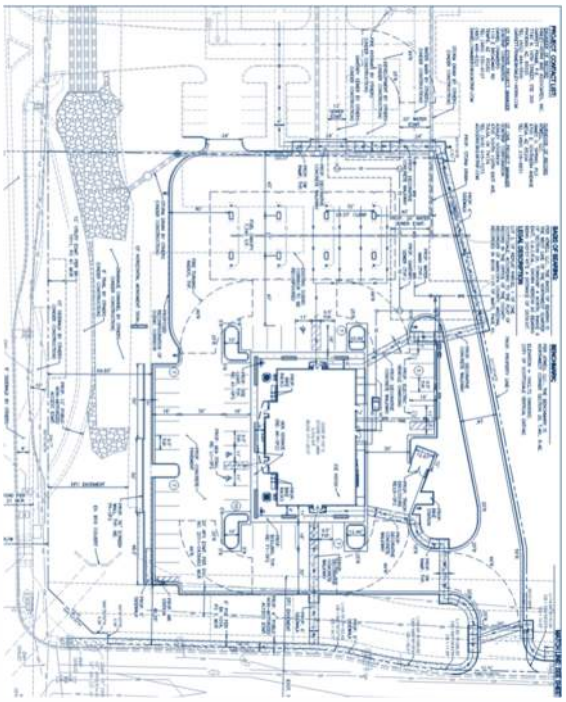
QuikTrip

Transportation Impact & Mitigation Analysis



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1. INTRODUCTION AND EXECUTIVE SUMMARY

1.1. PURPOSE OF REPORT AND STUDY OBJECTIVES

Lōkahi, LLC (Lōkahi) was retained by QuikTrip Corporation to complete a Transportation Impact & Mitigation Analysis for the proposed QuikTrip development located on the northeast corner of Scottsdale Road and Legacy Boulevard. The objective of this Transportation 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.

1.2. EXECUTIVE SUMMARY

The QuikTrip development will be located on the northeast corner of Scottsdale Road and Legacy Boulevard in Scottsdale, Arizona. The proposed QuikTrip will include a 5,312 square foot convenience store and 16 vehicle fueling positions.

This Transportation Impact and Mitigation Analysis includes:

- Level of service analysis of existing conditions for the weekday AM and PM peak hours
- Trip Generation for the existing and proposed development
- Level of service analysis for the opening year (2023) weekday AM and PM peak hours
    - 2023 No Build
    - 2023 Build

The following are the two (2) existing intersections included in this study:

- Scottsdale Road and Legacy Boulevard (2)
- Legacy Boulevard and 73rd Street (4)

Existing Capacity Analysis

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

Scottsdale Road and Legacy Boulevard (2) – Signalized

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

Trip Generation

The proposed development is anticipated to generate a total of 4,114 weekday trips with 433 occurring during the AM peak hour and 364 trips during the PM peak hour. Based on the data for ITE Land Use 935 provided in the *Trip Generation Handbook*, a percentage of the development's AM and PM total trips, may be attributed to traffic passing the site on the way from an origin to an ultimate destination. **Thus, the proposed development is anticipated to add 1,032 new weekday trips, with 96 new trips occurring during the AM peak hour and 102 new trips occurring during the PM peak hour.**

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Convenience Store/Gas Station	945	16	Fueling Positions	4,114	433	217	216	364	182	182
			Pass-By	3,082	337	169	168	262	131	131
			Total	**1,032**	**96**	**48**	**48**	**102**	**51**	**51**

Future Conditions - Year 2023

The QuikTrip is anticipated to be constructed and ready to open in the year 2023. Therefore, year 2023 analyses were completed with and without the build out of the proposed development. An annual growth rate of 2.0% was applied to the existing traffic volumes.

A capacity analysis was completed for both the AM and PM peak hours for year 2023, with and without the build out of the proposed development. All movements operate at a LOS D or better or are maintained at the year 2023 no build level of service, with the exception of

Scottsdale Road and Legacy Boulevard (2) – Signalized

- WB left PM a peak hour operates at LOS E

The results of the year 2023 no build capacity analysis indicate the westbound left turn at Scottsdale Road and Legacy Boulevard (2) operates at a LOS D with a delay of 54.8 seconds in the PM peak hour. Under the build conditions, the westbound left operates at a LOS E with a delay of 56.2 seconds in the PM peak hour. This represents an increase of 1.4 seconds (2.5%).

Also, it should be noted that the overall intersection operates at a LOS A.

Recommendations

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

- **Scottsdale Road and Driveway A (1)**
  Buildout of a right-in and right-out access point, 450 feet north of Legacy Boulevard. This will be a shared access driveway. A northbound right turn lane will be constructed at this driveway by others.

- **Legacy Boulevard and Driveway B (3)**
  Buildout of a right-in and right-out access point, 350 feet east of Scottsdale Road. This will be a shared access driveway. A westbound right-turn lane will be constructed at this driveway location.

  The location, movements (right-in/right-out), and traffic control (stop-controlled) at Driveway B is consistent and was included in the Traffic Impact and Mitigation Analysis (TI&MA) for the One Scottsdale development, dated May 2016. This 2016 TI&MA was accepted by the City of Scottsdale Transportation Department

2. PROPOSED DEVELOPMENT

The study area is located in the City of Scottsdale, Arizona, approximately one-half mile north of State Route Loop 101 (SR 101). The proposed development is located on the northeast corner of Scottsdale Road and Legacy Boulevard.

The proposed QuikTrip will include a 5,312 square foot convenience store and 16 vehicle fueling positions.

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

There are two (2) access points to the proposed site:

Scottsdale Road and Driveway A (1) is located approximately 450 feet north of Legacy Boulevard and will allow for right-in and right-out movements only. This will be a shared-access driveway.

Legacy Boulevard and Driveway B (3) is located approximately 350 feet east of Scottsdale Road and will allow for right-in and right-out movements only. This will be a shared-access driveway.

Additionally, there will be an agreement with the property to the east to allow access to 73rd Street.

See **Figure 3** for study area.

FIGURE 1 | VICINITY MAP

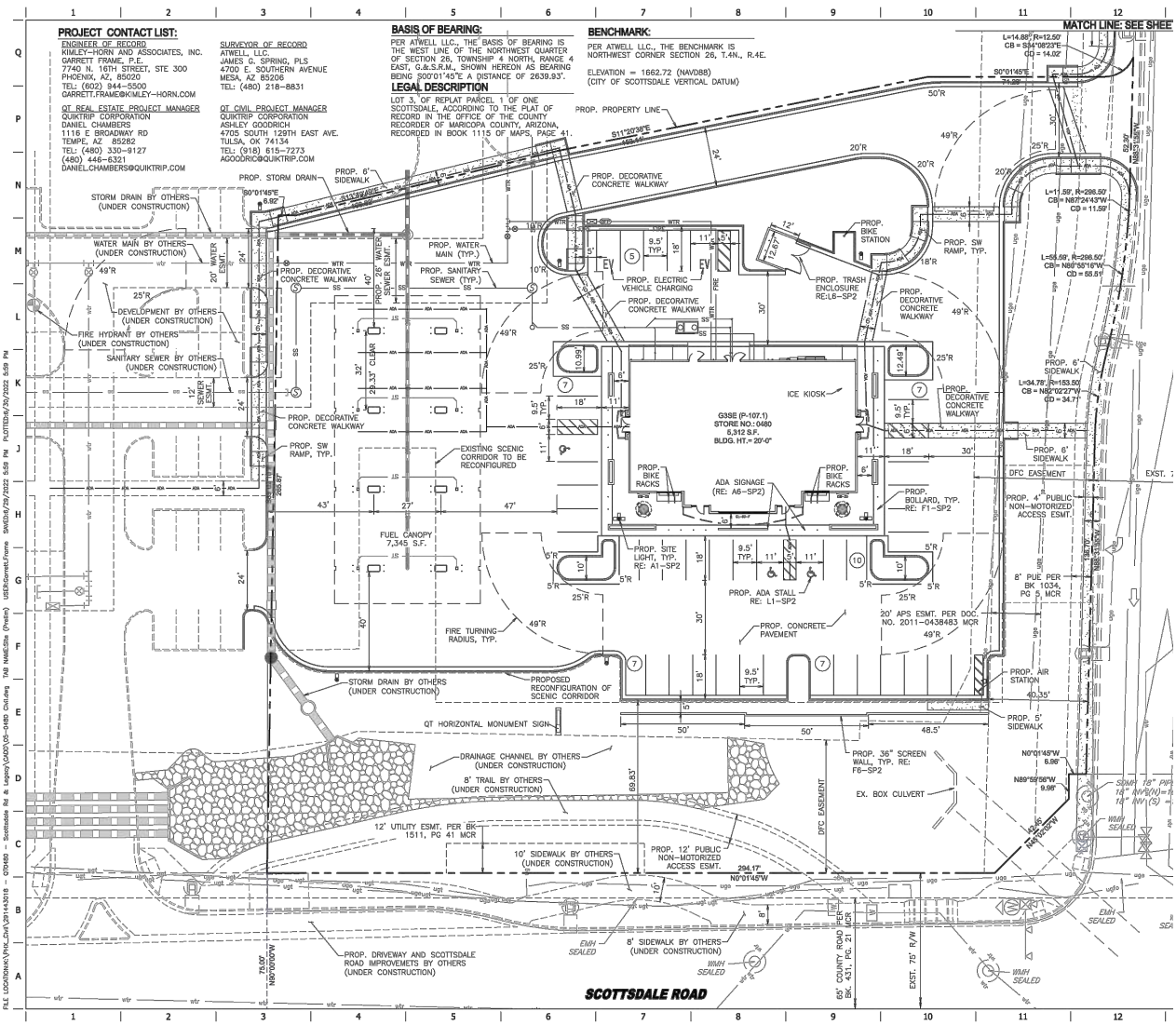
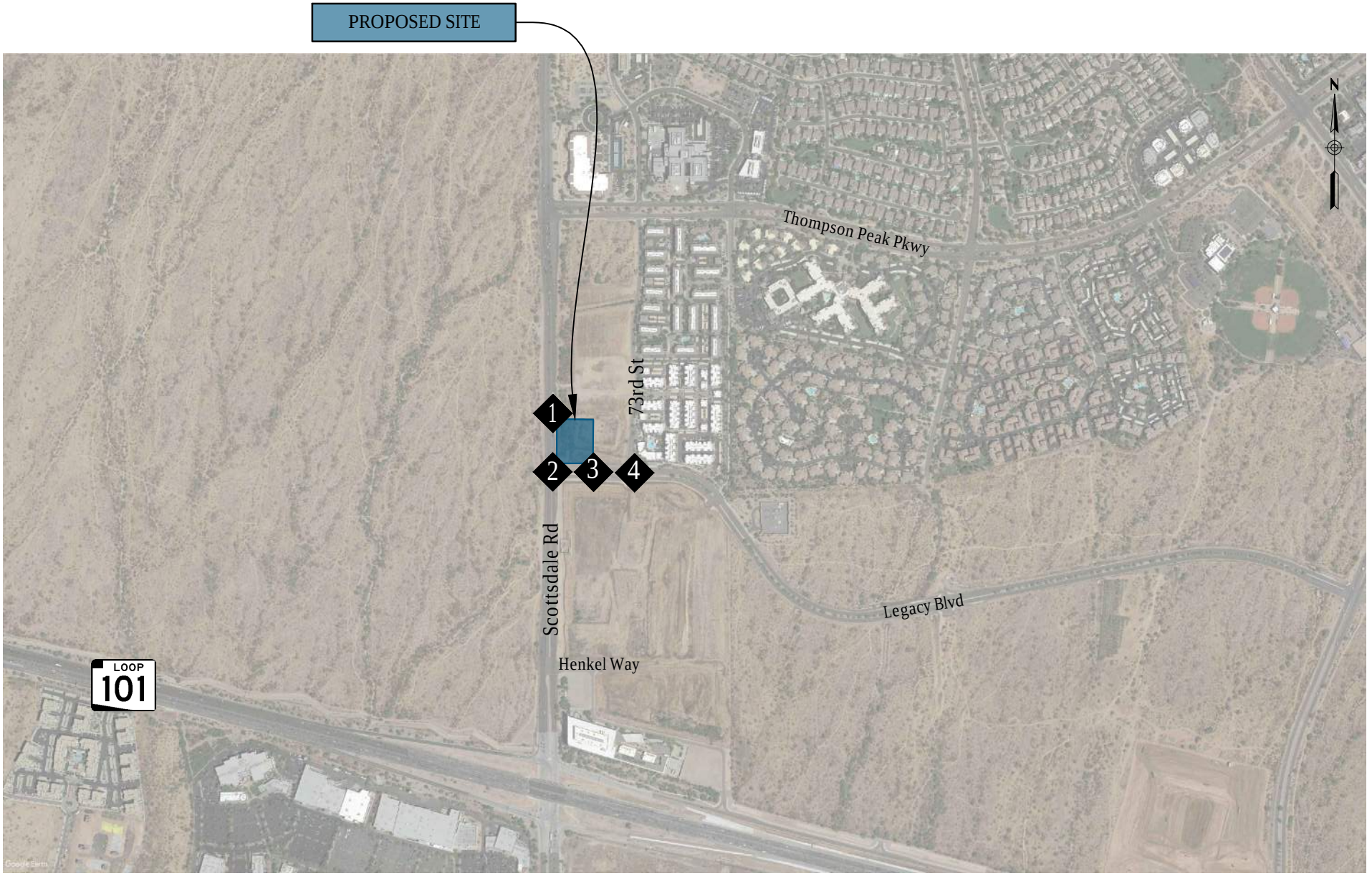


FIGURE 2 | SITE PLAN



Legend

X Intersection

FIGURE 3 | STUDY AREA

3. AREA CONDITIONS

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

3.1. STUDY ROADWAY SEGMENTS

Scottsdale Road runs north-south that generally provides two (2) travel lanes for each direction of travel with a center two-way left turn lane, just north of Henkel Way. Scottsdale Road generally provides three (3) travel lanes for each direction of travel with a raised landscaped median, south of Henkel Way. There is a posted speed limit of 45 miles per hour (mph). The City of Scottsdale classifies Scottsdale Road as a major arterial, according to *City of Scottsdale Transportation Master Plan,* dated July 2016. The City of Scottsdale's *2018 Average Daily Segment Traffic (ADT) Volumes* map reports an ADT of 49,700 vehicles per day (vpd) along Scottsdale Road, between SR 101 and Thompson Peak Parkway.

Legacy Boulevard is generally an east-west roadway, that currently operates between Scottsdale Road and Hayden Road, within the study area. Two (2) travel lanes are provided for each direction of travel with a raised landscaped median. There is a posted speed limit of 30 mph. Legacy Boulevard is classified as a minor arterial, per the *City of Scottsdale Transportation Master Plan,* dated July 2016.

73rd Street, within the vicinity of the study area, is a north-south roadway, located approximately 550 feet east of Scottsdale Road. 73rd Street currently operates between Legacy Boulevard to Thompson Peak Parkway. There is an unposted speed limit of 25 mph.

Thompson Peak Parkway, within the vicinity of the study area, is generally an east-west roadway, providing two (2) travel lanes for each direction of travel with a raised landscaped median. There is a posted speed limit of 45 mph. Thompson Peak Parkway is classified as a minor arterial, per the *City of Scottsdale Transportation Master Plan,* dated July 2016.

3.2. STUDY INTERSECTIONS

Scottsdale Road and Legacy Boulevard (2) currently operates as a signalized T-intersection. The northbound approach provides two (2) through lanes and one (1) dedicated right turn lane. The southbound approach provides one (1) dedicated left turn lane and two (2) through lanes. The westbound approach provides two (2) dedicated left turn lanes and one (1) dedicated right turn lane.

73rd Street and Legacy Boulevard (4) currently operates as a stop-controlled t-intersection, with the stop control on the southbound approach. The southbound approach provides one (1) dedicated left turn and one (1) dedicated right turn lane. The eastbound approach provides one (1) dedicated left turn lane, two (2) through lanes, and one (1) dedicated right turn lane. The westbound approach provides one (1) dedicated left turn lane, one (1) through lane, and one (1) shared through-right turn lane. The south leg of the intersection is currently developed to approximately 50' to the south, where it currently terminates and is gated.

3.3. SURROUNDING AREA LAND USE

The proposed QuikTrip is located in Scottsdale, Arizona. The proposed development is bordered by Scottsdale Road to the west, with vacant and undeveloped land located on the west side of Scottsdale Road. Multi-family residential developments generally surround the area to the east.

3.4. SITE ACCESSIBILITY

Roadway System

The study area is located in the City of Scottsdale, Arizona approximately one-half mile north of State Route 101 (SR 101). This route provides regionals access to the Phoenix metropolitan area. Within the vicinity of the proposed site there is a well-developed roadway network.

Pedestrian Facilities

Between Henkel Way and Thompson Peak Parkway, Scottsdale Road does not currently provide sidewalk facilities.

Legacy Boulevard generally does not currently provide sidewalk facilities, with the exception of an approximate 1,100-foot segment on the north side of the roadway, east of 73rd Street.

73rd Street provides sidewalks on the east side of the roadway, between Legacy Boulevard and Thompson Peak Parkway.

Thompson Peak Parkway generally provides continuous sidewalks on both sides of the roadway, within the study area, with the exception of an approximate 500-foot segment between Scottsdale Road and73rd Street.

Bicycle Facilities

Marked on-street bike lanes are provided in each direction of travel along Legacy Boulevard and Thompson Peak Parkway, within the study area.

Scottsdale Road and 73rd Street do not provide on-street bicycle lanes, within the study area.

Transit Facilities

Within the immediate study area, Valley Metro Route 72 operates along Scottsdale Road. There are two (2) bus stops for Route 72 in the area. There is one (1) bus stop provided on the northwest corner of Thompson Peak Parkway and Scottsdale Healthcare Drive. An additional bus stop is located along Scottsdale Healthcare Drive, just east of 73rd Street.

3.5. COLLISION RATES

The City of Scottsdale's 2020 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 rate for the study intersections were not provided in the City of Scottsdale's 2020 Traffic Volume and Collision Rate Data.

Table 1 – Collision Rates – Study Roadway Segments

Segment	From	To	Collision Rate	Rank
Scottsdale Road	101 Freeway (SR 101)	Thompson Peak Parkway	1.41	111
2020 City of Scottsdale Average Segment Collision Rate			1.36	

3.6. COLLISION HISTORY

The most recent 3-year collision history, from January 2018 to December 2020, was obtained from the City of Scottsdale. See **Appendix B** for collision data. The data included the following intersections and segments:

- Scottsdale Road and Legacy Boulevard (2)
- Scottsdale Road, Henkel Way to Legacy Boulevard
- Scottsdale Road, Legacy Boulevard to Thompson Peak Parkway
- Legacy Boulevard, Scottsdale Road to approximately ¼ mile to the east

Scottsdale Road and Legacy Boulevard (2)

During the three-year period, there were a total of 11 collisions at the intersection of Scottsdale Road and Legacy Boulevard (2). There was a total of 8 rear end, 2 sideswipe same direction, and 1 angle collision(s). Of the 11 collisions, 6 were speed too fast for conditions, 2 followed too closely, 2 unsafe lane changes, and 1 failed to yield the right of way.

Scottsdale Road, Henkel Way to Legacy Boulevard

During the three-year period, there were a total of 6 collisions along the segment of Scottsdale Road, between Henkel Way and Legacy Boulevard. Of the 6 collisions, there were 4 rear end, 1 sideswipe same direction, and 1 angle collision(s). Of which, 3 were speed too fast for conditions, 1 followed too closely, 1 unsafe lane changes, and 1 unknown.

Scottsdale Road, Legacy Boulevard to Thompson Peak Parkway

During the three-year period, there were a total of 18 collisions along the segment of Scottsdale Road, between Legacy Boulevard and Thompson Peak Parkway. Of the 18 collisions, there were 14 rear end, 2 sideswipe same direction, 1 angle, and 1 single vehicle collision(s). Of which, 9 were speed too fast for conditions, 5 followed too closely, 2 unsafe lane changes, 1 no improper action, and 1 unknown.

Legacy Boulevard, Scottsdale Road to approximately ¼ mile east

During the three-year period, there were a total of 3 collisions along the segment of Legacy Boulevard, between Scottsdale Road and approximately one-quarter mile east of Scottsdale Road. Of the 3 collisions, there was 1 sideswipe same direction, 1 angle, and 1 single vehicle collision(s). Of which, there was 1 unsafe lane change, 1 no improper action, and 1 unknown.

4. EXISTING CONDITIONS

4.1. EXISTING LAND USE

According to the Maricopa County Assessor's website, the proposed site occupies a portion of the existing parcel 215-05-304. See **Appendix C** for detailed parcel information.

4.2. EXISTING TRAFFIC COUNTS

A local data collection firm, All Traffic Data, was utilized to collect traffic counts. On Wednesday, December 8, 2021, turning movement counts were obtained from 7:00 to 9:00 am and from 4:00 to 6:00 pm at the following locations:

- Scottsdale Road and Legacy Boulevard (2)
- Legacy Boulevard and 73rd Street (4)

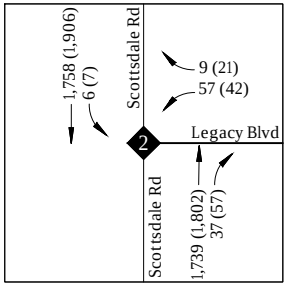
Additionally, on Wednesday, December 8, 2021, bi-directional tube counts for 24-hours in 15-minute intervals were collected along the following roadway segments:

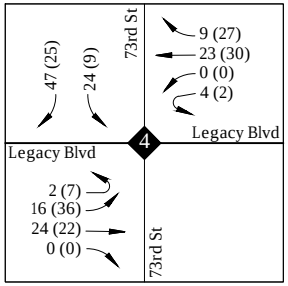
- Scottsdale Road, north of Legacy Boulevard
- Legacy Boulevard, east of Scottsdale Road

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

AM Peak Hour	7:45 am – 8:45 am
PM Peak Hour	4:00 pm – 5:00 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 4** for the existing adjusted AM and PM peak hour weekday traffic volumes.





Legend

AM(PM) Peak Hour Traffic Volumes

X Intersection

FIGURE 4 | EXISTING TRAFFIC VOLUMES

4.3. EXISTING CAPACITY ANALYSIS

The existing conditions capacity analysis was completed for the existing study intersections. The capacity and level of service for the study area intersections were evaluated using the methodology presented in the 6th *Edition of the Highway Capacity Manual (HCM)*. Traffic analysis software, Synchro Version 11, was used to perform the analyses using the signal timing provided by the City of Scottdale. The existing peak hour factor (PHF) was used. However, if the existing PHF was greater than 0.92, the PHF was defaulted to 0.92. See **Appendix E** for the existing signal timing.

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

Table 2 – Level of Service Criteria

Level of Service (LOS)	Control Delay per Vehicle (s/veh)	
	Signalized Intersection	Unsignalized Intersection
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 analysis reveal the following locations with an existing level of service (LOS) E or F:

Scottsdale Road and Legacy Boulevard (2) – Signalized

- WB left AM a peak hour operates at LOS E
- WB right PM peak hour operates at LOS E

The existing AM and PM peak hour level of service and delay for unsignalized intersections are shown in **Table 3** and signalized intersections are shown in **Table 4.**

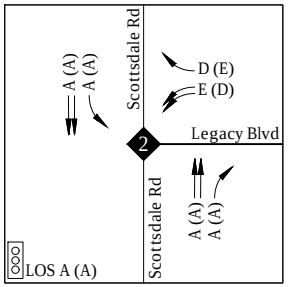
See **Figure 5** for the existing AM and PM peak hour capacity analysis. The detailed capacity analysis sheets can be found in **Appendix F**.

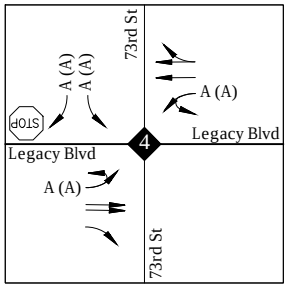
Table 3 – Existing Level of Service and Delay – Unsignalized

Intersection	Existing Conditions			
	AM PEAK		PM PEAK	
Unsignalized Intersections	LOS	DELAY	LOS	DELAY
Legacy Boulevard and 73rd Street (4)				
Eastbound Left	A	7.4	A	7.5
Westbound Left	A	7.6	A	7.6
Southbound Left	A	9.2	A	9.7
Southbound Right	A	8.6	A	8.6

Table 4 – Existing Level of Service and Delay – Signalized

Intersection	Existing Conditions			
	AM PEAK		PM PEAK	
Signalized Intersections	LOS	DELAY	LOS	DELAY
Scottsdale Road and Legacy Boulevard (2)				
Overall Intersection	A	7.0	A	7.2
Westbound Left	E	55.2	D	54.9
Westbound Right	D	54.4	E	55.3
Northbound Through	A	7.8	A	8.0
Northbound Right	A	3.0	A	3.1
Southbound Left	A	7.1	A	7.4
Southbound Through	A	4.6	A	5.0





Legend

AM(PM) Peak Hour Traffic Volumes

X Intersection

Lane Configuration

FIGURE 5 | EXISTING CAPACITY ANALYSIS

5. PROJECTED TRAFFIC

5.1. TRIP GENERATION

The trip generation for the proposed development was calculated utilizing the Institute of Transportation Engineers (ITE) publication entitled *Trip Generation, 11th Edition*. The ITE rates are based on studies that measured the trip generation characteristics for various types of land uses. The rates are expressed in terms of trips per unit of land use type. This publication is considered to be the standard for the transportation engineering profession.

Pass-by Trips

Pass-by trips are intermediate stops on the way from an origin to a primary trip destination without a route diversion. Pass-by trips are attracted from the existing traffic passing the site on an adjacent street or roadway that offers direct access to the generator. These trips are not considered to add new traffic to the adjacent street network and may be reduced from the total external trips generated by the proposed development. Pass-by rates were applied to the Weekday, AM Peak Hour and PM Peak Hour trips generated by the respective land uses. These rates are based on data provided in the *Trip Generation Handbook, 3rd Edition*.

The trip generation for proposed development was calculated utilizing ITE Land Use 945 – Convenience Store/Gas Station. Trip generation calculations are shown in **Table 5** below. Detailed trip generation calculations are provided in **Appendix G**.

Table 5 – Trip Generation – Proposed Development

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Convenience Store/Gas Station	945	16	Fueling Positions	4,114	433	217	216	364	182	182
			Pass-By	3,082	337	169	168	262	131	131
			Total	**1,032**	**96**	**48**	**48**	**102**	**51**	**51**

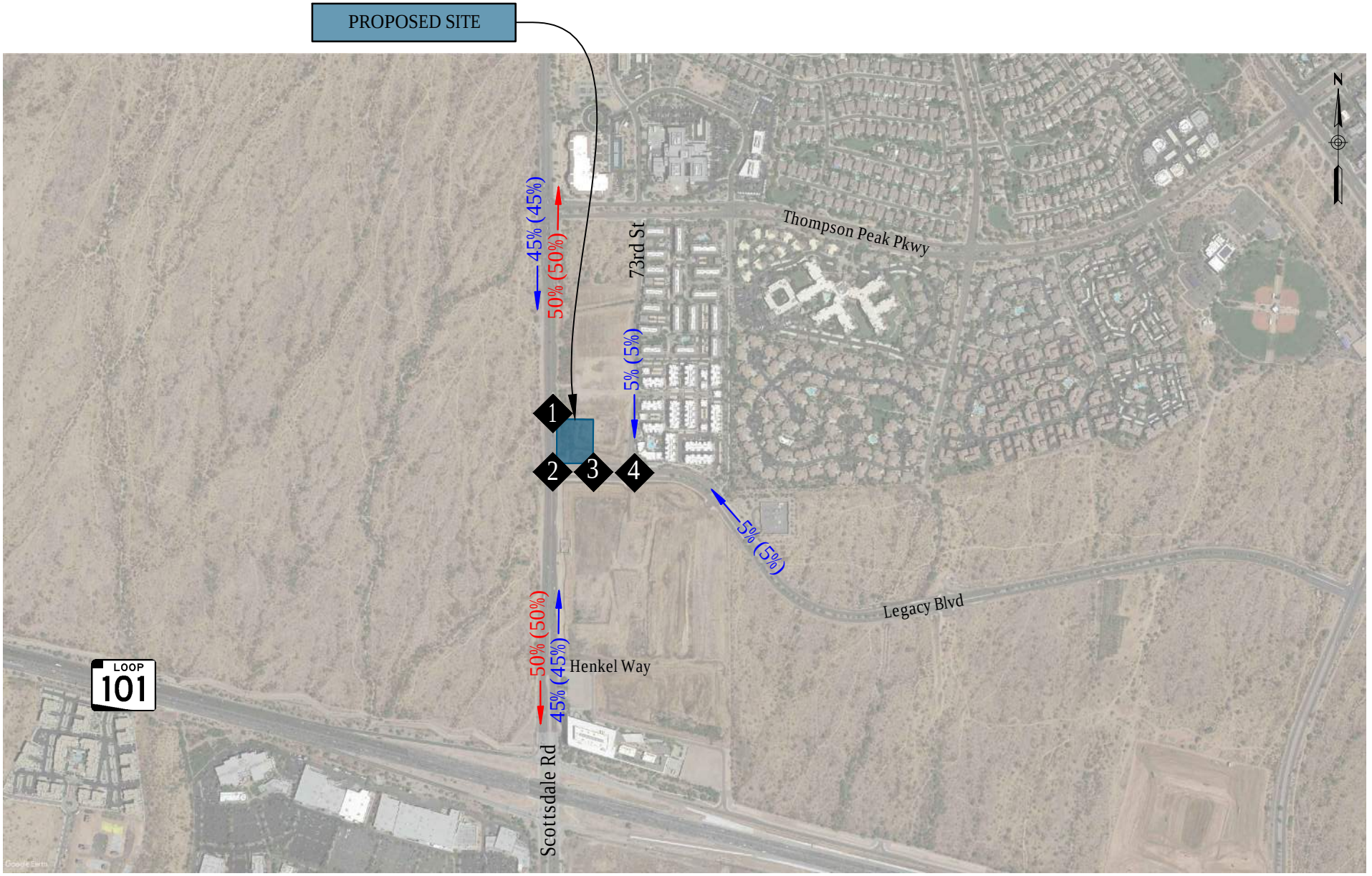
The proposed development is anticipated to generate 1,032 weekday trips with 96 occurring during the AM peak hour and 102 trips during the PM peak hour.

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 QuikTrip development is based on the distribution of the existing traffic. This project is being developed in a primarily developed area, so it can be assumed that the existing trip distribution will remain. The trip distribution is shown in **Figure 6.**

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 7**. Additionally, the pass-by traffic volumes are shown in **Figure 8**.

For the purposes of this report all of the site generated traffic was directed to Scottsdale Road and Driveway A (1) and Legacy Boulevard and Driveway B (3). There are discussions for a cross access agreement with the property to the east of the proposed QuikTrip development to allow access to 73rd Street.



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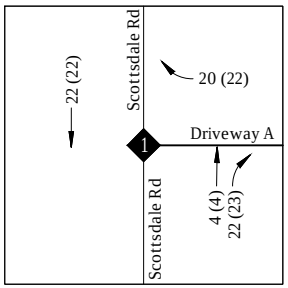
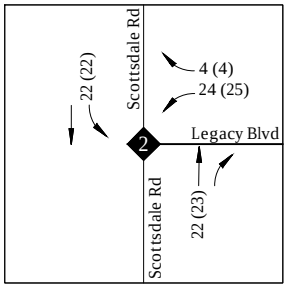
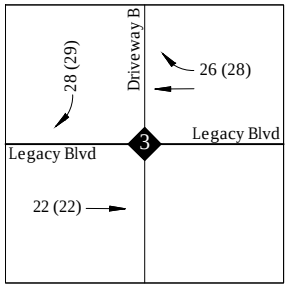
AM(PM) Inbound Trip Distribution Percentages

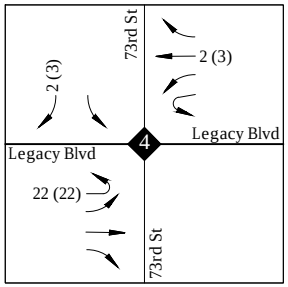
AM(PM) Outbound Trip Distribution Percentages

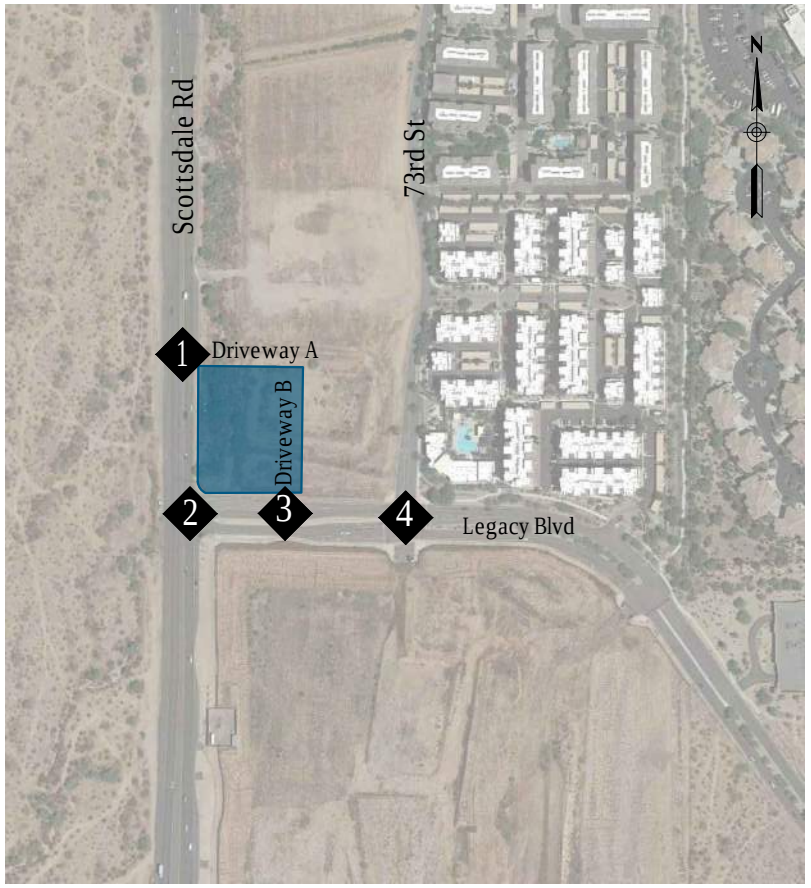
FIGURE 6 | TRIP DISTRIBUTION









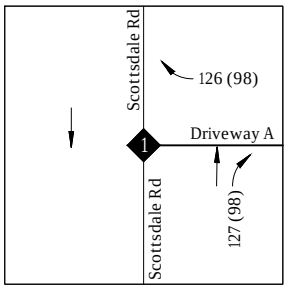


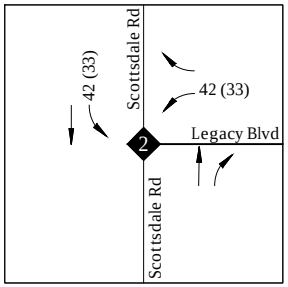
Legend

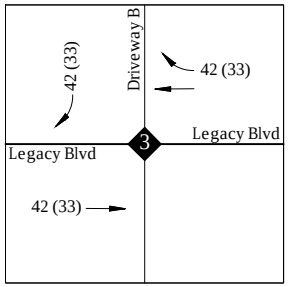
AM(PM) Peak Hour Traffic Volumes

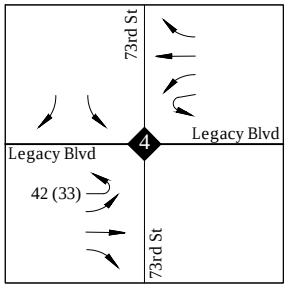
X Intersection

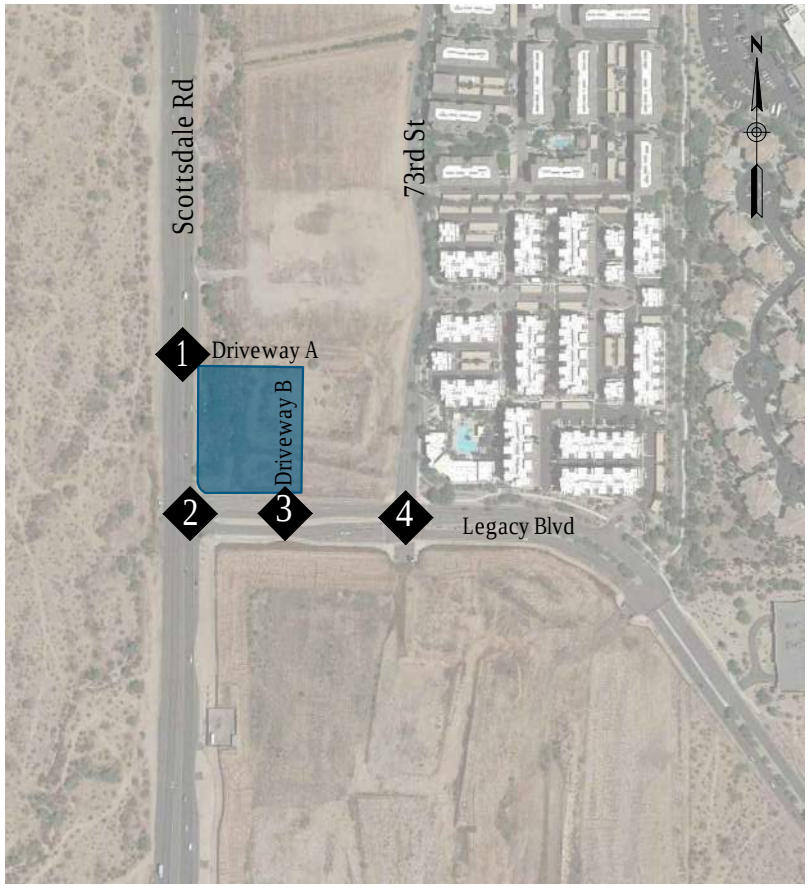
FIGURE 7 | SITE TRAFFIC VOLUMES











Legend

AM(PM) Peak Hour Traffic Volumes

X Intersection

FIGURE 8 | PASS-BY TRAFFIC VOLUMES

6. FUTURE CONDITIONS (YEAR 2023)

The proposed QuikTrip is anticipated to be constructed and ready to open in the year 2023. This section analyzes the effects the proposed development will have on the surrounding roadway network during the opening year of 2023.

6.1. YEAR 2023 BACKGROUND TRAFFIC VOLUMES

According to the 2019 Maricopa Associations of Governments (MAG) socioeconomic projections in the City of Scottsdale within the study area (RAZ 230), it is estimated that in the year 2018 the population was approximately 32,232. MAG estimates that the 2030 population of the surrounding area to be 38,882. This results in an approximate annual growth rate of 1.38%.

As a conservative approach, a 2.0% annual growth rate was utilized. See **Appendix H** for the MAG socioeconomic projections. See **Figure 9** for the year 2023 background traffic volumes**.**

6.2. YEAR 2023 BUILD TRAFFIC VOLUMES

When the site traffic (**Figure 7**) and pass-by traffic (**Figure 8**) are added to the year 2023 background traffic (**Figure 9**), the result is the 2023 build traffic volumes. This represents the traffic volumes with the build out of the proposed development. The year 2023 build traffic volumes are shown in **Figure 10**.

6.3. YEAR 2023 NO BUILD CAPACITY ANALYSIS

The capacity and level of service for the study area intersections were evaluated for the 2023 no build scenario. The PHF was assumed to be 0.92.

The year 2023 no build AM and PM peak hour level of service and delay for unsignalized intersections are shown in **Table 6** and signalized intersections are shown in **Table 7.** The detailed capacity analysis sheets can be found in **Appendix I**.

The results of the year 2023 no build capacity analysis are shown in **Figure 11.** The results of the capacity analysis reveal the following locations with a level of service (LOS) E or F:

Scottsdale Road and Legacy Boulevard (2) – Signalized

- WB left AM a peak hour operates at LOS E
- WB right PM peak hour operates at LOS E

6.4. YEAR 2023 BUILD CAPACITY ANALYSIS

The capacity and level of service for the study area intersections were evaluated for the year 2023 build traffic volumes. See **Figure 10**. The PHF was assumed to be 0.92.

The year 2023 build AM and PM peak hour level of service and delay for unsignalized intersections are shown in **Table 6** and signalized intersections are shown in **Table 7.** The detailed capacity analysis sheets can be found in **Appendix J**.

The results of the year 2023 build capacity analysis are shown in **Figure 12**. All movements operate at a LOS D or better or are maintained at the year 2023 no build level of service, with the exception of:

Scottsdale Road and Legacy Boulevard (2) – Signalized

- WB left PM a peak hour operates at LOS E

The results of the year 2023 no build capacity analysis indicate the westbound left turn at Scottsdale Road and Legacy Boulevard (2) operates at a LOS D with a delay of 54.8 seconds in the PM peak hour. Under the build conditions, the westbound left operates at a LOS E with a delay of 56.2 seconds in the PM peak hour. This represents an increase of 1.4 seconds (2.5%).

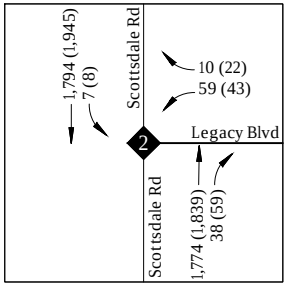
Also, it should be noted that the overall intersection operates at a LOS A.

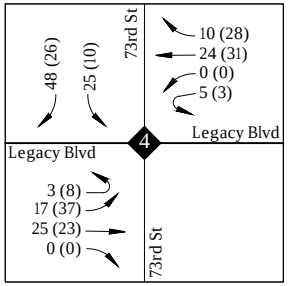
Table 6 – Year 2023 Level of Service and Delay – Unsignalized

Intersection	2023 No Build Conditions				2023 Build Conditions			
	AM PEAK		PM PEAK		AM PEAK		PM PEAK	
Unsignalized Intersections	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY
Scottsdale Road and Driveway A (1)								
Westbound Right	-	-	-	-	C	20.5	C	20.4
Legacy Boulevard and Driveway B (3)								
Southbound Right	-	-	-	-	A	9.0	A	8.9
Legacy Boulevard and 73rd Street (4)								
Eastbound Left	A	7.4	A	7.5	A	7.9	A	7.9
Westbound Left	A	7.6	A	7.6	A	7.6	A	7.6
Southbound Left	A	9.3	A	9.7	B	10.6	B	10.9
Southbound Right	A	8.6	A	8.6	A	8.6	A	8.6

Table 7 – Year 2023 Level of Service and Delay – Signalized

Intersection	2023 No Build Conditions				2023 Build Conditions			
	AM PEAK		PM PEAK		AM PEAK		PM PEAK	
Signalized Intersections	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY
Scottsdale Road and Legacy Boulevard (2)								
Overall Intersection	A	7.1	A	7.5	A	9.4	A	9.7
Westbound Left	E	55.2	D	54.8	E	56.9	E	56.2
Westbound Right	D	54.4	E	55.3	D	54.1	D	54.9
Northbound Through	A	7.9	A	8.4	B	10.4	B	11.0
Northbound Right	A	3.1	A	3.1	A	4.0	A	4.1
Southbound Left	A	7.1	A	8.0	B	12.7	B	14.1
Southbound Through	A	4.6	A	5.3	A	4.6	A	5.4



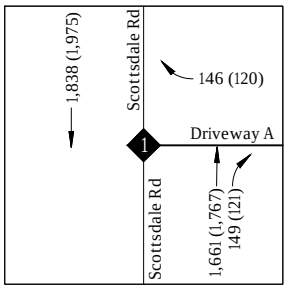


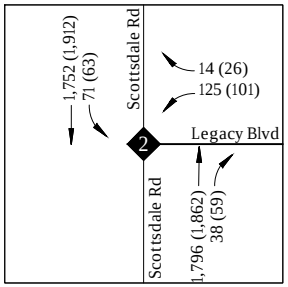
Legend

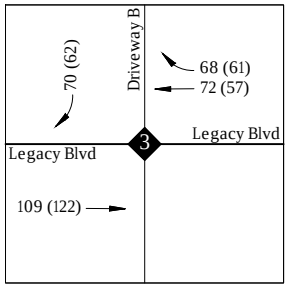
AM(PM) Peak Hour Traffic Volumes

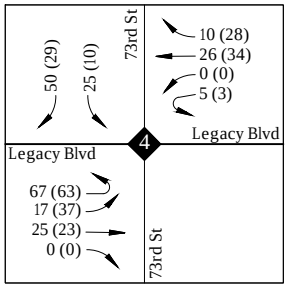
X Intersection

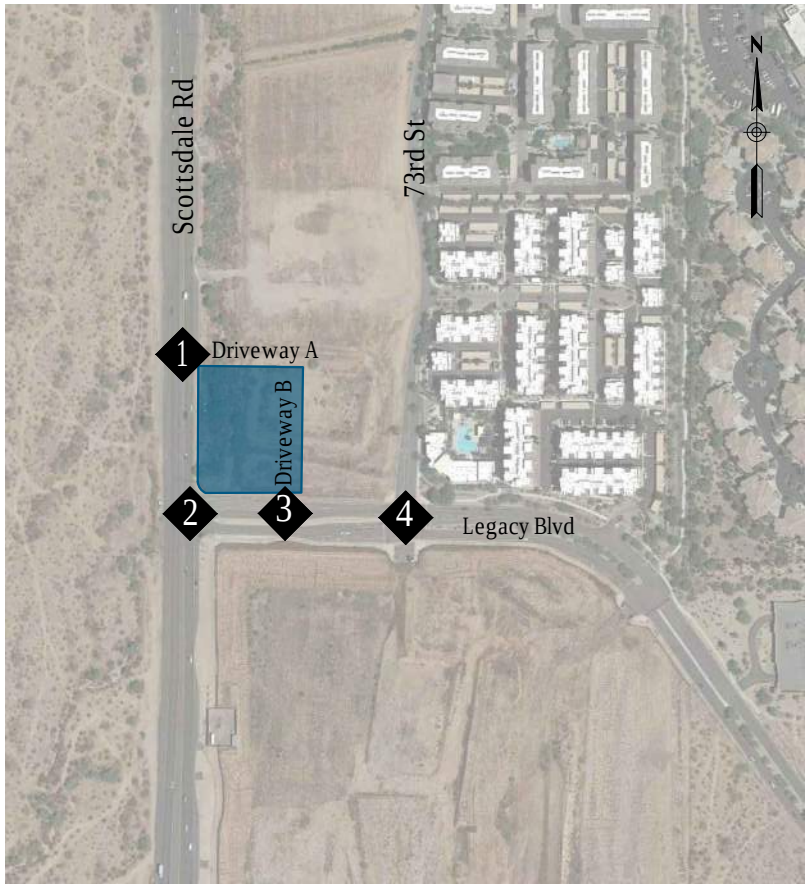
FIGURE 9 | YEAR 2023 NO BUILD TRAFFIC VOLUMES









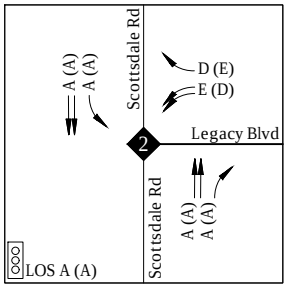


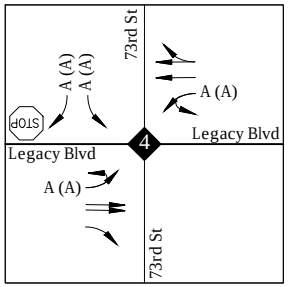
Legend

AM(PM) Peak Hour Traffic Volumes

X Intersection

FIGURE 10 | YEAR 2023 BUILD TRAFFIC VOLUMES





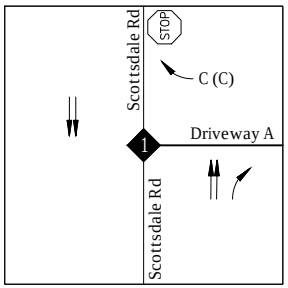
Legend

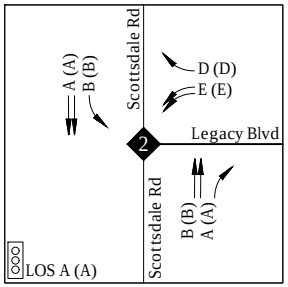
AM(PM) Peak Hour Traffic Volumes

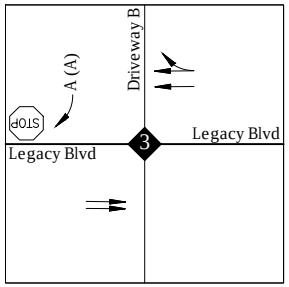
X Intersection

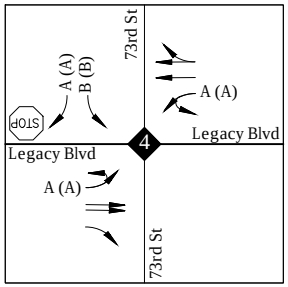
Lane Configuration

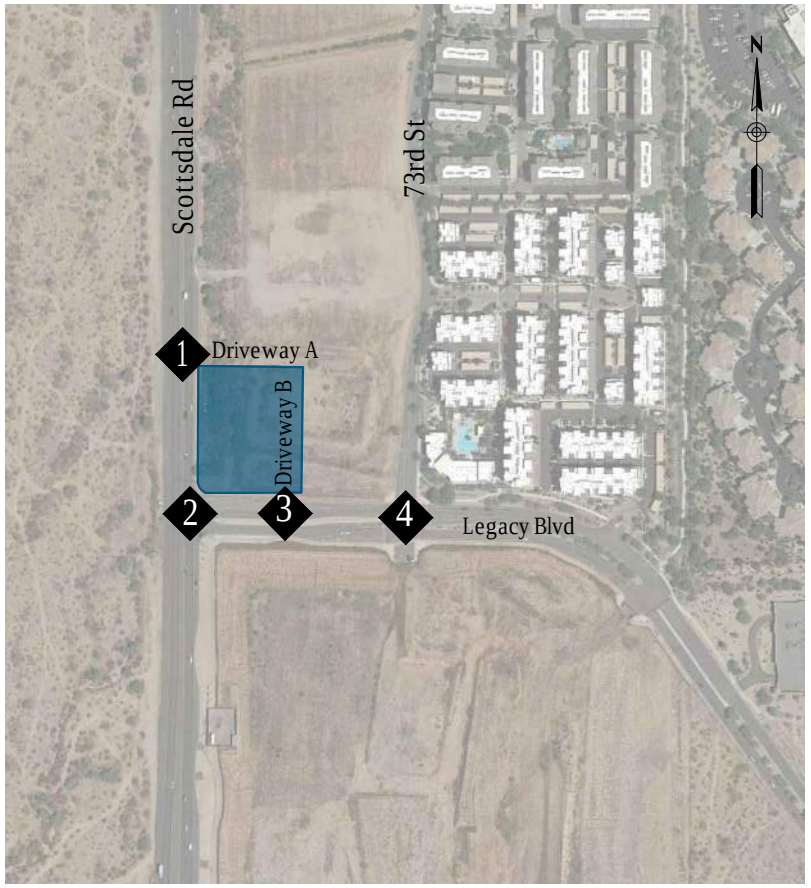
FIGURE 11 | YEAR 2023 NO BUILD CAPACITY ANALYSIS











Legend

AM(PM) Peak Hour Traffic Volumes

X Intersection

Lane Configuration

FIGURE 12 | YEAR 2023 BUILD CAPACITY ANALYSIS

7. TURN LANE ANALYSIS

7.1. RIGHT TURN LANES

Turn lanes or deceleration lanes, allow vehicles exiting a roadway to slow to a reduced speed to execute a turn without impeding the main flow of traffic.

The City of Scottsdale 2018 *Design Standards & Policies Manual* Section 5.3.206 deceleration lane criteria is analyzed below for the study intersections where traffic volumes were available.

Right Turn Lane
Deceleration lanes are required at all new driveways on major arterials and at new commercial/retail driveways on minor arterials. To determine the need for a deceleration lane on streets classified as a minor arterial or collector, use the following criteria:

- At least 5,000 vehicle per day are expected to be using the street.
- The roadway's 85th percentile speed limit is at least 35 mph.
- At least 30 vehicles will make right-turns into the driveway during a 1-hour period.

Using the above criteria, a right turn lane would be required at the following study intersection:

- Scottsdale Road and Driveway A (1) – northbound right turn lane.
  The proposed northbound right turn lane will be constructed by others.

Although the study intersection of Legacy Boulevard and Driveway B (3) does not meet the above criteria, because the posted speed limit along Legacy Boulevard is only 30 mph, at the request of the City of Scottsdale, a westbound right turn lane will be provided. Due to existing geometric constraints, the proposed right turn lane will provide 75 feet of storage with a 56-foot taper.

7.2. QUEUE ANALYSIS

The 95th percentile queue reported by Synchro was used to calculate the required storage length for each turn lane. See **Table 8** for the turn bay storage for each required turn lane for year 2023 with the built out of the proposed QuikTrip.

Table 8 – Queue Analysis

Intersection	Movement	Existing Storage	Existing/Proposed Storage Length	95th Percentile		Storage Length
				AM Peak Hour	PM Peak Hour	
Scottsdale Road and Driveway A (1)	WB Right	-	100'	48'	40'	Sufficient
	NB RIght	-	100'	*	*	Sufficient
Scottsdale Road and Legacy Boulevard (2)	WB Left	Dual Turn Lanes	450'	84'	72'	Sufficient
	WB Right	Turn Lane	130'	21'	29'	Sufficient
	NB Right	Turn Lane	380'	17'	15'	Sufficient
	SB Left	Turn Lane	280'	42'	36'	Sufficient
Legacy Boulevard and Driveway B (3)	WB Right	-	75'	*	*	Sufficient
	SB Right	-	50'	8'	5'	Sufficient
Legacy Boulevard and 73rd Street (4)	EB Left	Turn Lane	110'	5'	7.5'	Sufficient
	WB Left	Turn Lane	200'	0'	0'	Sufficient
	SB Left	Turn Lane	150'	2.5'	2.5'	Sufficient
	SB Left	Turn Lane	150'	5'	2.5'	Sufficient

*Free-flowing right turning movements area not anticipated to queue.

8. ACCESS AND CIRCULATION ANALYSIS

Location and access ingress and egress at gas stations are critical.

The proposed QuikTrip located on the northeast corner of Scottsdale Road and Legacy Boulevard (2) proposed right-in and right-out accesses on both roadway frontages, one along Scottsdale Road (Driveway A), and one along Legacy Boulevard (Driveway B). Both of these accesses will be limited to right-in/right-out movements due to its proximity to the intersection of Scottdale Road and Legacy Boulevard (2) along with the presence of raised medians.

A right-turn deceleration lane meets the City of Scottsdale criteria and is recommended for installation along Scottsdale Road at Driveway A. Although, Driveway B's posted speed limit and daily through volumes do not meet the right turn lane criteria, at the request of the City of Scottsdale a westbound right turn lane will be recommended for installation.

The following specifically addresses the operation and location of the Legacy Boulevard and Driveway B (3):

- It is located approximately 350 feet east of Scottsdale Road and will be limited to right-in and right-out movements only. A raised median is constructed on Legacy Boulevard which further enforces the restricted and allowed movements into and out of this access.

- The City of Scottsdale encourages shared driveways, to limit the number of accesses and conflicts. Driveway B will be a shared access with future developments to the east and north.

- The location, movements (right-in/right-out), and traffic control (stop-controlled) at Driveway B is consistent with and was included in the Traffic Impact and Mitigation Analysis (TI&MA) for the One Scottsdale development, dated May 2016. This 2016 TI&MA was accepted by the City of Scottsdale Transportation Department.

- Driveway B will be located just east of the exclusive left turn storage lanes for the signalized intersection of Scottsdale Road and Legacy Boulevard (2).

- An analysis was conducted to determine the 95th percentile queues for the exclusive right and left turn lanes for the signalized intersection of Scottsdale Road and Legacy Boulevard (2).

    - The 95th percentile queue for the westbound dual left turn lanes is 89 feet and 77 feet for the AM and PM peak hours, respectively.

- The 95th percentile queue for the westbound right turn lane is 22 feet and 31 feet for the AM and PM peak hours, respectively.

- Located approximately 350 feet east of the intersection of Scottsdale Road and Legacy Boulevard (2), Driveway B will not be blocked by queuing from the signalized intersection.

- Driveway B operates at acceptable levels of service during the AM and PM peak hours in year 2023 with the build out of the QuikTrip.

- For the purposes of circulating passenger vehicles and refueling vehicles (semi-trucks) around the proposed site, the driveway along Legacy Boulevard allows for egress and access to southbound Scottsdale Road and access to SR 101L.

- The design of this site is similar to other locations throughout the City of Scottsdale and other cities in the Phoenix Metro area. The following are a few examples:

  - Scottsdale Road and Bell Road/Frank Lloyd Wright – a right-in/right-out driveway is located approximately 350 feet west of the intersection of Scottsdale Road and Bell Road/Frank Lloyd Wright Boulevard.

  - Scottsdale and Butherus Drive – a right-in/right-out driveway is located approximately 300 feet east of the intersection of Scottsdale Road and Butherus Drive.

  - Frank Lloyd Wright and SR 101L – a right-in/right-out driveway is located approximately 300 feet west of the intersection of Frank Lloyd Wright Boulevard and SR 101L.

9. RECOMMENDATIONS & CONCLUSIONS

The proposed QuikTrip will be located on the northeast corner of Scottsdale Road and Legacy Boulevard in the City of Scottsdale, Arizona, and will include a 5,312 square foot convenience store and 16 vehicle fueling positions.

The proposed development is anticipated to generate 1,032 weekday trips with 96 occurring during the AM peak hour and 102 trips during the PM peak hour.

Recommendations

The recommendations with the build out of the QuikTrip include:

- **Scottsdale Road and Driveway A (1)**
  Buildout of a right-in and right-out access point, 450 feet north of Legacy Boulevard. This will be a shared access driveway. A northbound right turn lane will be constructed at this driveway by others.

- **Legacy Boulevard and Driveway B (3)**
  Buildout of a right-in and right-out access point, 350 feet east of Scottsdale Road. This will be a shared access driveway. A westbound right-turn lane will be constructed at this driveway location.

  The location, movements (right-in/right-out), and traffic control (stop-controlled) at Driveway B is consistent and was included in the Traffic Impact and Mitigation Analysis (TI&MA) for the One Scottsdale development, dated May 2016. This 2016 TI&MA was accepted by the City of Scottsdale Transportation Department

Appendix A – Proposed Site Plan

PROJECT CONTACT LIST:

ENGINEER OF RECORD
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PHOENIX, AZ, 85020
TEL: (602) 944–5500
GARRETT.FRAME@KIMLEY–HORN.COM

QT REAL ESTATE PROJECT MANAGER
QUIKTRIP CORPORATION
DANIEL CHAMBERS
1116 E BROADWAY RD
TEMPE, AZ 85282
TEL: (480) 330–9127
(480) 446–6321
DANIEL.CHAMBERS@QUIKTRIP.COM

SURVEYOR OF RECORD
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JAMES G. SPRING, PLS
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MESA, AZ 85206
TEL: (480) 218–8831

QT CIVIL PROJECT MANAGER
QUIKTRIP CORPORATION
ASHLEY GOODRICH
4705 SOUTH 129TH EAST AVE.
TULSA, OK 74134
TEL: (918) 615–7273
AGOODRIC@QUIKTRIP.COM

BASIS OF BEARING:

PER ATWELL LLC., THE BASIS OF BEARING IS THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 26, TOWNSHIP 4 NORTH, RANGE 4 EAST, G.&.S.R.M., SHOWN HEREON AS BEARING BEING S00°01'45"E A DISTANCE OF 2639.93'.

LEGAL DESCRIPTION

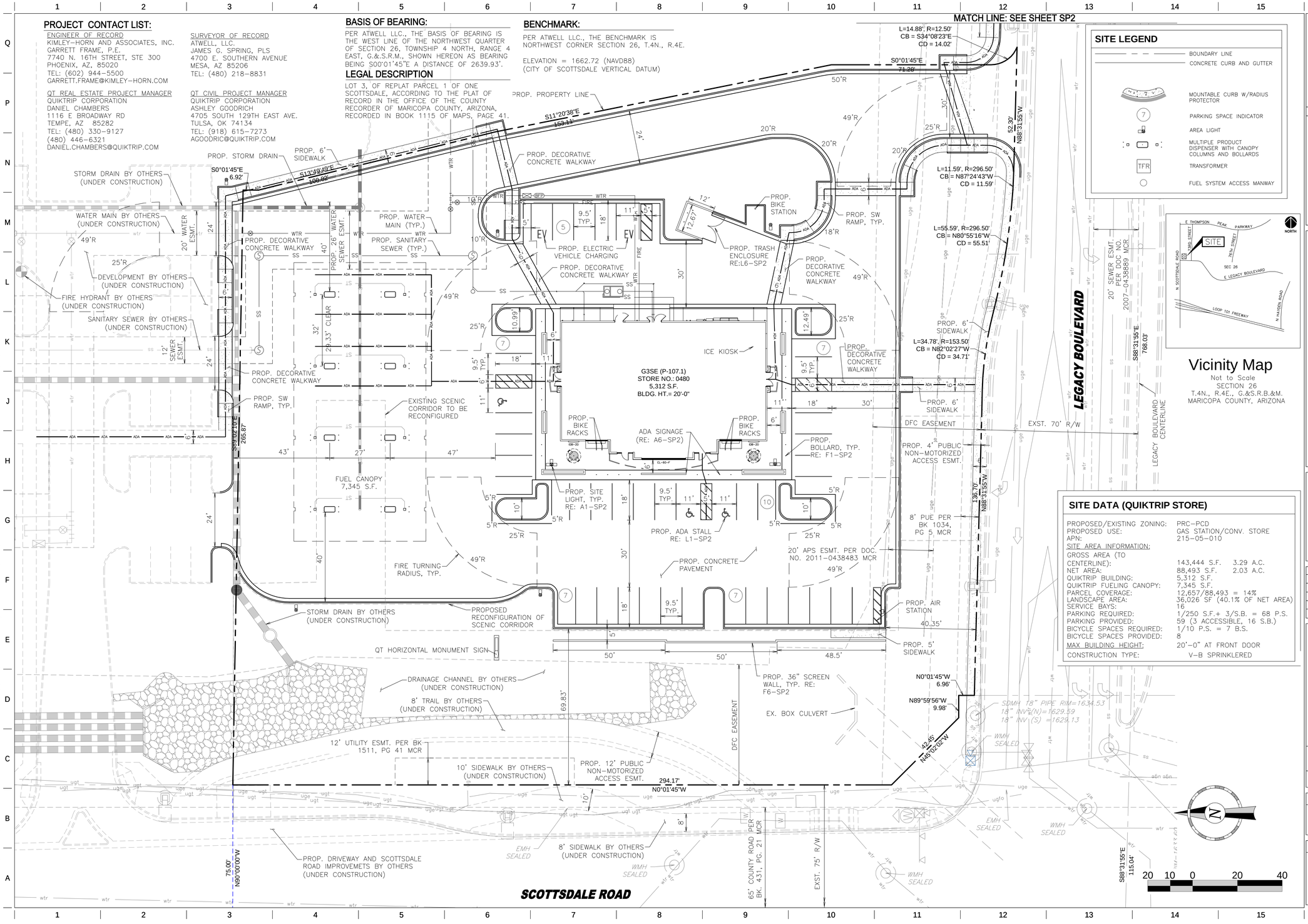
LOT 3, OF REPLAT PARCEL 1 OF ONE SCOTTSDALE, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED IN BOOK 1115 OF MAPS, PAGE 41.

BENCHMARK:

PER ATWELL LLC., THE BENCHMARK IS NORTHWEST CORNER SECTION 26, T.4N., R.4E.

ELEVATION = 1662.72 (NAVD88)
(CITY OF SCOTTSDALE VERTICAL DATUM)

MATCH LINE: SEE SHEET SP2



SITE LEGEND

- BOUNDARY LINE
- CONCRETE CURB AND GUTTER
- MOUNTABLE CURB W/RADIUS PROTECTOR
- PARKING SPACE INDICATOR
- AREA LIGHT
- MULTIPLE PRODUCT DISPENSER WITH CANOPY COLUMNS AND BOLLARDS
- TFR TRANSFORMER
- FUEL SYSTEM ACCESS MANWAY

Vicinity Map

Not to Scale
SECTION 26
T.4N., R.4E., G.&S.R.B.&M.
MARICOPA COUNTY, ARIZONA

SITE DATA (QUIKTRIP STORE)

PROPOSED/EXISTING ZONING:	PRC–PCD
PROPOSED USE:	GAS STATION/CONV. STORE
APN:	215–05–010
SITE AREA INFORMATION:	
GROSS AREA (TO CENTERLINE):	143,444 S.F. 3.29 A.C.
NET AREA:	88,493 S.F. 2.03 A.C.
QUIKTRIP BUILDING:	5,312 S.F.
QUIKTRIP FUELING CANOPY:	7,345 S.F.
PARCEL COVERAGE:	12,657/88,493 = 14%
LANDSCAPE AREA:	36,026 SF (40.1% OF NET AREA)
SERVICE BAYS:	16
PARKING REQUIRED:	1/250 S.F.+ 3/S.B. = 68 P.S.
PARKING PROVIDED:	59 (3 ACCESSIBLE, 16 S.B.)
BICYCLE SPACES REQUIRED:	1/10 P.S. = 7 B.S.
BICYCLE SPACES PROVIDED:	8
MAX BUILDING HEIGHT:	20'–0" AT FRONT DOOR
CONSTRUCTION TYPE:	V–B SPRINKLERED

20 10 0 20 40

PROJECT NO.:291443018

Kimley»Horn
© 2020 KIMLEY–HORN AND ASSOCIATES, INC.
7740 NORTH 16TH STREET, SUITE 300
PHOENIX, ARIZONA 85020 (602) 944–5500

QuikTrip No. 0480

NEC SCOTTSDALE ROAD & LEGACY BOULEVARD
SCOTTSDALE, AZ

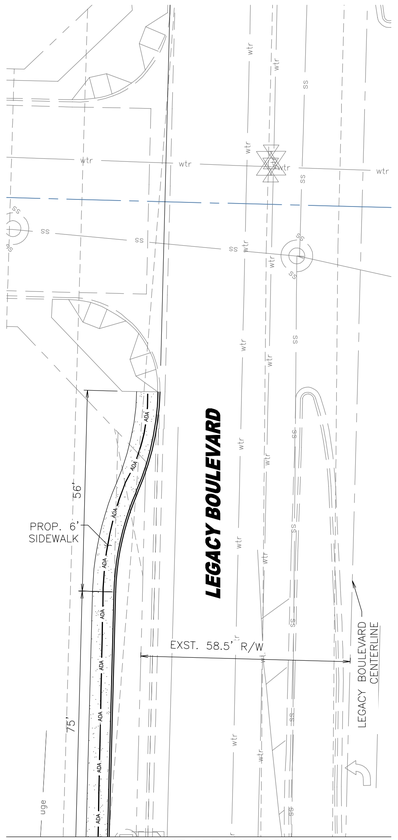
PROTOTYPE:	P-108 (11/01/21)
DIVISION:	
VERSION:	001
DESIGNED BY:	
DRAWN BY:	
REVIEWED BY:	

REV	DATE	DESCRIPTION
		ORIGINAL ISSUE DATE: 06/30/2022

SHEET TITLE:
PRELIMINARY SITE PLAN

SHEET NUMBER:
SP1

FILE LOCATION:K:\PHX_Civil\291443018 – QT0480 – Scottsdale Rd & Legacy\CADD\05–0480 Civil.dwg TAB NAME:Site (Prelim) USER:Garrett.Frame SAVED:6/29/2022 5:59 PM PLOTTED:6/30/2022 5:59 PM



MATCH LINE: SEE SHEET SP1

SITE LEGEND

	BOUNDARY LINE
	CONCRETE CURB AND GUTTER
	MOUNTABLE CURB W/RADIUS PROTECTOR
7	PARKING SPACE INDICATOR
	AREA LIGHT
	MULTIPLE PRODUCT DISPENSER WITH CANOPY COLUMNS AND BOLLARDS
TFR	TRANSFORMER
	FUEL SYSTEM ACCESS MANWAY

20 10 0 20 40

PROJECT NO.:291443018

Kimley»Horn

7740 NORTH 16TH STREET, SUITE 300
PHOENIX, ARIZONA 85020 (602) 944-5500

QuikTrip No. 0480

NEC SCOTTSDALE ROAD & LEGACY BOULEVARD
SCOTTSDALE, AZ

PROTOTYPE:	P-108 (11/01/21)
DIVISION:	
VERSION:	001
DESIGNED BY:	
DRAWN BY:	
REVIEWED BY:	

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE: 06/30/2022

SHEET TITLE:

PRELIMINARY SITE PLAN

SHEET NUMBER:

SP2

Appendix B – Collision History

CITY OF SCOTTSDALE '17 -'18 COLLISION SUMMARY

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST FROM	INJ. SEV. #1	INJ. SEV. #2	PHYS. COND. #1	PHYS. COND. #2	VIOLATION #1	VIOLATION #2	ACTION #1	ACTION #2	TRAV. DIR. #1	TRAV. DIR. #2	MANNER OF COLLISION	COMMENTS
1806540	180323	0857	SCOTTSDALE	RD	HENKEL	WY	AT		1	1	0	0	1	1	1	4	NB	SB	2	
1807400	180402	2052	SCOTTSDALE	RD	HENKEL	WY	N	50	1	1	0	0	12	1	1	1	NB	NB	2	
1805042	180305	1558	SCOTTSDALE	RD	HENKEL	WY	S	217	1	1	0	0	2	1	1	3	NB	NB	4	
1805533	180311	1231	SCOTTSDALE	RD	LEGACY	BL	AT		1	1	0	0	2	1	1	3	SB	SB	4	
1800677	180110	1040	SCOTTSDALE	RD	LEGACY	BL	AT		1	1	0	0	2	12	2	2	SB	SB	4	
1814033	180625	1214	SCOTTSDALE	RD	LEGACY	BL	N	100	1	1	0	0	4	1	2	3	SB	SB	4	
1811631	180525	1534	SCOTTSDALE	RD	LEGACY	BL	N	120	1	1	0	0	2	1	1	2	NB	NB	4	
1820211	180913	0607	SCOTTSDALE	RD	LEGACY	BL	N	200	1	1	0	0	12	1	8	1	NB	NB	6	
1820678	180920	1057	SCOTTSDALE	RD	LEGACY	BL	N	236	3	2	0	0	2	1	1	3	SB	SB	4	
1801688	180123	1106	SCOTTSDALE	RD	LEGACY	BL	N	300	1	1	0	0	2	1	1	2	SB	SB	4	
1813656	180620	1422	SCOTTSDALE	RD	LEGACY	BL	S	363	1	2	0	0	2	1	1	3	SB	SB	4	MULTI VEH 5
1812138	180531	1816	SCOTTSDALE	RD	LEGACY	BL	E	500	1	99	0	99	1	12	1	8	NB	NB	6	HIT AND RUN
1819086	180829	1734	SCOTTSDALE	RD	LEGACY	BL	N	800	1	1	0	0	4	1	1	2	SB	SB	4	MULTI VEH 3
1803892	180218	1603	SCOTTSDALE	RD	LEGACY	BL	E	1350	3		99		13		9		EB		1	HITA ND RUN
1811629	180525	1511	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT		2		97		7		4		SB		1	
1808491	180416	0904	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT		3	3	0	0	20	1	4	1	EB	WB	3	
1810005	180505	1536	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT		1	1	0	0	2	1	1	3	NB	NB	4	
1813306	180615	1911	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT		1	1	0	0	99	99	4	4	WB	WB	6	
1820019	180910	1311	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT		1	1	99	0	99	99	4	1	SB	NB	2	
1806513	180322	2204	SCOTTSDALE	RD	THOMPSON PEAK	PY	N	80	1	1	4	0	97	1	10	3	SB	SB	4	DUI
1814276	180628	1225	SCOTTSDALE	RD	THOMPSON PEAK	PY	S	100	1	2	2	0	4	1	2	3	NB	NB	4	
1804007	180220	1300	SCOTTSDALE	RD	THOMPSON PEAK	PY	N	138	1	1	0	0	97	1	1	1	NB	NB	4	
1810202	180508	0805	SCOTTSDALE	RD	THOMPSON PEAK	PY	S	200	1	1	0	0	2	1	2	3	NB	NB	4	

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST FROM	INJ. SEV. #1	INJ. SEV. #2	PHYS. COND. #1	PHYS. COND. #2	VIOLATION #1	VIOLATION #2	ACTION #1	ACTION #2	TRAV. DIR. #1	TRAV. DIR. #2	MANNER OF COLLISION	COMMENTS
1825625	181127	1751	SCOTTSDALE	RD	THOMPSON PEAK	PY	S	800	1	1	0	0	2	1	1	3	NB	NB	4	MULTI VEH 3

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 **24**

CITY OF SCOTTSDALE '19 -'20 COLLISION SUMMARY

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST	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
2009104	200526	1420	SCOTTSDALE	RD	HENKEL	WY	AT				0	0	4	1	1	3	SB	SB	4	
2001966	200127	1055	SCOTTSDALE	RD	HENKEL	WY	AT				0		13	0	1		SB		1	
1922545	191028	1604	SCOTTSDALE	RD	HENKEL	WY	N	100			0	0	0	1	1	3	SB	SB	4	
1906065	190319	1054	SCOTTSDALE	RD	HENKEL	WY	S	200			0	0	4	1	1	3	SB	SB	4	
2018460	201028	1841	SCOTTSDALE	RD	HENKEL	WY	N	450			99	0	2	1	1	1	SB	SB	6	
2011650	200709	1049	SCOTTSDALE	RD	LEGACY	BL	AT				0	0	12	1	8	1	NB	NB	6	
1909566	190503	1610	SCOTTSDALE	RD	LEGACY	BL	AT				0	0	2	1	1	3	NB	NB	4	
1909526	190503	0807	SCOTTSDALE	RD	LEGACY	BL	AT				0	0	2	1	1	1	SB	SB	4	
1913924	190630	1747	SCOTTSDALE	RD	LEGACY	BL	AT				99	0	12	1	1	1	NB	NB	6	
1903164	190209	1326	SCOTTSDALE	RD	LEGACY	BL	AT				0	0	2	1	1	2	NB	NB	4	
2004694	200303	1112	SCOTTSDALE	RD	LEGACY	BL	AT				0	0	4	1	1	2	NB	NB	4	
1900437	190107	1607	SCOTTSDALE	RD	LEGACY	BL	AT		1	1	0	0	4	1	1	2	SB	SB	4	MULTI VEH 3
2017878	201020	1115	SCOTTSDALE	RD	LEGACY	BL	AT				0	0	20	1	5	1	WB	NB	2	
1906383	190323	1633	SCOTTSDALE	RD	LEGACY	BL	AT				0	0	2	1	1	3	SB	SB	4	
1913298	190622	0857	SCOTTSDALE	RD	LEGACY	BL	N	162			0	0	2	1	1	3	SB	SB	4	
2000785	200111	1823	SCOTTSDALE	RD	LEGACY	BL	N	200			99	0	99	1	8	1	NB	NB	2	
1916036	190731	1512	SCOTTSDALE	RD	LEGACY	BL	N	200			0		1	0	1		NB		1	
1900231	190104	1645	SCOTTSDALE	RD	LEGACY	BL	N	300	1	1	0	0	4	1	1	3	NB	NB	4	
1925424	191207	1730	SCOTTSDALE	RD	LEGACY	BL	N	300			0	0	4	1	1	3	SB	SB	4	
1913586	190626	1007	SCOTTSDALE	RD	LEGACY	BL	S	300			0	0	4	1	1	3	NB	NB	4	
1913558	190625	1805	SCOTTSDALE	RD	LEGACY	BL	E	500			0	99	1	99	14	99	99	99	2	
1906915	190330	1533	SCOTTSDALE	RD	LEGACY	BL	N	500			0	0	2	1	1	1	SB	SB	4	
2019971	201121	1415	SCOTTSDALE	RD	LEGACY	BL	S	685			0	0	2	1	1	3	NB	NB	4	
1906381	190325	1643	SCOTTSDALE	RD	LEGACY	BL	N	800			0	0	2	1	1	3	SB	SB	4	

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST FROM	INJ. SEV. #1	INJ. SEV. #2	PHYS. COND. #1	PHYS. COND. #2	VIOLATION #1	VIOLATION #2	ACTION #1	ACTION #2	TRAV. DIR. #1	TRAV. DIR. #2	MANNER OF COLLISION	COMMENTS
1911162	190524	1959	SCOTTSDALE	RD	LEGACY	BL	E	2198			4		3	0	1		WB		1	
2015822	200918	2148	SCOTTSDALE	RD	LEGACY	BL	E	15000			1		3	0	9		WB		1	
1914034	190702	1337	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0	0	99	99	1	4	WB	SB	2	
1916970	190813	1527	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0	0	4	1	4	4	WB	WB	4	
1902521	190202	0307	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				99		2	0	5		NB		1	
2005554	200314	2118	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0		1	0	1		NB		1	
1901707	190123	1846	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0	0	2	1	1	1	NB	NB	4	
1905047	190306	1120	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0	0	12	1	8	1	SB	SB	6	
2007237	200422	0638	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0	0	2	1	1	6	NB	NB	4	
1906535	190325	1842	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0	0	99	99	4	1	SB	NB	2	
1919909	190922	1941	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0	0	1	1	1	1	NB	NB	6	
1925737	191212	0650	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0	0	2	1	1	3	NB	NB	4	
1926206	191218	1028	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				99	0	97	97	10	14	SB	NB	4	
1924149	191119	0757	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0	0	2	1	1	1	NB	NB	4	
2008976	200524	1812	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				99	0	4	1	1	1	WB	WB	4	
2008305	200513	0941	SCOTTSDALE	RD	THOMPSON PEAK	PY	AT				0	0	2	1	1	3	WB	WB	4	
2009370	200530	1457	SCOTTSDALE	RD	THOMPSON PEAK	PY	N	30			0	0	97	1	1	1	SB	SB	4	
2015212	200908	1520	SCOTTSDALE	RD	THOMPSON PEAK	PY	N	50			0	0	4	1	2	3	SB	SB	4	
1917777	190824	1603	SCOTTSDALE	RD	THOMPSON PEAK	PY	N	200			0	0	13	1	1	1	SB	SB	2	
1901243	190117	1823	SCOTTSDALE	RD	THOMPSON PEAK	PY	S	200			0	0	12	1	8	1	NB	NB	6	
1912622	190613	1455	SCOTTSDALE	RD	THOMPSON PEAK	PY	S	590			0	0	2	1	1	3	NB	NB	4	
2007005	200416	1714	SCOTTSDALE	RD	THOMPSON PEAK	PY	N	600			0	0	13	1	8	1	NB	NB	6	

REPORT #	DATE YYMMDD	TIME HHMM	NORTH / SOUTH ST.	TYPE	EAST WEST ST.	TYPE	DIR FROM	DIST FROM	INJ. SEV. #1	INJ. SEV. #2	PHYS. COND. #1	PHYS. COND. #2	VIOLATION #1	VIOLATION #2	ACTION #1	ACTION #2	TRAV. DIR. #1	TRAV. DIR. #2	MANNER OF COLLISION	COMMENTS

KEY

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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:
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TOTAL **46**

Appendix C – Parcel Information

215-05-304 Land Parcel

This is a Land parcel located at 19552 N 73RD ST SCOTTSDALE 85255. The current owner is RKCCLL INVESTMENTS LLC/ETAL. It is located in the ONE SCOTTSDALE LOT 3 subdivision, and MCR 159925. Its current year full cash value is $7,873,023.

MAPS | PICTOMETRY | $ VIEW/PAY TAX BILL | DEED

OWNER | VALUATIONS | MAP FERRET | SIMILAR PARCELS

REGISTER RENTAL

PROPERTY INFORMATION

19552 N 73RD ST SCOTTSDALE 85255

MCR #	159925
Description	ONE SCOTTSDALE LOT 3 MCR 1599-25
Lat/Long	33.665445 | -111.924089
Lot Size	256,720 sq ft.
Zoning	N/A
Lot #	3
High School District	PARADISE VALLEY UNIFIED #69
Elementary School District	PARADISE VALLEY UNIFIED SCHOOL DISTRICT
Local Jurisdiction	SCOTTSDALE
S/T/R	26 4N 4E
Market Area/Neighborhood	/
Subdivision (8 Parcels)	ONE SCOTTSDALE LOT 3

OWNER INFORMATION

RKCCLL INVESTMENTS LLC/ETAL

Mailing Address	6263 N SCOTTSDALE RD SUITE 330, SCOTTSDALE, AZ 85250

Deed Number	210703036
Last Deed Date	06/28/2021
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	2022	2021
Full Cash Value	$7,873,023	$7,608,146
Limited Value	$4,330,163	$4,450,211
Legal Class	2.R	2.R
Description	AG / VACANT LAND / NON-PROFIT R/P	AG / VACANT LAND / NON-PROFIT R/P
Assessment Ratio	15.0%	15.0%
Assessed LPV	$649,524	$667,532
Property Use Code	0021	0021
PU Description	Vacant Commercial Land	Vacant Commercial Land
Tax Area Code	691400	691400
Valuation Source	Notice	Resolution

MAP FERRET MAPS

Mapferret maps, also known as MapId maps, pdf maps, or output maps are now available here without having to search.

- **Parcel Maps (2)**
- **Subdivision Maps (2)**
- **MCR Maps (2)**
- **Book/Map Maps (12)**

CAUTION! USERS SHOULD INDEPENDENTLY RESEARCH AND VERIFY INFORMATION ON THIS WEBSITE BEFORE RELYING ON IT.

The Assessor's Office has compiled information on this website that it uses to identify, classify, and value real and personal property. Please contact the Maricopa County S.T.A.R. Center at (602) 506-3406 if you believe any information is incomplete, out of date, or incorrect so that appropriate corrections can be addressed. Please note that a statutory process is also available to correct errors pursuant to Arizona Revised Statutes 42-16254.

The Assessor does not guarantee that any information provided on this website is accurate, complete, or current. In many instances, the Assessor has gathered information from independent sources and made it available on this site, and the original information may have contained errors and omissions. Errors and omissions may also have occurred in the process of gathering, interpreting, and reporting the information. Information on the website is not updated in "real time". In addition, users are cautioned that the process used on this site to illustrate the boundaries of the adjacent parcels is not always consistent with the recorded documents for such parcels. The parcel boundaries depicted on this site are for illustrative purposes only, and the exact relationship of adjacent parcels should be independently researched and verified. The information provided on this site is not the equivalent of a title report or a real estate survey. Users should independently research, investigate and verify all information before relying on it or in the preparation of legal documents.

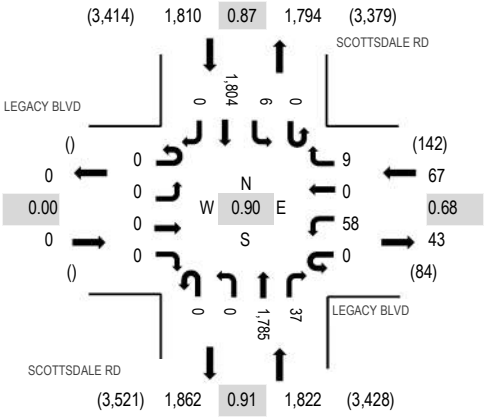
By using this website, you acknowledge having read the above and waive any right you may have to claim against Maricopa County, its officers, employees, and contractors arising out of my reliance on or the use of the information provided on this website.

Appendix D – Traffic Count Data

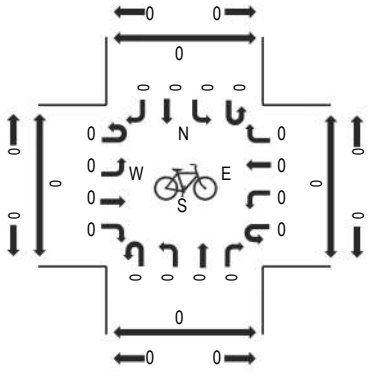
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 SCOTTSDALE RD & LEGACY BLVD AM
Date: Wednesday, December 8, 2021
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

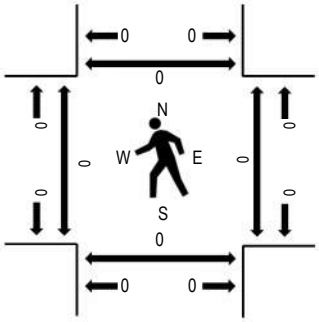
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

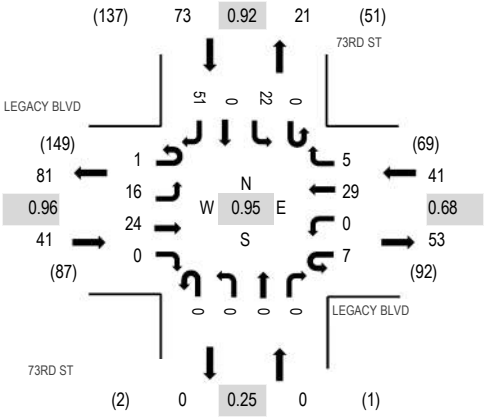
Traffic Counts - Motorized Vehicles

Interval Start Time	LEGACY BLVD Eastbound				LEGACY BLVD Westbound				SCOTTSDALE RD Northbound				SCOTTSDALE RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	14	0	0	0	0	330	12	0	0	325	0	681	3,405	0	0	0	0
7:15 AM	0	0	0	0	0	19	0	1	0	0	381	6	0	2	449	0	858	3,564	0	0	0	0
7:30 AM	0	0	0	0	0	24	0	5	0	0	407	5	0	5	392	0	838	3,637	0	0	0	0
7:45 AM	0	0	0	0	0	8	0	1	0	0	490	9	0	1	519	0	1,028	3,699	0	0	0	0
8:00 AM	0	0	0	0	0	20	0	1	0	0	408	9	0	1	401	0	840	3,579	0	0	0	0
8:15 AM	0	0	0	0	0	14	0	2	0	0	459	11	0	0	445	0	931		0	0	0	0
8:30 AM	0	0	0	0	0	16	0	5	0	0	428	8	0	4	439	0	900		0	0	0	0
8:45 AM	0	0	0	0	0	6	0	6	0	0	455	10	0	1	430	0	908		0	0	0	0
Count Total	0	0	0	0	0	121	0	21	0	0	3,358	70	0	14	3,400	0	6,984		0	0	0	0
Peak Hour	0	0	0	0	0	58	0	9	0	0	1,785	37	0	6	1,804	0	3,699		0	0	0	0

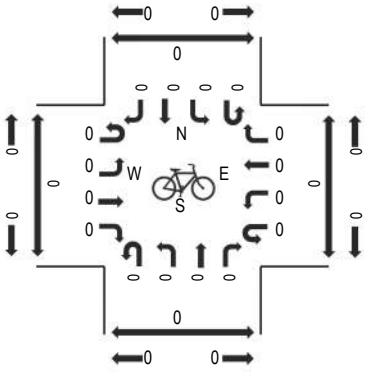
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 73RD ST & LEGACY BLVD AM
Date: Wednesday, December 8, 2021
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

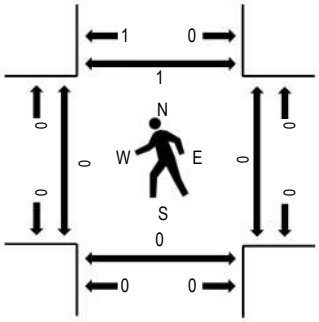
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

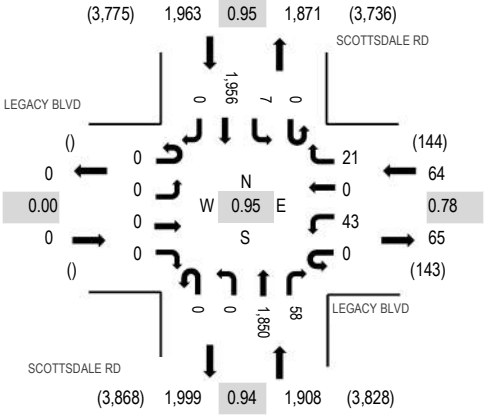
Traffic Counts - Motorized Vehicles

Interval Start Time	LEGACY BLVD Eastbound				LEGACY BLVD Westbound				73RD ST Northbound				73RD ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	7	5	0	0	0	3	2	0	0	0	0	0	4	0	11	32	146	0	0	0	0
7:15 AM	0	2	6	0	3	0	10	2	0	0	0	0	0	3	0	14	40	155	0	0	0	0
7:30 AM	0	5	6	0	2	0	7	0	0	0	0	0	0	6	0	15	41	155	0	0	0	0
7:45 AM	0	5	5	0	0	0	7	1	0	0	0	0	0	8	0	7	33	153	0	0	0	0
8:00 AM	1	4	7	0	2	0	5	2	0	0	0	0	0	5	0	15	41	148	0	0	0	1
8:15 AM	0	4	6	0	0	0	6	3	0	0	0	0	0	6	0	15	40		0	0	0	0
8:30 AM	1	3	6	2	2	0	5	3	0	0	0	1	0	5	0	11	39		0	1	0	0
8:45 AM	1	8	3	0	0	0	4	0	0	0	0	0	0	1	0	11	28		0	0	0	0
Count Total	3	38	44	2	9	0	47	13	0	0	0	1	0	38	0	99	294		0	1	0	1
Peak Hour	1	16	24	0	7	0	29	5	0	0	0	0	0	22	0	51	155		0	0	0	1

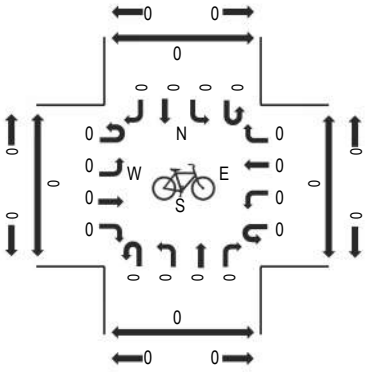
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 SCOTTSDALE RD & LEGACY BLVD PM
Date: Wednesday, December 8, 2021
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

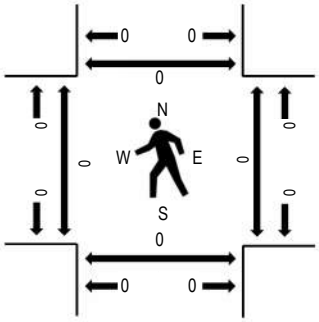
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

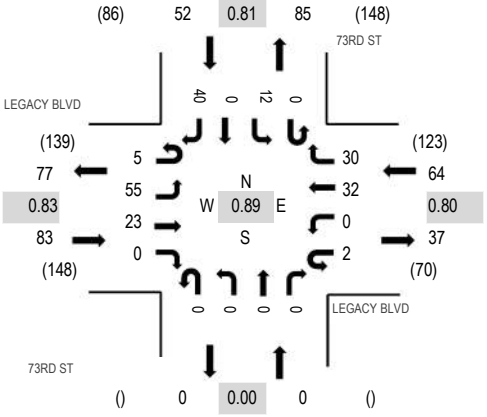
Traffic Counts - Motorized Vehicles

Interval Start Time	LEGACY BLVD Eastbound				LEGACY BLVD Westbound				SCOTTSDALE RD Northbound				SCOTTSDALE RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	11	0	5	0	0	486	12	0	3	506	0	1,023	3,935	0	0	0	0
4:15 PM	0	0	0	0	0	11	0	8	0	0	491	17	0	1	513	0	1,041	3,909	0	0	0	0
4:30 PM	0	0	0	0	0	6	0	4	0	0	424	12	0	2	483	0	931	3,869	0	0	0	0
4:45 PM	0	0	0	0	0	15	0	4	0	0	449	17	0	1	454	0	940	3,879	0	0	0	0
5:00 PM	0	0	0	0	0	10	0	2	0	0	478	18	0	2	487	0	997	3,812	0	0	0	0
5:15 PM	0	0	0	0	0	15	0	7	0	0	460	16	0	1	502	0	1,001		0	0	0	0
5:30 PM	0	0	0	0	2	15	0	3	0	0	499	21	0	1	400	0	941		0	0	0	0
5:45 PM	0	0	0	0	2	22	0	2	0	0	414	14	0	1	418	0	873		0	0	0	0
Count Total	0	0	0	0	4	105	0	35	0	0	3,701	127	0	12	3,763	0	7,747		0	0	0	0
Peak Hour	0	0	0	0	0	43	0	21	0	0	1,850	58	0	7	1,956	0	3,935		0	0	0	0

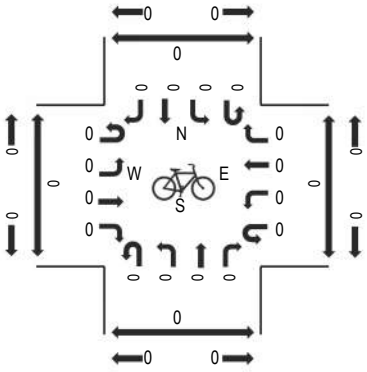
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 73RD ST & LEGACY BLVD PM
Date: Wednesday, December 8, 2021
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

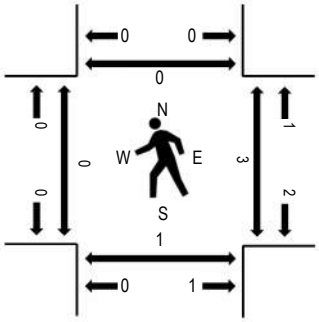
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	LEGACY BLVD Eastbound				LEGACY BLVD Westbound				73RD ST Northbound				73RD ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	2	7	6	0	0	0	9	7	0	0	0	0	0	3	0	7	41	158	0	1	0	0
4:15 PM	3	11	3	0	0	0	6	6	0	0	0	0	0	2	0	6	37	165	0	0	0	0
4:30 PM	1	7	6	0	2	0	7	5	0	0	0	0	0	3	0	3	34	171	0	0	0	0
4:45 PM	1	11	7	0	0	0	8	9	0	0	0	0	0	1	0	9	46	193	0	0	0	0
5:00 PM	0	13	7	0	0	0	5	7	0	0	0	0	0	5	0	11	48	199	0	0	0	0
5:15 PM	3	14	2	0	1	0	9	5	0	0	0	0	0	4	0	5	43		0	1	0	0
5:30 PM	2	14	9	0	1	0	9	7	0	0	0	0	0	3	0	11	56		0	0	0	0
5:45 PM	0	14	5	0	0	0	9	11	0	0	0	0	0	0	0	13	52		0	2	1	0
Count Total	12	91	45	0	4	0	62	57	0	0	0	0	0	21	0	65	357		0	4	1	0
Peak Hour	5	55	23	0	2	0	32	30	0	0	0	0	0	12	0	40	199		0	3	1	0

All Traffic Data Services, LLC

www.alltrafficdata.net

Site Code: 3
Station ID:
Legacy Boulevard E.O Scottsdale Road

Start Time	08-Dec-21 Wed	EB	WB							Total
12:00 AM		4	5							9
01:00		1	1							2
02:00		2	3							5
03:00		0	2							2
04:00		2	7							9
05:00		6	20							26
06:00		28	59							87
07:00		40	72							112
08:00		44	70							114
09:00		39	**77**							116
10:00		**62**	74							**136**
11:00		47	74							121
12:00 PM		65	77							142
01:00		70	65							135
02:00		58	55							113
03:00		55	61							116
04:00		65	64							129
05:00		**78**	**80**							**158**
06:00		64	61							125
07:00		55	36							91
08:00		45	19							64
09:00		39	13							52
10:00		23	15							38
11:00		17	8							25
Total		909	1018							1927
Percent		47.2%	52.8%							
AM Peak	-	10:00	09:00	-	-	-	-	-	-	10:00
Vol.	-	62	77	-	-	-	-	-	-	136
PM Peak	-	17:00	17:00	-	-	-	-	-	-	17:00
Vol.	-	78	80	-	-	-	-	-	-	158
Grand Total		909	1018							1927
Percent		47.2%	52.8%							
ADT		ADT 1,927		AADT 1,927						

All Traffic Data Services, LLC

www.alltrafficdata.net

Site Code: 4
Station ID:
Scottsdale Road S.O Legacy Boulevard

Start Time	08-Dec-21 Wed	NB	SB							Total
12:00 AM		89	81							170
01:00		37	47							84
02:00		36	33							69
03:00		43	40							83
04:00		128	132							260
05:00		419	323							742
06:00		1009	965							1974
07:00		1640	1750							3390
08:00		**1788**	1771							3559
09:00		1665	1755							3420
10:00		1604	1758							3362
11:00		1749	**1946**							**3695**
12:00 PM		1879	1877							3756
01:00		1813	1840							3653
02:00		**2036**	**2065**							**4101**
03:00		1958	1941							3899
04:00		1908	1999							3907
05:00		1920	1869							3789
06:00		1456	1265							2721
07:00		1036	783							1819
08:00		789	637							1426
09:00		577	470							1047
10:00		329	306							635
11:00		162	134							296
Total		26070	25787							51857
Percent		50.3%	49.7%							
AM Peak	-	08:00	11:00	-	-	-	-	-	-	11:00
Vol.	-	1788	1946	-	-	-	-	-	-	3695
PM Peak	-	14:00	14:00	-	-	-	-	-	-	14:00
Vol.	-	2036	2065	-	-	-	-	-	-	4101
Grand Total		26070	25787							51857
Percent		50.3%	49.7%							
ADT		ADT 51,857		AADT 51,857						

Appendix E – Signal Timing

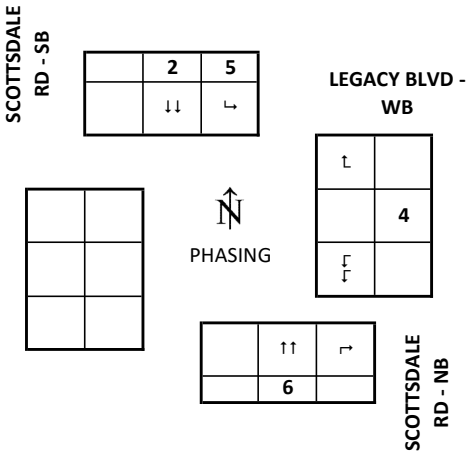
SCOTTSDALE RD & LEGACY BLVD

System # 291

BASIC TIMING PLAN

Section #	I.P. Address	Date Designed
	MM1-5-1	1/20/2021
	172.27.12.91	

TIMING PLAN - MM-2-1	Phase		2		4	5	6		
	Movement		SBT		WBT	SBL	NBT		
	NOTES		COORD			p&P	COORD		
	MIN GRN		10		7	5	10		
	BK MGRN								
	CS MGRN								
	DLY GRN								
	WALK		0		0		7		
	WALK2								
	WLK MAX								
	PED CLR/FDW		-		-		26		
	PD CLR2								
	PC MAX								
	PED CO								
	VEH EXT		1		2	2	1		
	VH EXT2								
	MAX 1		70		25	20	70		
	MAX 2		90		40	30	90		
	MAX 3								
	DYM MAX								
	DYM STP								
	YELLOW		4.7		3.6	4	4.7		
	RED CLR		1.6		3.0	2	1.6		
	RED MAX								
	RED RVT		2		2	2	2		
	ACT B4								
	SEC/ACT								
	MAX INT								
	TIME B4								
	CARS WT								
	STPTDUC								
	TTREDUC								
	MIN GAP								
RECALLS - MM-2-8	LOCK DET								
	VEH RECALL		X				X		
	PED RECALL								
	MAX RECALL								
	SOFT RECALL								
	NO REST								
	ADD INIT CAL								



PHASING SEQUENCES

TOD: MORNING

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

Use Timing plan:

TOD: MIDDAY

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

Use Timing plan:

TOD: EVENING

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

Use Timing plan:

TOD: NIGHT

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

Use Timing plan:

FREE

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

Use Timing plan: 254

NOTES

Approved By

Effective Date

SCOTTSDALE RD & LEGACY BLVD

System #	291

COORDINATOR	Section #	Date Updated
	0	1/20/2021

PHASE	1	2	3	4	5	6	7	8
FDW		-		-		26		
YELLOW		4.7		3.6	4	4.7		
ALL RED		1.6		3	2	1.6		
WALK		-		-		26		

PLAN 1 AM PLAN OPERATIVE TIMES 6:00

										COORD PATTERN	OFFSET
R1	1	↑↑↑	2	↓	3	↑↑↑	4	←			
R2	5	↳	6	↑	7	↑↑↑	8	↑↑↑		Balanced	115
	RING 1				RING 2						
PHASE	1	2	3	4	5	6	7	8			
SPLIT		100		20	14	86				Target Cycle Length	
COORD		X				X				120	
RECALLS		V				V				Actual Cycle Length	
GREEN		93.7		13.4	8.0	79.7				120	

PLAN 2 MIDDAY PLAN OPERATIVE TIMES 9:00

										COORD PATTERN	OFFSET
R1	1	↑↑↑	2	↓	3	↑↑↑	4	←			
R2	5	↳	6	↑	7	↑↑↑	8	↑↑↑		Balanced	86
	RING 1				RING 2						
PHASE	1	2	3	4	5	6	7	8			
SPLIT		88		20	12	76				Target Cycle Length	
COORD		X				X				108	
RECALLS		V				V				Actual Cycle Length	
GREEN		81.7		13.4	6.0	69.7				108	

PLAN 3 PM PLAN OPERATIVE TIMES 15:00

										COORD PATTERN	OFFSET
R1	1	↑↑↑	2	↓	3	↑↑↑	4	←			
R2	5	↳	6	↑	7	↑↑↑	8	↑↑↑		Balanced	75
	RING 1				RING 2						
PHASE	1	2	3	4	5	6	7	8			
SPLIT		106		14	11	95				Target Cycle Length	
COORD		X				X				120	
RECALLS		V				V				Actual Cycle Length	
GREEN		99.7		7.4	5.0	88.7				120	

PLAN 4 MIDNIGHT PLAN OPERATIVE TIMES 22:00

										COORD PATTERN	OFFSET
R1	1	↑↑↑	2	↓	3	↑↑↑	4	←			
R2	5	↳	6	↑	7	↑↑↑	8	↑↑↑		Balanced	10
	RING 1				RING 2						
PHASE	1	2	3	4	5	6	7	8			
SPLIT		71		19	12	59				Target Cycle Length	
COORD		X				X				90	
RECALLS		V				V				Actual Cycle Length	
GREEN		64.7		12.4	6.0	52.7				90	

Appendix F – Existing Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	57	9	1739	37	6	1758
Future Volume (veh/h)	57	9	1739	37	6	1758
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	10	1932	41	7	1953
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	184	84	2774	1237	190	2983
Arrive On Green	0.05	0.05	0.78	0.78	0.01	0.84
Sat Flow, veh/h	3456	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	63	10	1932	41	7	1953
Grp Sat Flow(s),veh/h/ln	1728	1585	1777	1585	1781	1777
Q Serve(g_s), s	2.1	0.7	31.4	0.7	0.1	23.5
Cycle Q Clear(g_c), s	2.1	0.7	31.4	0.7	0.1	23.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	184	84	2774	1237	190	2983
V/C Ratio(X)	0.34	0.12	0.70	0.03	0.04	0.65
Avail Cap(c_a), veh/h	386	177	2774	1237	294	2983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	54.1	6.3	3.0	7.1	3.4
Incr Delay (d2), s/veh	0.4	0.2	1.5	0.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.7	8.5	0.2	0.0	4.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.2	54.4	7.8	3.0	7.1	4.6
LnGrp LOS	E	D	A	A	A	A
Approach Vol, veh/h	73		1973			1960
Approach Delay, s/veh	55.1		7.7			4.6
Approach LOS	E		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		107.0		13.0	7.0	100.0
Change Period (Y+Rc), s		* 6.3		6.6	6.0	* 6.3
Max Green Setting (Gmax), s		* 94		13.4	8.0	* 80
Max Q Clear Time (g_c+I1), s		25.5		4.1	2.1	33.4
Green Ext Time (p_c), s		6.7		0.1	0.0	6.5

Intersection Summary	
HCM 6th Ctrl Delay	7.0
HCM 6th LOS	A

Notes

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

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

Intersection	
Int Delay, s/veh	5.3

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	2	16	24	0	4	0	23	9	0	0	0	24	0	47
Future Vol, veh/h	2	16	24	0	4	0	23	9	0	0	0	24	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	105	-	160	-	200	-	-	-	-	-	0	-	150
Veh in Median Storage, #	-	-	0	-	-	-	0	-	1082292224		-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	17	26	0	4	0	25	10	0	0	0	26	0	51

Major/Minor	Major1				Major2					Minor2		
Conflicting Flow All	35	35	0	0	26	26	0	0		89	-	18
Stage 1	-	-	-	-	-	-	-	-		38	-	-
Stage 2	-	-	-	-	-	-	-	-		51	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-		6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-		5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-		5.84	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-		3.52	-	3.32
Pot Cap-1 Maneuver	1358	1575	-	-	1376	1587	-	-		902	0	1056
Stage 1	-	-	-	-	-	-	-	-		980	0	-
Stage 2	-	-	-	-	-	-	-	-		965	0	-
Platoon blocked, %			-	-			-	-				
Mov Cap-1 Maneuver	1539	1539	-	-	1376	1376	-	-		888	0	1056
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-		888	0	-
Stage 1	-	-	-	-	-	-	-	-		967	0	-
Stage 2	-	-	-	-	-	-	-	-		962	0	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0.8	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1539	-	-	1376	-	-	888	1056
HCM Lane V/C Ratio	0.013	-	-	0.003	-	-	0.029	0.048
HCM Control Delay (s)	7.4	-	-	7.6	-	-	9.2	8.6
HCM Lane LOS	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.1	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	21	1802	57	7	1906
Future Volume (veh/h)	42	21	1802	57	7	1906
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	23	1959	62	8	2072
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	181	83	2773	1237	185	2985
Arrive On Green	0.05	0.05	0.78	0.78	0.01	0.84
Sat Flow, veh/h	3456	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	46	23	1959	62	8	2072
Grp Sat Flow(s),veh/h/ln	1728	1585	1777	1585	1781	1777
Q Serve(g_s), s	1.5	1.7	32.4	1.1	0.1	26.8
Cycle Q Clear(g_c), s	1.5	1.7	32.4	1.1	0.1	26.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	181	83	2773	1237	185	2985
V/C Ratio(X)	0.25	0.28	0.71	0.05	0.04	0.69
Avail Cap(c_a), veh/h	213	98	2773	1237	242	2985
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.6	54.7	6.5	3.0	7.4	3.7
Incr Delay (d2), s/veh	0.3	0.7	1.5	0.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.5	8.8	0.3	0.1	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.9	55.3	8.0	3.1	7.4	5.0
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	69		2021			2080
Approach Delay, s/veh	55.0		7.9			5.0
Approach LOS	E		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		107.1		12.9	7.2	99.9
Change Period (Y+Rc), s		* 6.3		6.6	6.0	* 6.3
Max Green Setting (Gmax), s		* 1E2		7.4	5.0	* 89
Max Q Clear Time (g_c+I1), s		28.8		3.7	2.1	34.4
Green Ext Time (p_c), s		7.6		0.0	0.0	6.8

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Notes

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

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

Intersection	
Int Delay, s/veh	4.1

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	7	36	22	0	2	0	30	27	0	0	0	9	0	25
Future Vol, veh/h	7	36	22	0	2	0	30	27	0	0	0	9	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	105	-	160	-	200	-	-	-	-	-	0	-	150
Veh in Median Storage, #	-	-	0	-	-	-	0	-	1082292224		-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	42	26	0	2	0	35	31	0	0	0	10	0	29

Major/Minor	Major1				Major2						Minor2		
Conflicting Flow All	66	66	0	0	26	26	0	0			168	-	33
Stage 1	-	-	-	-	-	-	-	-			55	-	-
Stage 2	-	-	-	-	-	-	-	-			113	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-			6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-			5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-			5.84	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-			3.52	-	3.32
Pot Cap-1 Maneuver	1299	1534	-	-	1376	1587	-	-			806	0	1033
Stage 1	-	-	-	-	-	-	-	-			961	0	-
Stage 2	-	-	-	-	-	-	-	-			899	0	-
Platoon blocked, %			-	-			-	-					
Mov Cap-1 Maneuver	1483	1483	-	-	1376	1376	-	-			778	0	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-			778	0	-
Stage 1	-	-	-	-	-	-	-	-			928	0	-
Stage 2	-	-	-	-	-	-	-	-			898	0	-

Approach	EB	WB	SB
HCM Control Delay, s	5	0.3	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1483	-	-	1376	-	-	778	1033
HCM Lane V/C Ratio	0.034	-	-	0.002	-	-	0.013	0.028
HCM Control Delay (s)	7.5	-	-	7.6	-	-	9.7	8.6
HCM Lane LOS	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-	0	0.1

Appendix G – Trip Generation

QuikTrip

Completed: SS 11/24/2021
Checked: TG 12/7/2021

Trip Generation Calculations

945 Convenience Store/Gas Station (GFA 4-5.5k)

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	
Convenience Store/Gas Station	**945**	**16**	**Fueling Positions**	**257.13**	**50%**	**50%**	**27.04**	**50%**	**50%**	**22.76**	**50%**	**50%**	**4,114**	**2,057**	**2,057**	**433**	**217**	**216**	**364**	**182**	**182**	**Average**
Convenience Store/Gas Station	945	16	Fueling Positions	193.00	50%	50%	7.78	50%	50%	9.78	50%	50%	3,088	1,544	1,544	124	62	62	156	78	78	Minimum
Convenience Store/Gas Station	945	16	Fueling Positions	324.17	50%	50%	44.38	50%	50%	37.50	50%	50%	5,187	2,594	2,593	710	355	355	600	300	300	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	
Convenience Store/Gas Station	945	16	Fueling Positions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Equation

Convenience Store/Gas Station	Standard Deviation	57.53		9.88		8.49
	Number of Studies	5		18		23
	Average Size	14		13		14
	R^2	N/A		N/A		N/A

QuikTrip

Completed: SS 11/24/2021

Checked: TG 12/17/2021

Pass-By Calculations

Land Use	SF	Fueling Positions	BEFORE REDUCTION AM PEAK HR			PASS-BY	After Pass-By AM REDUCED				BEFORE REDUCTION PM PEAK HR			PASS-BY	After Pass-By PM REDUCED		
			ENTER	EXIT	TOTAL	Rate %	ENTER	EXIT	TOTAL		ENTER	EXIT	TOTAL	Rate %	ENTER	EXIT	TOTAL
Gasoline/Service Station with Convenience Market		16	217	216	433	78%	48	48	96		182	182	364	72%	51	51	102
TOTAL			217	216	433		48	48	96		182	182	364		51	51	102

Appendix H – MAG Socioeconomic Projections

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
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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

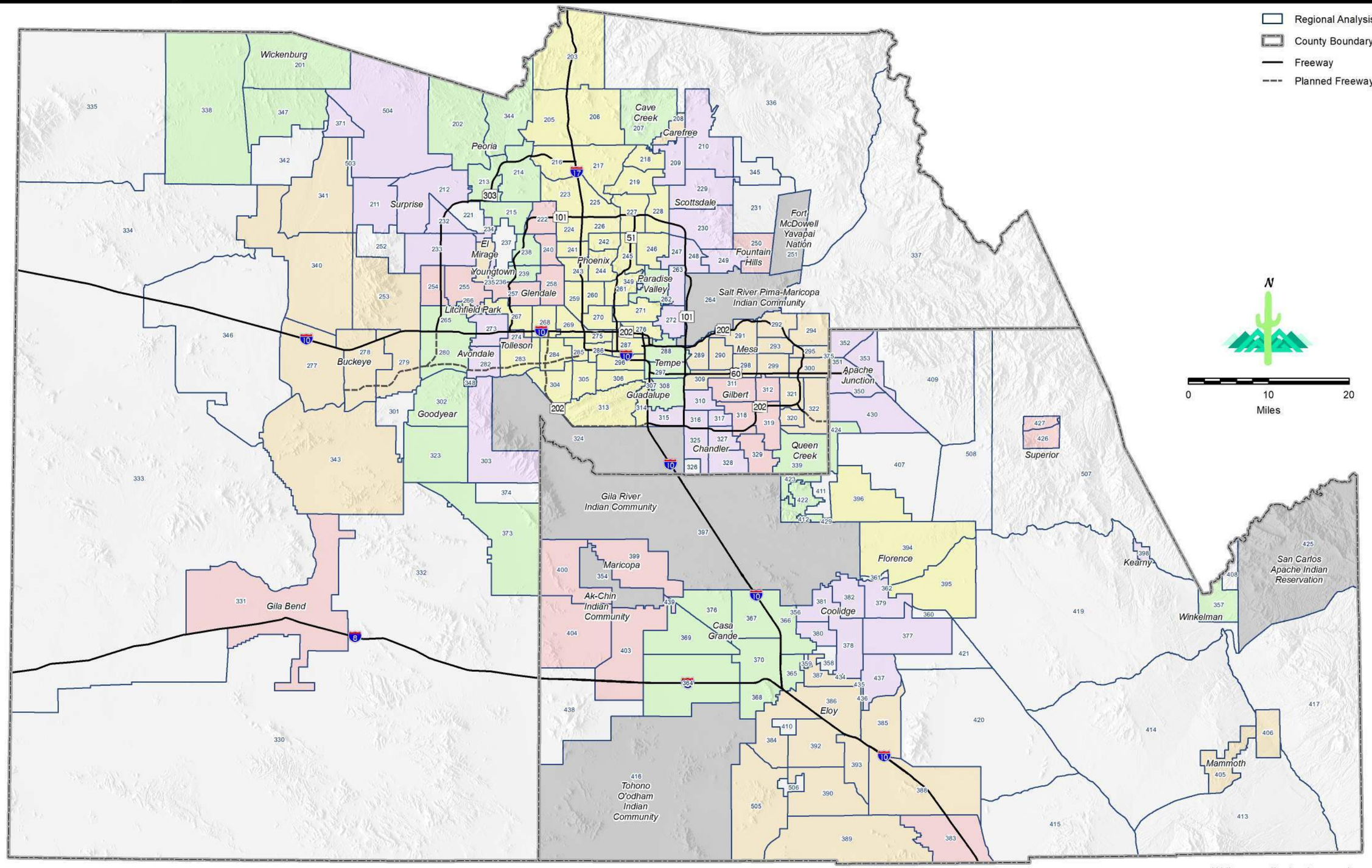
Notes: Numbers rounded to the nearest 100. These projections include both the Maricopa County and Pinal County portions for Apache Junction, Queen Creek, and the Gila River Indian Community. Peoria and Wickenburg include only the Maricopa County portion.

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

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

		Total Employment					
RAZ	County	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 I – Year 2023 No Build Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	59	10	1774	38	7	1794
Future Volume (veh/h)	59	10	1774	38	7	1794
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	64	11	1928	41	8	1950
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	185	85	2769	1235	192	2981
Arrive On Green	0.05	0.05	0.78	0.78	0.01	0.84
Sat Flow, veh/h	3456	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	64	11	1928	41	8	1950
Grp Sat Flow(s),veh/h/ln	1728	1585	1777	1585	1781	1777
Q Serve(g_s), s	2.1	0.8	31.4	0.7	0.1	23.5
Cycle Q Clear(g_c), s	2.1	0.8	31.4	0.7	0.1	23.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	185	85	2769	1235	192	2981
V/C Ratio(X)	0.35	0.13	0.70	0.03	0.04	0.65
Avail Cap(c_a), veh/h	518	238	2769	1235	264	2981
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	54.1	6.4	3.0	7.1	3.4
Incr Delay (d2), s/veh	0.4	0.3	1.5	0.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.7	8.5	0.2	0.0	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.2	54.4	7.9	3.1	7.1	4.6
LnGrp LOS	E	D	A	A	A	A
Approach Vol, veh/h	75		1969			1958
Approach Delay, s/veh	55.1		7.8			4.6
Approach LOS	E		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		107.0		13.0	7.2	99.8
Change Period (Y+Rc), s		* 6.3		6.6	6.0	* 6.3
Max Green Setting (Gmax), s		* 89		18.0	6.0	* 77
Max Q Clear Time (g_c+I1), s		25.5		4.1	2.1	33.4
Green Ext Time (p_c), s		6.7		0.1	0.0	6.5

Intersection Summary	
HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Notes

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

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

Intersection	
Int Delay, s/veh	5.3

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	3	17	25	0	5	0	24	10	0	0	0	25	0	48
Future Vol, veh/h	3	17	25	0	5	0	24	10	0	0	0	25	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	105	-	160	-	200	-	-	-	-	-	0	-	150
Veh in Median Storage, #	-	-	0	-	-	-	0	-	1082292224		-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	18	27	0	5	0	26	11	0	0	0	27	0	52

Major/Minor	Major1				Major2						Minor2		
Conflicting Flow All	37	37	0	0	27	27	0	0			98	-	19
Stage 1	-	-	-	-	-	-	-	-			42	-	-
Stage 2	-	-	-	-	-	-	-	-			56	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-			6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-			5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-			5.84	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-			3.52	-	3.32
Pot Cap-1 Maneuver	1354	1572	-	-	1374	1585	-	-			890	0	1055
Stage 1	-	-	-	-	-	-	-	-			975	0	-
Stage 2	-	-	-	-	-	-	-	-			960	0	-
Platoon blocked, %			-	-			-	-					
Mov Cap-1 Maneuver	1523	1523	-	-	1374	1374	-	-			874	0	1055
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-			874	0	-
Stage 1	-	-	-	-	-	-	-	-			961	0	-
Stage 2	-	-	-	-	-	-	-	-			956	0	-

Approach	EB	WB	SB
HCM Control Delay, s	3.3	1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1523	-	-	1374	-	-	874	1055
HCM Lane V/C Ratio	0.014	-	-	0.004	-	-	0.031	0.049
HCM Control Delay (s)	7.4	-	-	7.6	-	-	9.3	8.6
HCM Lane LOS	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.1	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	22	1839	59	8	1945
Future Volume (veh/h)	43	22	1839	59	8	1945
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	24	1999	64	9	2114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	183	84	2768	1234	179	2984
Arrive On Green	0.05	0.05	0.78	0.78	0.01	0.84
Sat Flow, veh/h	3456	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	47	24	1999	64	9	2114
Grp Sat Flow(s),veh/h/ln	1728	1585	1777	1585	1781	1777
Q Serve(g_s), s	1.6	1.7	34.1	1.1	0.1	28.3
Cycle Q Clear(g_c), s	1.6	1.7	34.1	1.1	0.1	28.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	183	84	2768	1234	179	2984
V/C Ratio(X)	0.26	0.29	0.72	0.05	0.05	0.71
Avail Cap(c_a), veh/h	213	98	2768	1234	234	2984
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.6	54.7	6.7	3.1	8.0	3.8
Incr Delay (d2), s/veh	0.3	0.7	1.7	0.1	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.6	9.4	0.3	0.1	5.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.8	55.3	8.4	3.1	8.0	5.3
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	71		2063			2123
Approach Delay, s/veh	55.0		8.2			5.3
Approach LOS	E		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		107.1		12.9	7.3	99.8
Change Period (Y+Rc), s		* 6.3		6.6	6.0	* 6.3
Max Green Setting (Gmax), s		* 1E2		7.4	5.0	* 89
Max Q Clear Time (g_c+I1), s		30.3		3.7	2.1	36.1
Green Ext Time (p_c), s		7.9		0.0	0.0	7.0

Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A

Notes

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

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

Intersection	
Int Delay, s/veh	4.1

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	8	37	23	0	3	0	31	28	0	0	0	10	0	26
Future Vol, veh/h	8	37	23	0	3	0	31	28	0	0	0	10	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	105	-	160	-	200	-	-	-	-	-	0	-	150
Veh in Median Storage, #	-	-	0	-	-	-	0	-	1082292224		-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	40	25	0	3	0	34	30	0	0	0	11	0	28

Major/Minor	Major1				Major2						Minor2		
Conflicting Flow All	64	64	0	0	25	25	0	0			166	-	32
Stage 1	-	-	-	-	-	-	-	-			55	-	-
Stage 2	-	-	-	-	-	-	-	-			111	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-			6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-			5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-			5.84	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-			3.52	-	3.32
Pot Cap-1 Maneuver	1303	1536	-	-	1378	1588	-	-			808	0	1035
Stage 1	-	-	-	-	-	-	-	-			961	0	-
Stage 2	-	-	-	-	-	-	-	-			901	0	-
Platoon blocked, %			-	-			-	-					
Mov Cap-1 Maneuver	1481	1481	-	-	1378	1378	-	-			780	0	1035
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-			780	0	-
Stage 1	-	-	-	-	-	-	-	-			929	0	-
Stage 2	-	-	-	-	-	-	-	-			899	0	-

Approach	EB	WB	SB
HCM Control Delay, s	5	0.4	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1481	-	-	1378	-	-	780	1035
HCM Lane V/C Ratio	0.033	-	-	0.002	-	-	0.014	0.027
HCM Control Delay (s)	7.5	-	-	7.6	-	-	9.7	8.6
HCM Lane LOS	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-	0	0.1

Appendix J – Year 2023 Build Capacity Analysis

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	146	1661	149	0	1823
Future Vol, veh/h	0	146	1661	149	0	1823
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	159	1805	162	0	1982

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	903	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*389	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-		-
Mov Cap-1 Maneuver	-	*389	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	389	-
HCM Lane V/C Ratio	-	-	0.408	-
HCM Control Delay (s)	-	-	20.5	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	1.9	-

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	125	14	1796	38	71	1752
Future Volume (veh/h)	125	14	1796	38	71	1752
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	136	15	1952	41	77	1904
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	200	92	2651	1183	223	2966
Arrive On Green	0.06	0.06	0.75	0.75	0.04	0.83
Sat Flow, veh/h	3456	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	136	15	1952	41	77	1904
Grp Sat Flow(s),veh/h/ln	1728	1585	1777	1585	1781	1777
Q Serve(g_s), s	4.6	1.1	37.1	0.8	1.1	22.9
Cycle Q Clear(g_c), s	4.6	1.1	37.1	0.8	1.1	22.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	200	92	2651	1183	223	2966
V/C Ratio(X)	0.68	0.16	0.74	0.03	0.35	0.64
Avail Cap(c_a), veh/h	616	283	2651	1183	244	2966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	53.8	8.6	4.0	12.4	3.5
Incr Delay (d2), s/veh	1.5	0.3	1.9	0.1	0.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.0	11.3	0.2	0.9	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.9	54.1	10.4	4.0	12.7	4.6
LnGrp LOS	E	D	B	A	B	A
Approach Vol, veh/h	151		1993			1981
Approach Delay, s/veh	56.7		10.3			4.9
Approach LOS	E		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		106.4		13.6	10.6	95.8
Change Period (Y+Rc), s		* 6.3		6.6	6.0	* 6.3
Max Green Setting (Gmax), s		* 86		21.4	6.0	* 74
Max Q Clear Time (g_c+I1), s		24.9		6.6	3.1	39.1
Green Ext Time (p_c), s		6.4		0.2	0.0	6.6

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

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

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	136	15	1952	41	77	1904
v/c Ratio	0.51	0.11	0.75	0.04	0.45	0.66
Control Delay	59.6	24.3	13.3	3.7	14.9	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	24.3	13.3	3.7	14.9	6.0
Queue Length 50th (ft)	53	0	436	4	9	242
Queue Length 95th (ft)	84	m21	652	17	42	343
Internal Link Dist (ft)	271		660			332
Turn Bay Length (ft)	230	125		145	195	
Base Capacity (vph)	612	294	2590	1164	179	2884
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.05	0.75	0.04	0.43	0.66

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	109	72	68	0	70
Future Vol, veh/h	0	109	72	68	0	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	118	78	74	0	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	76
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	970
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	970
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	970
HCM Lane V/C Ratio	-	-	-	0.078
HCM Control Delay (s)	-	-	-	9
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection	
Int Delay, s/veh	6.2

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	67	17	25	0	5	0	26	10	0	0	0	25	0	50
Future Vol, veh/h	67	17	25	0	5	0	26	10	0	0	0	25	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	105	-	160	-	200	-	-	-	-	-	0	-	150
Veh in Median Storage, #	-	-	0	-	-	-	0	-	1082456064		-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	18	27	0	5	0	28	11	0	0	0	27	0	54

Major/Minor	Major1				Major2					Minor2		
Conflicting Flow All	39	39	0	0	27	27	0	0		240	-	20
Stage 1	-	-	-	-	-	-	-	-		44	-	-
Stage 2	-	-	-	-	-	-	-	-		196	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-		6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-		5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-		5.84	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-		3.52	-	3.32
Pot Cap-1 Maneuver	1351	1569	-	-	1374	1585	-	-		727	0	1053
Stage 1	-	-	-	-	-	-	-	-		973	0	-
Stage 2	-	-	-	-	-	-	-	-		818	0	-
Platoon blocked, %			-	-			-	-				
Mov Cap-1 Maneuver	1336	1336	-	-	1374	1374	-	-		675	0	1053
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-		675	0	-
Stage 1	-	-	-	-	-	-	-	-		907	0	-
Stage 2	-	-	-	-	-	-	-	-		815	0	-

Approach	EB	WB	SB
HCM Control Delay, s	6.1	0.9	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1336	-	-	1374	-	-	675	1053
HCM Lane V/C Ratio	0.068	-	-	0.004	-	-	0.04	0.052
HCM Control Delay (s)	7.9	-	-	7.6	-	-	10.6	8.6
HCM Lane LOS	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-	-	0.1	0.2

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	120	1767	121	0	1975
Future Vol, veh/h	0	120	1767	121	0	1975
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	130	1921	132	0	2147

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	961	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*363	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-		-
Mov Cap-1 Maneuver	-	*363	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	363	-
HCM Lane V/C Ratio	-	-	0.359	-
HCM Control Delay (s)	-	-	20.4	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	1.6	-

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	110	28	2024	64	68	2078
v/c Ratio	0.46	0.21	0.76	0.05	0.44	0.71
Control Delay	59.8	22.1	12.2	2.1	15.4	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	22.1	12.2	2.1	15.4	6.4
Queue Length 50th (ft)	43	1	456	3	7	278
Queue Length 95th (ft)	72	m29	584	15	36	377
Internal Link Dist (ft)	210		660			382
Turn Bay Length (ft)	230	125		145	195	
Base Capacity (vph)	242	137	2684	1212	154	2944
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.20	0.75	0.05	0.44	0.71

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	101	26	1862	59	63	1912
Future Volume (veh/h)	101	26	1862	59	63	1912
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	28	2024	64	68	2078
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	200	92	2656	1185	208	2966
Arrive On Green	0.06	0.06	0.75	0.75	0.04	0.83
Sat Flow, veh/h	3456	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	110	28	2024	64	68	2078
Grp Sat Flow(s),veh/h/ln	1728	1585	1777	1585	1781	1777
Q Serve(g_s), s	3.7	2.0	40.1	1.3	0.9	27.9
Cycle Q Clear(g_c), s	3.7	2.0	40.1	1.3	0.9	27.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	200	92	2656	1185	208	2966
V/C Ratio(X)	0.55	0.31	0.76	0.05	0.33	0.70
Avail Cap(c_a), veh/h	213	98	2656	1185	216	2966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	54.2	8.9	4.0	13.7	3.9
Incr Delay (d2), s/veh	1.2	0.7	2.1	0.1	0.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.8	12.2	0.4	0.9	5.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.2	54.9	11.0	4.1	14.1	5.4
LnGrp LOS	E	D	B	A	B	A
Approach Vol, veh/h	138		2088			2146
Approach Delay, s/veh	56.0		10.8			5.6
Approach LOS	E		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		106.5		13.5	10.5	96.0
Change Period (Y+Rc), s		* 6.3		6.6	6.0	* 6.3
Max Green Setting (Gmax), s		* 1E2		7.4	5.0	* 89
Max Q Clear Time (g_c+I1), s		29.9		5.7	2.9	42.1
Green Ext Time (p_c), s		7.6		0.0	0.0	7.2

Intersection Summary	
HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

Notes

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

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

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	122	57	61	0	62
Future Vol, veh/h	0	122	57	61	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	133	62	66	0	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	64
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	987
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	987
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	987
HCM Lane V/C Ratio	-	-	-	0.068
HCM Control Delay (s)	-	-	-	8.9
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.2

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	63	37	23	0	3	0	34	28	0	0	0	10	0	29
Future Vol, veh/h	63	37	23	0	3	0	34	28	0	0	0	10	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	105	-	160	-	200	-	-	-	-	-	0	-	150
Veh in Median Storage, #	-	-	0	-	-	-	0	-	1082456064		-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	40	25	0	3	0	37	30	0	0	0	11	0	32

Major/Minor	Major1				Major2					Minor2		
Conflicting Flow All	67	67	0	0	25	25	0	0		287	-	34
Stage 1	-	-	-	-	-	-	-	-		58	-	-
Stage 2	-	-	-	-	-	-	-	-		229	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-		6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-		5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-		5.84	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-		3.52	-	3.32
Pot Cap-1 Maneuver	1297	1533	-	-	1378	1588	-	-		680	0	1032
Stage 1	-	-	-	-	-	-	-	-		958	0	-
Stage 2	-	-	-	-	-	-	-	-		787	0	-
Platoon blocked, %			-	-			-	-				
Mov Cap-1 Maneuver	1350	1350	-	-	1378	1378	-	-		624	0	1032
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-		624	0	-
Stage 1	-	-	-	-	-	-	-	-		880	0	-
Stage 2	-	-	-	-	-	-	-	-		785	0	-

Approach	EB	WB	SB
HCM Control Delay, s	6.4	0.4	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1350	-	-	1378	-	-	624	1032
HCM Lane V/C Ratio	0.081	-	-	0.002	-	-	0.017	0.031
HCM Control Delay (s)	7.9	-	-	7.6	-	-	10.9	8.6
HCM Lane LOS	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-	-	0.1	0.1