2.8	0.0	1.2	0.0	0.7	0.0	3.7	172.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.5	9.5	0.3	11.0	0.0	0.9	0.0	3.7	16.1	0.5	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.9	27.0	28.3	41.6	19.7	0.0	56.8	0.0	57.8	225.7	42.5	47.6
LnGrp LOS	E	C	C	D	B		E	A	E	F	D	D
Approach Vol, veh/h		1369			1869	A		179			761	
Approach Delay, s/veh		30.0			19.8			57.5			178.4	
Approach LOS		C			B			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.8	58.0	10.0	25.2	11.6	73.2	20.0	15.2
Change Period (Y+Rc), s	6.4	6.1	5.0	* 5.6	6.4	* 6.4	* 5.6	5.4
Max Green Setting (Gmax), s	5.6	51.9	6.0	* 33	5.6	* 52	* 14	24.6
Max Q Clear Time (g_c+I1), s	2.6	23.8	4.0	13.3	5.4	32.4	16.4	9.7
Green Ext Time (p_c), s	0.0	1.1	0.0	0.0	0.0	2.4	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	53.7
HCM 6th LOS	D

Notes

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

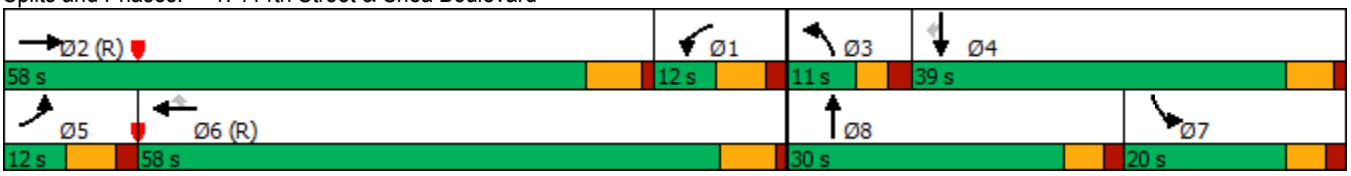
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBT	NBL	SBT	EBL	WBT	SBL	NBT
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	12	58	11	39	12	58	20	30
Maximum Split (%)	10.0%	48.3%	9.2%	32.5%	10.0%	48.3%	16.7%	25.0%
Minimum Split (s)	11.4	31.1	10	40.6	11.4	32.1	10.6	37.4
Yellow Time (s)	4.4	5.1	3	4.4	4.4	5.1	3.6	3.6
All-Red Time (s)	2	1	2	1.2	2	1	2	1.8
Minimum Initial (s)	5	10	5	7	5	10	5	7
Vehicle Extension (s)	2	0.2	2	0.2	2	0.2	2	0.2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4		4		4		4
Flash Dont Walk (s)		21		31		22		28
Dual Entry	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	90	32	102	113	32	44	12	102
End Time (s)	102	90	113	32	44	102	32	12
Yield/Force Off (s)	95.6	83.9	108	26.4	37.6	95.9	26.4	6.6
Yield/Force Off 170(s)	95.6	62.9	108	115.4	37.6	73.9	26.4	98.6
Local Start Time (s)	46	108	58	69	108	0	88	58
Local Yield (s)	51.6	39.9	64	102.4	113.6	51.9	102.4	82.6
Local Yield 170(s)	51.6	18.9	64	71.4	113.6	29.9	102.4	54.6

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	125
Offset: 44 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green	

Splits and Phases: 1: 114th Street & Shea Boulevard



8-ZN-2020
5/22/2020

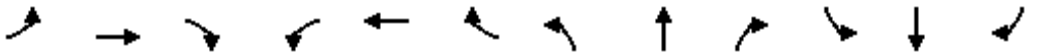
Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	12	151	3	30	48
Future Vol, veh/h	0	12	151	3	30	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	164	3	33	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	258	166	0	0	167	0
Stage 1	166	-	-	-	-	-
Stage 2	92	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	720	878	-	-	1410	-
Stage 1	863	-	-	-	-	-
Stage 2	922	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	703	878	-	-	1410	-
Mov Cap-2 Maneuver	722	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	2.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	878	1410	-
HCM Lane V/C Ratio	-	-	0.015	0.023	-
HCM Control Delay (s)	-	-	9.2	7.6	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	218	1682	43	20	902	531	42	76	19	785	91	104
Future Volume (veh/h)	218	1682	43	20	902	531	42	76	19	785	91	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	237	1828	47	22	980	0	46	83	21	853	99	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	2086	54	113	1959		144	106	27	898	1049	468
Arrive On Green	0.08	0.41	0.41	0.06	0.38	0.00	0.04	0.07	0.07	0.26	0.30	0.30
Sat Flow, veh/h	3456	5119	132	1781	5106	1585	3456	1440	364	3456	3554	1585
Grp Volume(v), veh/h	237	1215	660	22	980	0	46	0	104	853	99	113
Grp Sat Flow(s),veh/h/ln	1728	1702	1847	1781	1702	1585	1728	0	1805	1728	1777	1585
Q Serve(g_s), s	8.1	39.5	39.5	1.4	17.6	0.0	1.6	0.0	6.8	29.1	2.4	6.5
Cycle Q Clear(g_c), s	8.1	39.5	39.5	1.4	17.6	0.0	1.6	0.0	6.8	29.1	2.4	6.5
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	292	1387	753	113	1959		144	0	133	898	1049	468
V/C Ratio(X)	0.81	0.88	0.88	0.20	0.50		0.32	0.00	0.78	0.95	0.09	0.24
Avail Cap(c_a), veh/h	334	1387	753	113	1959		317	0	159	904	1049	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	32.8	32.8	53.3	28.2	0.0	55.8	0.0	54.7	43.6	30.7	32.1
Incr Delay (d2), s/veh	10.9	8.0	13.7	0.3	0.9	0.0	0.5	0.0	15.4	18.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	16.6	19.2	0.6	6.9	0.0	0.7	0.0	3.7	14.4	1.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	40.8	46.4	53.6	29.1	0.0	56.3	0.0	70.0	62.2	30.7	32.2
LnGrp LOS	E	D	D	D	C		E	A	E	E	C	C
Approach Vol, veh/h		2112			1002	A		150			1065	
Approach Delay, s/veh		45.2			29.7			65.8			56.1	
Approach LOS		D			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	55.0	10.0	41.0	16.6	52.4	36.8	14.2
Change Period (Y+Rc), s	6.4	6.1	5.0	* 5.6	6.4	* 6.4	* 5.6	5.4
Max Green Setting (Gmax), s	5.6	48.9	11.0	* 31	11.6	* 43	* 31	10.6
Max Q Clear Time (g_c+I1), s	3.4	41.5	3.6	8.5	10.1	19.6	31.1	8.8
Green Ext Time (p_c), s	0.0	1.5	0.0	0.1	0.1	1.1	0.1	0.0

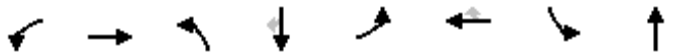
Intersection Summary	
HCM 6th Ctrl Delay	45.0
HCM 6th LOS	D

Notes

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

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

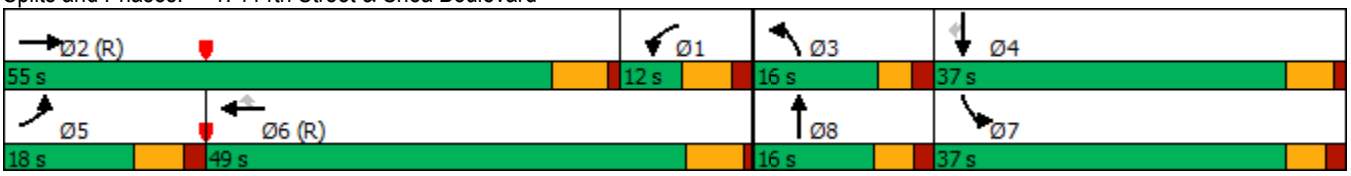
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBT	NBL	SBT	EBL	WBT	SBL	NBT
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	12	55	16	37	18	49	37	16
Maximum Split (%)	10.0%	45.8%	13.3%	30.8%	15.0%	40.8%	30.8%	13.3%
Minimum Split (s)	11.4	31.1	10	40.6	11.4	32.1	10.6	37.4
Yellow Time (s)	4.4	5.1	3	4.4	4.4	5.1	3.6	3.6
All-Red Time (s)	2	1	2	1.2	2	1	2	1.8
Minimum Initial (s)	5	10	5	7	5	10	5	7
Vehicle Extension (s)	2	0.2	2	0.2	2	0.2	2	0.2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4		4		4		4
Flash Dont Walk (s)		21		31		22		28
Dual Entry	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	41	106	53	69	106	4	69	53
End Time (s)	53	41	69	106	4	53	106	69
Yield/Force Off (s)	46.6	34.9	64	100.4	117.6	46.9	100.4	63.6
Yield/Force Off 170(s)	46.6	13.9	64	69.4	117.6	24.9	100.4	35.6
Local Start Time (s)	37	102	49	65	102	0	65	49
Local Yield (s)	42.6	30.9	60	96.4	113.6	42.9	96.4	59.6
Local Yield 170(s)	42.6	9.9	60	65.4	113.6	20.9	96.4	31.6

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	145
Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Green	

Splits and Phases: 1: 114th Street & Shea Boulevard



Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	29	106	0	11	148
Future Vol, veh/h	2	29	106	0	11	148
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	32	115	0	12	161

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	220	115	0	0	115	0
Stage 1	115	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	758	937	-	-	1473	-
Stage 1	909	-	-	-	-	-
Stage 2	908	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	752	937	-	-	1473	-
Mov Cap-2 Maneuver	756	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	901	-	-	-	-	-

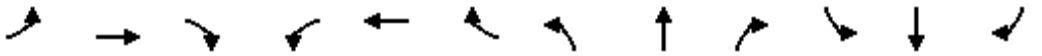
Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	923	1473	-
HCM Lane V/C Ratio	-	-	0.037	0.008	-
HCM Control Delay (s)	-	-	9	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Appendix K – Year 2021 Build Capacity Analysis

K

8-ZN-2020
5/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1135	40	21	1709	473	58	97	18	515	42	147
Future Volume (veh/h)	90	1135	40	21	1709	473	58	97	18	515	42	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	1234	43	23	1858	0	63	105	20	560	46	160
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	2191	76	297	2827		144	130	25	415	592	264
Arrive On Green	0.04	0.43	0.43	0.17	0.55	0.00	0.04	0.09	0.09	0.12	0.17	0.17
Sat Flow, veh/h	3456	5066	177	1781	5106	1585	3456	1527	291	3456	3554	1585
Grp Volume(v), veh/h	98	829	448	23	1858	0	63	0	125	560	46	160
Grp Sat Flow(s),veh/h/ln	1728	1702	1839	1781	1702	1585	1728	0	1818	1728	1777	1585
Q Serve(g_s), s	3.4	21.9	21.9	1.3	30.6	0.0	2.1	0.0	8.1	14.4	1.3	11.2
Cycle Q Clear(g_c), s	3.4	21.9	21.9	1.3	30.6	0.0	2.1	0.0	8.1	14.4	1.3	11.2
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	148	1472	795	297	2827		144	0	155	415	592	264
V/C Ratio(X)	0.66	0.56	0.56	0.08	0.66		0.44	0.00	0.81	1.35	0.08	0.61
Avail Cap(c_a), veh/h	161	1472	795	297	2827		173	0	373	415	989	441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	25.5	25.5	42.2	18.8	0.0	56.1	0.0	53.9	52.8	42.2	46.3
Incr Delay (d2), s/veh	6.3	1.6	2.9	0.0	1.2	0.0	0.8	0.0	3.8	172.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.6	9.6	0.6	11.1	0.0	0.9	0.0	3.9	16.1	0.6	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.9	27.1	28.4	42.3	20.0	0.0	56.9	0.0	57.7	225.7	42.2	47.2
LnGrp LOS	E	C	C	D	B		E	A	E	F	D	D
Approach Vol, veh/h		1375			1881	A		188			766	
Approach Delay, s/veh		30.1			20.3			57.4			177.4	
Approach LOS		C			C			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.4	58.0	10.0	25.6	11.6	72.8	20.0	15.6
Change Period (Y+Rc), s	6.4	6.1	5.0	* 5.6	6.4	* 6.4	* 5.6	5.4
Max Green Setting (Gmax), s	5.6	51.9	6.0	* 33	5.6	* 52	* 14	24.6
Max Q Clear Time (g_c+I1), s	3.3	23.9	4.1	13.2	5.4	32.6	16.4	10.1
Green Ext Time (p_c), s	0.0	1.1	0.0	0.0	0.0	2.4	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	53.7
HCM 6th LOS	D

Notes

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

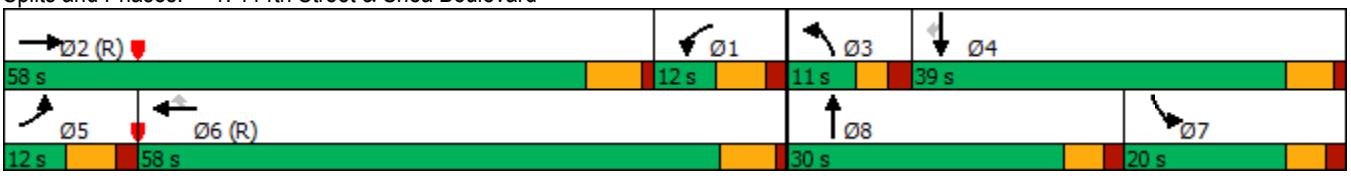
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBT	NBL	SBT	EBL	WBT	SBL	NBT
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	12	58	11	39	12	58	20	30
Maximum Split (%)	10.0%	48.3%	9.2%	32.5%	10.0%	48.3%	16.7%	25.0%
Minimum Split (s)	11.4	31.1	10	40.6	11.4	32.1	10.6	37.4
Yellow Time (s)	4.4	5.1	3	4.4	4.4	5.1	3.6	3.6
All-Red Time (s)	2	1	2	1.2	2	1	2	1.8
Minimum Initial (s)	5	10	5	7	5	10	5	7
Vehicle Extension (s)	2	0.2	2	0.2	2	0.2	2	0.2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4		4		4		4
Flash Dont Walk (s)		21		31		22		28
Dual Entry	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	90	32	102	113	32	44	12	102
End Time (s)	102	90	113	32	44	102	32	12
Yield/Force Off (s)	95.6	83.9	108	26.4	37.6	95.9	26.4	6.6
Yield/Force Off 170(s)	95.6	62.9	108	115.4	37.6	73.9	26.4	98.6
Local Start Time (s)	46	108	58	69	108	0	88	58
Local Yield (s)	51.6	39.9	64	102.4	113.6	51.9	102.4	82.6
Local Yield 170(s)	51.6	18.9	64	71.4	113.6	29.9	102.4	54.6

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	125
Offset: 44 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Green	

Splits and Phases: 1: 114th Street & Shea Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	0	0	0	12	1	151	3	30	48	0
Future Volume (Veh/h)	8	0	0	0	0	12	1	151	3	30	48	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	0	0	0	0	13	1	164	3	33	52	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											407	
pX, platoon unblocked												
vC, conflicting volume	297	287	26	260	286	166	52			167		
vC1, stage 1 conf vol	118	118		168	168							
vC2, stage 2 conf vol	179	169		92	118							
vCu, unblocked vol	297	287	26	260	286	166	52			167		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	98	100			98		
cM capacity (veh/h)	714	682	1044	763	697	850	1552			1408		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	9	13	1	167	33	35	17
Volume Left	9	0	1	0	33	0	0
Volume Right	0	13	0	3	0	0	0
cSH	714	850	1552	1700	1408	1700	1700
Volume to Capacity	0.01	0.02	0.00	0.10	0.02	0.02	0.01
Queue Length 95th (ft)	1	1	0	0	2	0	0
Control Delay (s)	10.1	9.3	7.3	0.0	7.6	0.0	0.0
Lane LOS	B	A	A		A		
Approach Delay (s)	10.1	9.3	0.0		3.0		
Approach LOS	B	A					

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	28.1%	ICU Level of Service		A
Analysis Period (min)	15			

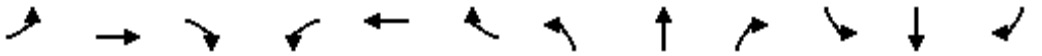
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	171	78	21
Future Vol, veh/h	0	0	0	171	78	21
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	0	0	186	85	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	54	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	1002	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	1002	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	218	1682	53	27	902	531	50	82	38	785	96	104
Future Volume (veh/h)	218	1682	53	27	902	531	50	82	38	785	96	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	237	1828	58	29	980	0	54	89	41	853	104	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	2029	64	111	1913		144	108	50	875	1081	482
Arrive On Green	0.08	0.40	0.40	0.06	0.37	0.00	0.04	0.09	0.09	0.25	0.30	0.30
Sat Flow, veh/h	3456	5084	161	1781	5106	1585	3456	1212	558	3456	3554	1585
Grp Volume(v), veh/h	237	1223	663	29	980	0	54	0	130	853	104	113
Grp Sat Flow(s),veh/h/ln	1728	1702	1841	1781	1702	1585	1728	0	1770	1728	1777	1585
Q Serve(g_s), s	8.1	40.4	40.5	1.9	17.8	0.0	1.8	0.0	8.7	29.4	2.5	6.4
Cycle Q Clear(g_c), s	8.1	40.4	40.5	1.9	17.8	0.0	1.8	0.0	8.7	29.4	2.5	6.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	292	1359	735	111	1913		144	0	158	875	1081	482
V/C Ratio(X)	0.81	0.90	0.90	0.26	0.51		0.38	0.00	0.82	0.97	0.10	0.23
Avail Cap(c_a), veh/h	334	1359	735	111	1913		346	0	186	875	1081	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	33.8	33.8	53.6	29.0	0.0	56.0	0.0	53.7	44.4	29.9	31.3
Incr Delay (d2), s/veh	10.9	9.8	16.4	0.5	1.0	0.0	0.6	0.0	19.3	24.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	17.4	20.1	0.8	7.1	0.0	0.8	0.0	4.7	15.1	1.1	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	43.6	50.2	54.1	30.0	0.0	56.6	0.0	73.0	68.5	29.9	31.4
LnGrp LOS	E	D	D	D	C		E	A	E	E	C	C
Approach Vol, veh/h		2123			1009	A		184			1070	
Approach Delay, s/veh		48.1			30.7			68.2			60.8	
Approach LOS		D			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	54.0	10.0	42.1	16.6	51.4	36.0	16.1
Change Period (Y+Rc), s	6.4	6.1	5.0	* 5.6	6.4	* 6.4	* 5.6	5.4
Max Green Setting (Gmax), s	5.6	47.9	12.0	* 31	11.6	* 42	* 30	12.6
Max Q Clear Time (g_c+I1), s	3.9	42.5	3.8	8.4	10.1	19.8	31.4	10.7
Green Ext Time (p_c), s	0.0	1.4	0.0	0.1	0.1	1.1	0.0	0.0

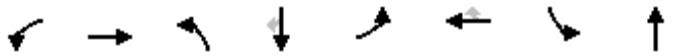
Intersection Summary	
HCM 6th Ctrl Delay	48.0
HCM 6th LOS	D

Notes

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

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

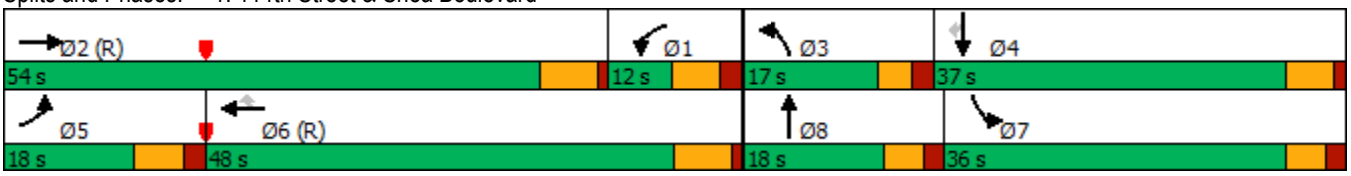
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

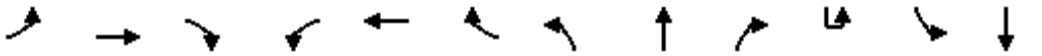


Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBT	NBL	SBT	EBL	WBT	SBL	NBT
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	12	54	17	37	18	48	36	18
Maximum Split (%)	10.0%	45.0%	14.2%	30.8%	15.0%	40.0%	30.0%	15.0%
Minimum Split (s)	11.4	31.1	10	40.6	11.4	32.1	10.6	37.4
Yellow Time (s)	4.4	5.1	3	4.4	4.4	5.1	3.6	3.6
All-Red Time (s)	2	1	2	1.2	2	1	2	1.8
Minimum Initial (s)	5	10	5	7	5	10	5	7
Vehicle Extension (s)	2	0.2	2	0.2	2	0.2	2	0.2
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4		4		4		4
Flash Dont Walk (s)		21		31		22		28
Dual Entry	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	40	106	52	69	106	4	70	52
End Time (s)	52	40	69	106	4	52	106	70
Yield/Force Off (s)	45.6	33.9	64	100.4	117.6	45.9	100.4	64.6
Yield/Force Off 170(s)	45.6	12.9	64	69.4	117.6	23.9	100.4	36.6
Local Start Time (s)	36	102	48	65	102	0	66	48
Local Yield (s)	41.6	29.9	60	96.4	113.6	41.9	96.4	60.6
Local Yield 170(s)	41.6	8.9	60	65.4	113.6	19.9	96.4	32.6

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	145
Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Green	

Splits and Phases: 1: 114th Street & Shea Boulevard





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	31	0	2	2	0	29	1	106	0	2	11	148
Future Volume (Veh/h)	31	0	2	2	0	29	1	106	0	2	11	148
Sign Control		Stop			Stop			Free				Free
Grade		0%			0%			0%				0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	0	2	2	0	32	1	115	0	0	12	161
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL				None
Median storage veh)								2				
Upstream signal (ft)												407
pX, platoon unblocked										0.00		
vC, conflicting volume	334	302	80	224	302	115	161			0	115	
vC1, stage 1 conf vol	185	185		117	117							
vC2, stage 2 conf vol	149	117		106	185							
vCu, unblocked vol	334	302	80	224	302	115	161			0	115	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			0.0	4.1	
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			0.0	2.2	
p0 queue free %	95	100	100	100	100	97	100			0	99	
cM capacity (veh/h)	703	690	963	800	692	916	1416			0	1472	

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	36	34	1	115	12	107	54
Volume Left	34	2	1	0	12	0	0
Volume Right	2	32	0	0	0	0	0
cSH	714	908	1416	1700	1472	1700	1700
Volume to Capacity	0.05	0.04	0.00	0.07	0.01	0.06	0.03
Queue Length 95th (ft)	4	3	0	0	1	0	0
Control Delay (s)	10.3	9.1	7.5	0.0	7.5	0.0	0.0
Lane LOS	B	A	A		A		
Approach Delay (s)	10.3	9.1	0.1		0.5		
Approach LOS	B	A					

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	22.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.92
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	0	168	159	22
Future Vol, veh/h	0	2	0	168	159	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	2	0	183	173	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	99	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	938	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	938	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	938	-	-
HCM Lane V/C Ratio	-	0.002	-	-
HCM Control Delay (s)	-	8.8	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-