L-1 Traffic Report

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TRANSPORTATION IMPACT ANALYSIS

GLAMIS SPECIFIC PLAN

Imperial County, California
February 7, 2022

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1.0 INTRODUCTION

The following transportation study has been prepared to determine and evaluate the traffic impacts on the local circulation system due to the development of the Glamis Specific Plan project (Project) in Imperial County. The purpose of this transportation study is to assess the potential impacts to the local circulation system as a result of the Project.

Included in this traffic study are the following:

- Project Description
- Vehicle Miles Traveled Assessment
- Existing Conditions Discussion
- Project Study Area, Analysis Scenarios & Methodology
- Level of Service Standards
- Analysis of Existing Conditions
- Project Trip Generation, Distribution, & Assignment
- Cumulative Projects
- Analysis of Near-Term Scenarios
- Analysis of Long-Term Scenarios
- Access Assessment
- Conclusions & Recommendations

2.0 PROJECT DESCRIPTION

2.1 Project Location

The Glamis Specific Plan (GSP) area is located approximately 27 miles east of Brawley at the intersection of State Route 78 (SR 78) and the Union Pacific Railroad (UPRR) in Imperial County, California. Geographically, the project site is located within the lower Colorado River Sonoran Desert Region in the east central portion of Imperial County (County).

Figure 2–1 depicts the Project vicinity. ***Figure 2–2*** shows a more detailed Project area map.

2.2 Project Description

The approximately 142-acre GSP is located and contained within the County's designated Glamis Specific Plan Area (GSPA). The GSPA allows for the development and creation of a Specific Plan in accordance with GSPA design criteria, objectives and policies as outlined in the County's General Plan Land Use Element. The existing zoning designation for the project site is Open Space/Preservation (S-2) and a very small area that is General Commercial (C-2). The general area of the Glamis Beach Store (within APN 039-310-029) is zoned as C-2, while the remainder of the project site is zoned as S-2. The project site is surrounded by the Bureau of Land Management (BLM) land uses on all sides.

The proposed GSP includes a General Plan Amendment (GPA) and Change of Zone (CZ) for County approval. The GSP proposes the establishment of Commercial/Recreational (CR) designated zoning based upon different levels of allowable land use intensity. Also, the GSP proposes a Change of Zone from S-2 (Open Space/Preservation) to S-1 (Open Space/Recreation) for the approximate 1-acre parcel on the southeast side of the project site (APN 039-310-017). The phasing plan component of the GSP would phase the development so that more intense land uses are developed incrementally over time within the various proposed zones. ***Figure 2–3*** depicts the Conceptual Site Plan.

Figure 2–4 depicts the Preferred Land Use Areas and Specific Plan Phasing. An unabridged version of the Project description is provided in ***Appendix A***.

2.3 Project Phasing

Development within the GSP is intended to occur over gradually over many years, and will depend on market conditions, availability of supporting infrastructure, and other factors. Four (4) phases of development are proposed as follows. In general, the specific land-uses to be developed have not yet been determined. At this time, the GSP aims to modify the allowable land uses on the site, not to establish a detailed parcel by parcel development scheme.

Phase One

Phase One would be contained within Land Use Area 1, with the exception of possible development of a research and development (R&D) facility to occur either within Land Use Area 5 or 6, and an RV park or employee housing in Land Use Areas 2, 3, and/or 4. Part of Land Use Area 8 could be

developed during Phase One as it slightly overlaps onto current land used for Camp RZR. Uses permitted within Phase One could include restaurant(s), bar(s), repair shop(s), a vendor row area and event area.

Phase Two

Phase Two would most likely be within Land Use Area 1, immediately west of Phase One. Phase Two development would serve as an extension to development occurring within Phase One by incorporating land uses permitted under the CR Zone similar to those permitted in Phase One. Phase Two would also incorporate the Glamis Mainstreet to serve as a circulation corridor for Off-Highway Vehicle (OHV) traffic to and from the dunes and to Phase Four (Areas 2, 3, and 4) located directly north of SR 78.

Phase Three

Phase Three, located on the northeast side of the UPRR and bisected by SR 78, would be located within Land Use Area 5 and Land Use Area 6. No major public use facilities would be considered for development within these two APNs to discourage OHV traffic from crossing the UPPR to access these areas. Phase Three however, would serve for the development of uses relevant to employee housing, RV park, and/or an R&D facility and possible PV Solar array system.

Phase Four

Phase Four, located on the north side of SR 78, would be located within Land Use Areas 2, 3 and 4. The Glamis Mainstreet corridor is proposed to provide an optional circulation interconnection between Phase One and Phase Four. All Phasing as proposed will be impacted by possible requirements that Caltrans may impose along SR 78 and for crossing the UPRR. The Imperial County Transportation Commission (ICTC) is currently conducting a feasibility study for a safe crossing over UPRR for off road vehicles either at SR 78 or Wash 10 or some other location, and additional information will be provided once the feasibility study is complete.

Overall, the primary objective of the GSP is to formalize the site and provide services and amenities. The Project's proposed land uses are intended to serve the existing patrons of the dunes and will not operate year-round due to the long distance from population bases and the extreme heat. It is not expected that the Project will draw a significant number of new users to the dunes.

This traffic study analyzes the following specific components of the Project, which are anticipated to be developed within the first ten years:

- Restaurant Expansion: 4,000 SF
- Retail Expansion: 2,000 SF
- Service Center: Four (4) Service Bays
- Research & Development Facility: 5,000 SF
- Hotel / Motel: 20 Rooms
- Multi-Family Residential / Staff Housing: 14 Units

- RV Park: 30 Sites
- Vendor Row Expansion

Any additional future development that is not listed above and that exceeds the number of trips generated by the above uses will require a new traffic study and may require additional mitigation based on that study. All additional traffic studies will need to be submitted to the County of Imperial and Caltrans for review and approval.

2.4 Project Access

The Project site is regionally accessible via SR 78 and serves as the primary transportation route for cars and trucks. Wash Road, a County-maintained dirt road, serves as access to BLM land and extends southeasterly from SR 78 for approximately 18.4 miles to County Highway S34 (Ogilby Road), a County maintained and paved two-lane highway. Circulation flow will be provided via the proposed "Glamis Mainstreet", which will interconnect by crossing SR 78. A secondary and emergency only access point to/from the project site to SR 78 will be provided on the west side of the project site, immediately south of SR 78.

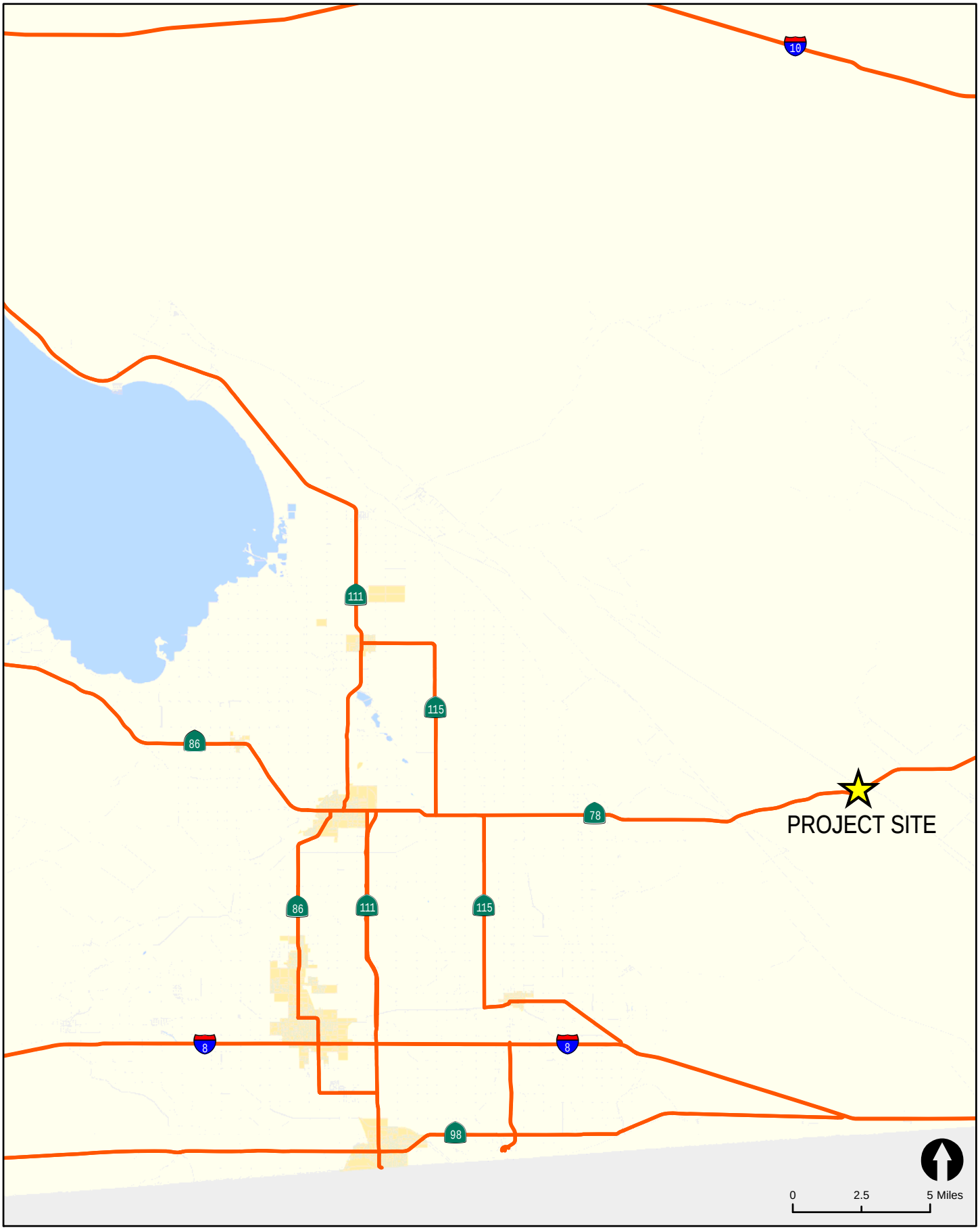

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Figure 2-1

Vicinity Map

GLAMIS SPECIFIC PLAN

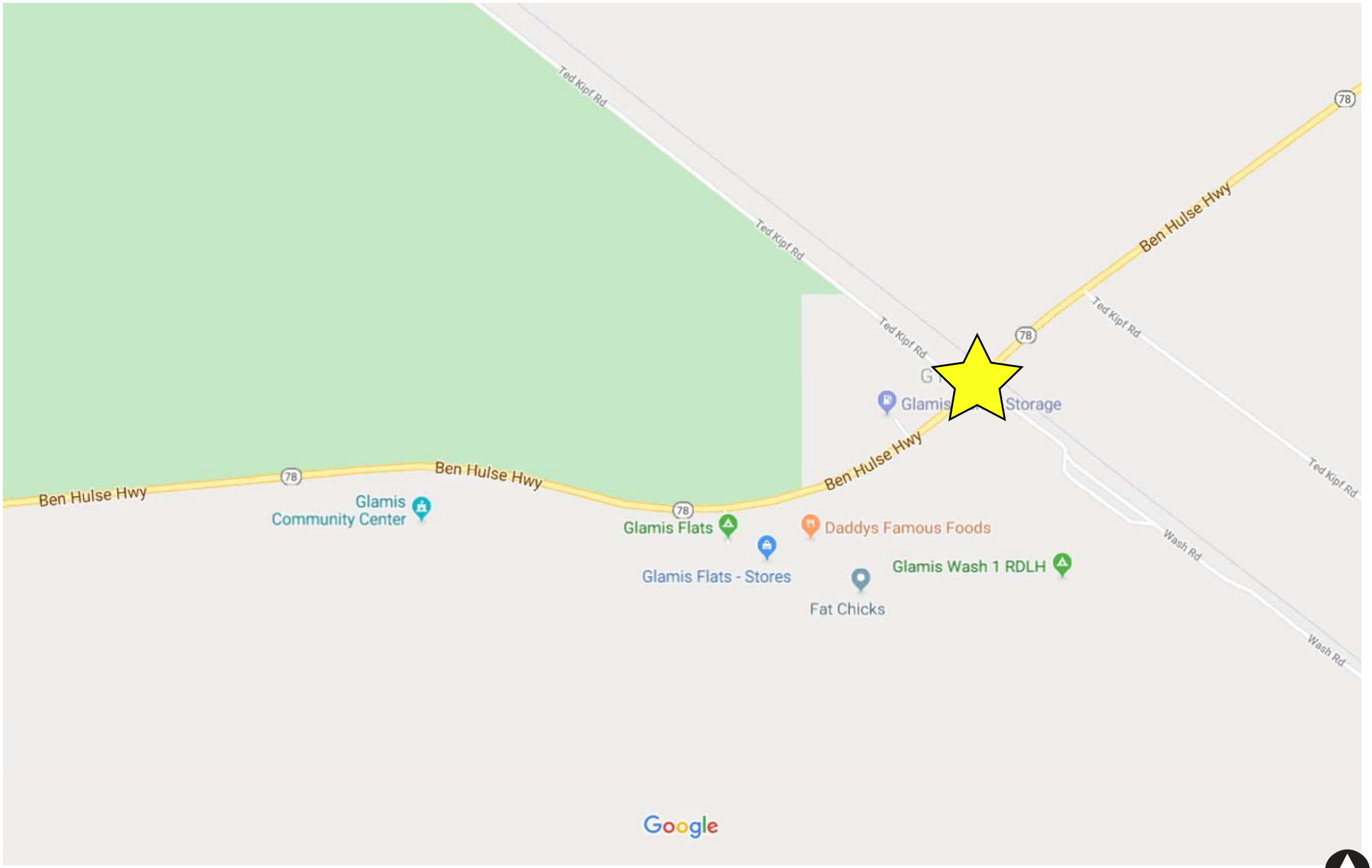

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Figure 2-2

Project Area Map

GLAMIS SPECIFIC PLAN

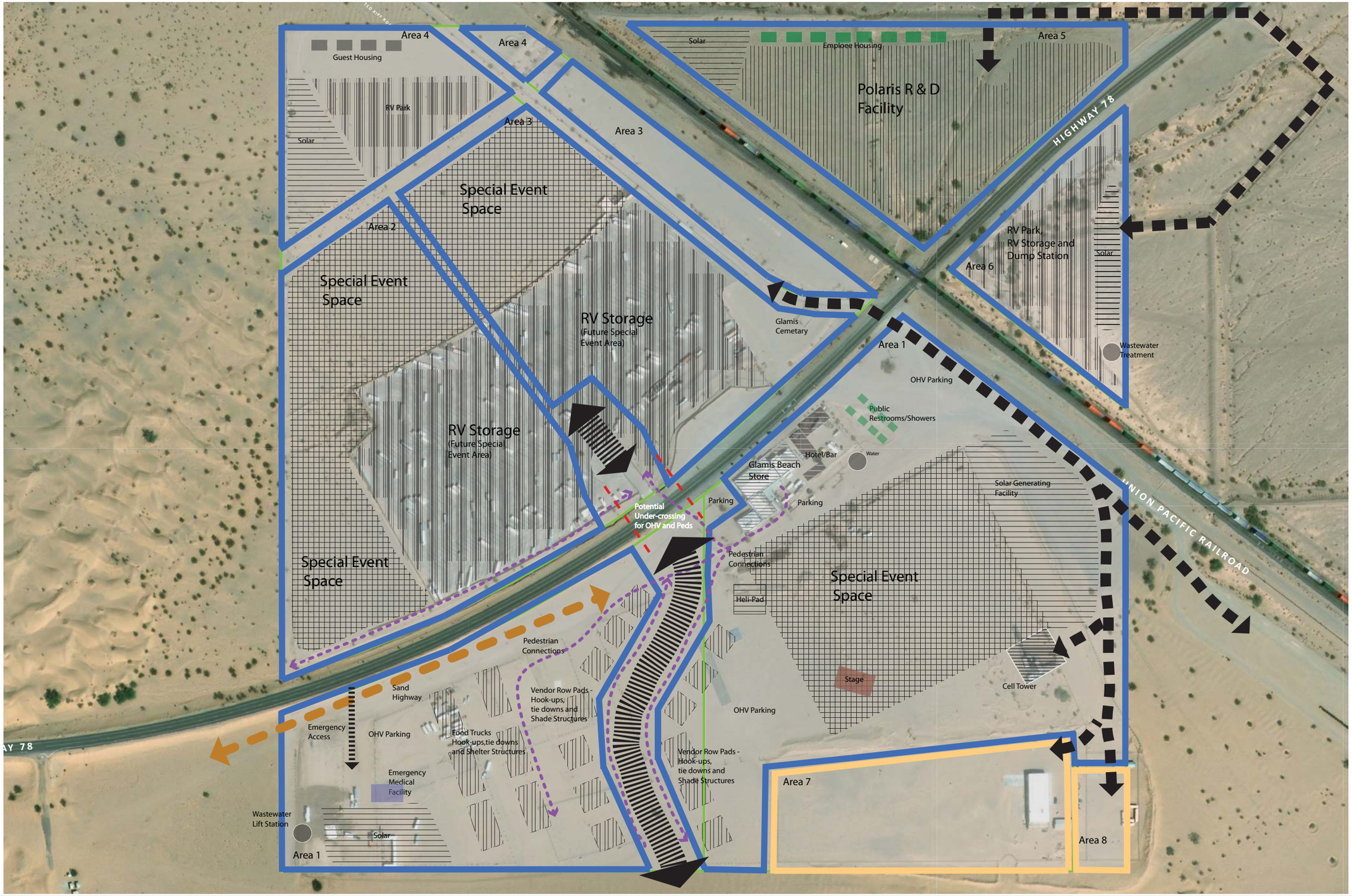

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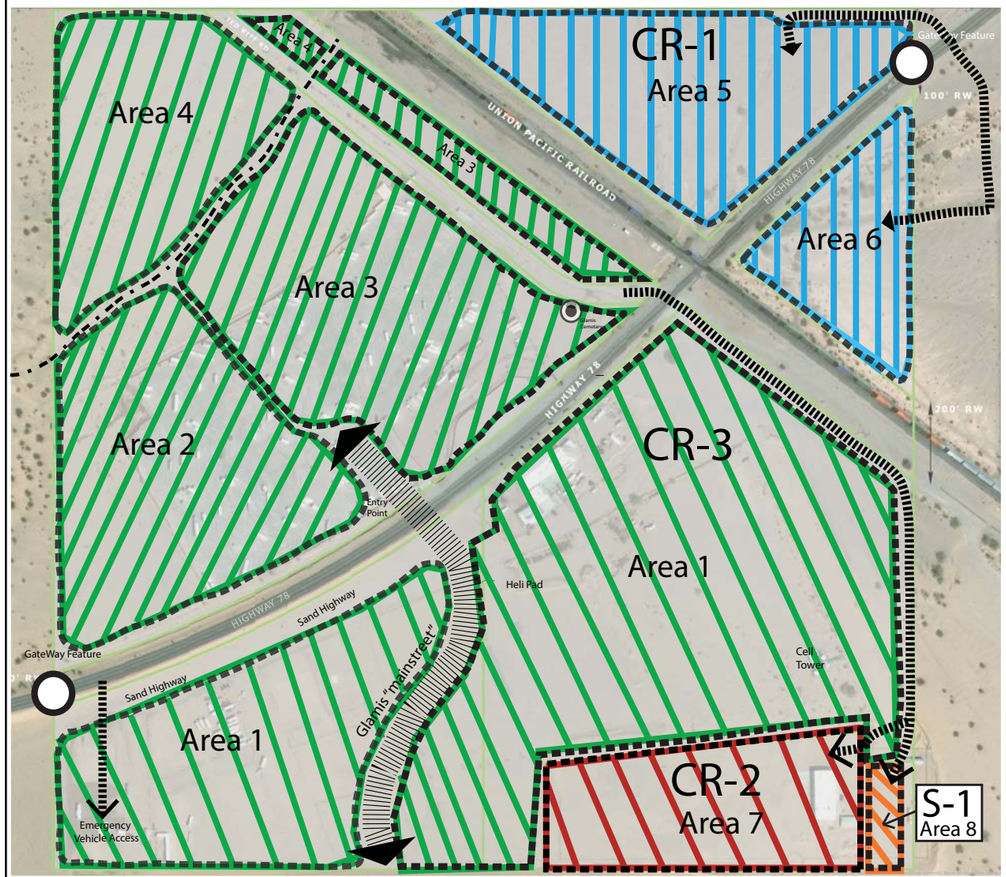
Figure 2-3

Site Plan

GLAMIS SPECIFIC PLAN



Glamis Specific Plan - Land Use Areas (Preferred)

Zoning Designation

CR-1
- -Area 5
- -Area 6

CR-2
- -Area 7

CR-3
- -Area 1
- -Area 2
- -Area 3
- -Area 4

S-1
- -Area 8

GLAMIS SPECIFIC PLAN PHASING

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Figure 2-4

Preferred Land Use Areas and Specific Plan Phasing

3.0 VEHICLE MILES TRAVELED ASSESSMENT

3.1 Background

Vehicle Miles Traveled (VMT) is a measurement of miles traveled by vehicles within a specified region and for a specified time period. VMT measures the efficiency of the transportation network. VMT is calculated based on individual vehicle trips generated and their associated trip lengths. VMT accounts for two-way (round trip) travel and is often estimated for a typical weekday to measure transportation impacts.

3.1.1 *Senate Bill 743*

In September 2013, the Governor's Office signed SB 743 into law, starting a process that fundamentally changes the way transportation impact analysis is conducted under CEQA. These changes include the elimination of auto delay, level of service (LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant impacts. The guidance identifies VMT as the most appropriate CEQA transportation metric, along with the elimination of Auto Delay/LOS for CEQA purposes statewide. The justification for this paradigm shift is that Auto Delay/LOS impacts lead to improvements that increase roadway capacity and therefore induce more traffic and greenhouse gas emissions.

In December 2018, after over five years of stakeholder-driven development, the California Natural Resource Agency certified and adopted the CEQA Statute. As of July 1, 2020, the VMT guidelines are applicable statewide.

3.2 VMT Assessment

The County of Imperial has not yet formally developed draft guidelines or adopted significance criteria and technical methodologies for VMT analysis. Therefore, LLG utilized guidance provided in the Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December, 2018, and ITE's *Guidelines for Transportation Impact Studies in the San Diego Region*, May, 2019

According to the ITE guidelines, it is recommended that local-serving retail projects be presumed to have less than significant VMT impacts and regional-serving retail projects be presumed to have significant VMT impacts if they increase VMT above the level that would occur for conditions without the project. As noted in OPR's technical advisory, "*by adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact*."

While the Project site is not located in an urban area, the primary objective of the Project is to formalize the site and provide services and amenities that patrons of the dunes would otherwise have to drive long distances to access. This includes food services, repair services, and retail services. The Project's proposed land uses are intended to serve patrons of the dunes and will not operate year-round due to the long distance from population bases and the extreme heat.

Therefore, the OPR guidance pertaining to locally serving retail projects is applicable to this Project. The Project land uses will improve service-destination proximity, shorten trips, and reduce VMT. As such, the Project is presumed to have a less-than-significant transportation impact and does not require a detailed VMT analysis.

4.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the project area. ***Figure 4–1*** depicts the existing conditions, including intersections and lane configurations.

4.1 Existing Street Network

The following is a description of the existing street network in the study area.

SR 78 is classified as a Major Arterial on the City of Brawley Circulation Element. Within the Project Study area, SR 78 is constructed as a four-lane undivided roadway west of Best Avenue / Old Highway 111 and as a two-lane undivided roadway east of Best Avenue / Old Highway 111, through the Project area. Bike lanes and bus stops are not provided and the posted speed limit is 45 mph. Curbside parking is prohibited along both sides of the roadway.

Best Avenue / Old Highway 111 is classified as a Major Arterial on the City of Brawley Circulation Element. Within the Project study area Best Avenue / Old Highway 111 is constructed as a four-lane divided roadway north of Main Street (SR 78), and as a two-lane undivided roadway south of Main Street (SR 78). Bike lanes and bus stops are not provided and the posted speed limit ranges from 40-50 mph. Curbside parking is prohibited along both sides of the roadway.

SR 111 is classified as an Expressway on the City of Brawley Circulation Element. It is a north-south four-lane divided roadway. Bike lanes or bus stops are not provided and the posted speed limit ranges from55 to 60 mph. Curbside parking is prohibited along both sides of the roadway.

SR-115 is an east-west two-lane undivided state highway within the study area and per the County of Imperial Circulation Element is classified as a Major Collector. SR-The posted speed limit is 45 mph. Curbside parking is prohibited along the highway. No bicycle facilities currently exist.

4.2 Existing Traffic Volumes

Existing Weekday and Weekend PM (5-7 PM) peak hour turning movement counts for the study area intersections were conducted in October / November 2019. The counts were conducted over the Halloween weekend (Thursday October 31– Sunday November 3), which is one of the busiest times of the year at the dunes. Traffic volumes are much lower during most of the year and therefore this analysis is conservative.

Daily traffic counts along Gecko Road, Osborne Park Road, Glamis Flats Road, and Wash Road were also conducted at the same time in order to assist in estimating the GSP's trip distribution. These four (4) roadways provide direct access to the campgrounds for the majority of the visitors to the northern dunes.

Average daily traffic (ADT) counts along SR 78 were obtained from the Caltrans 2017 Traffic Volumes document, which provided the most recent data available at the time this report was prepared. Based on previous traffic studies conducted in the area and discussions with Caltrans, the

peak 2017 volumes were adjusted upward by 2% per year for two years to estimate the 2019 baseline volumes.

Figure 4–2 depicts the Existing Traffic Volumes. ***Appendix B*** contains the manual count sheets.

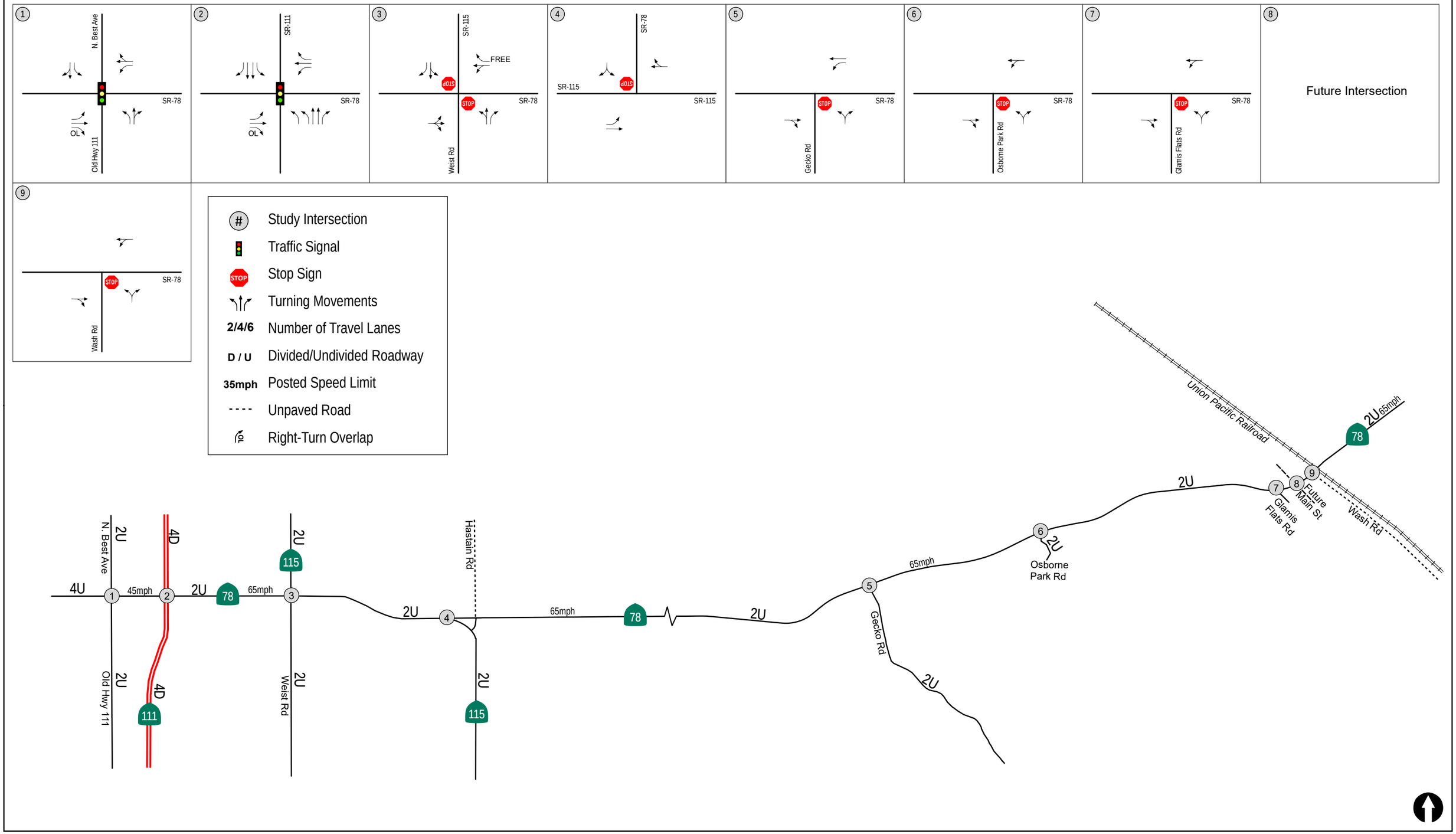

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Figure 4-1

Existing Conditions Diagram

Glamis Specific Plan

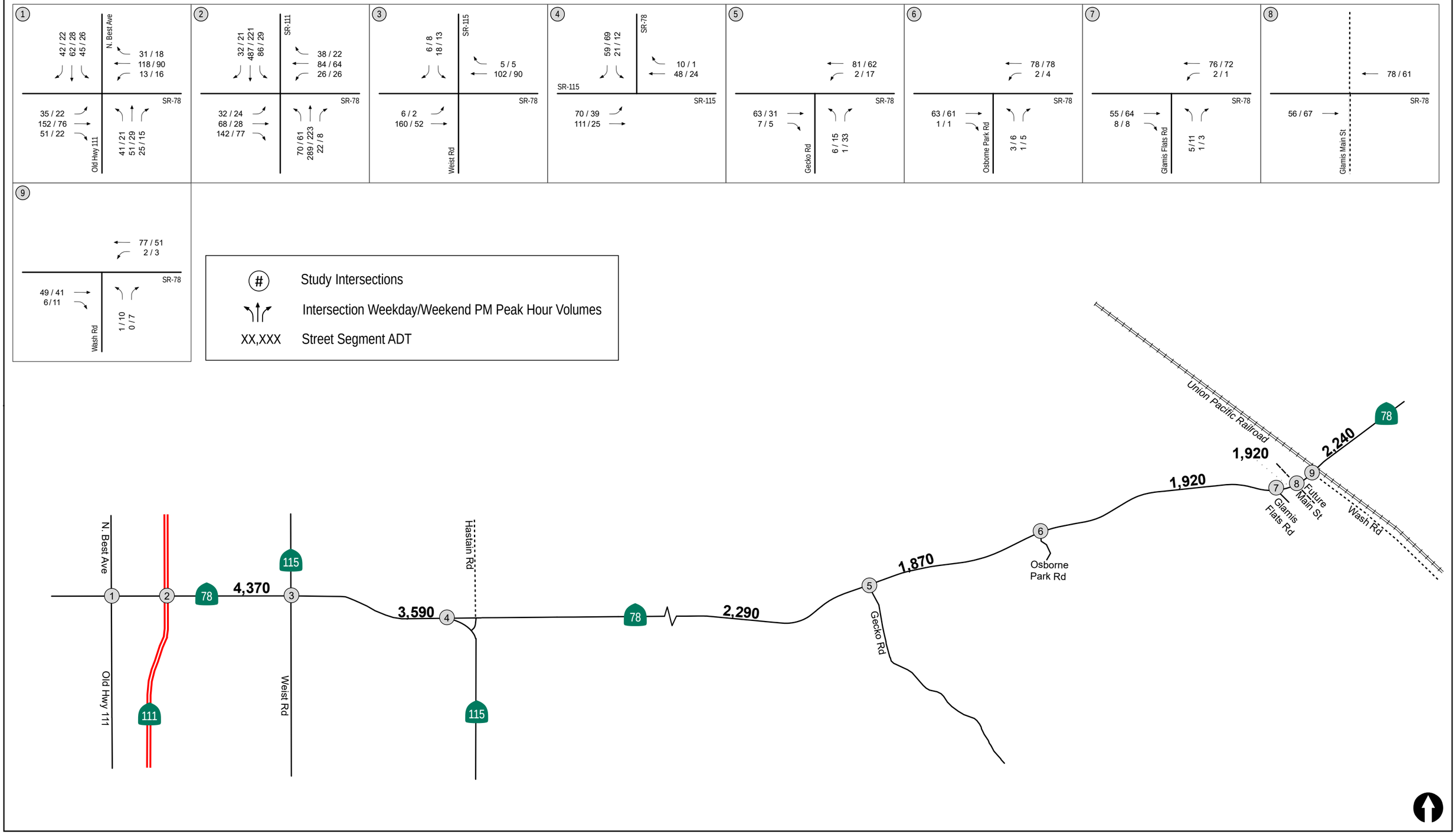

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Figure 4-2

Existing Traffic Volumes

Glamis Specific Plan

5.0 PROJECT STUDY AREA, ANALYSIS SCENARIOS AND METHODOLOGY

5.1 Project Study Area

The following intersections and segments were analyzed in this study and were chosen since they will carry the majority of Project traffic.

Intersections:

1. SR 78 / Old Highway 111/ Best Avenue
2. SR 78 / SR 111
3. SR 78 / SR 115 (west)
4. SR 78 / SR 115 (east)
5. SR 78 / Gecko Road
6. SR 78 / Osborne Park Road
7. SR 78 / Glamis Flats Road
8. SR 78 / Glamis Mainstreet (future access)
9. SR 78 / Wash Road

Segments:

SR 78:

- Old Highway 111/ Best Avenue to SR 115 (west)
- SR 115 (west) to SR 115 (east)
- SR 115 (east) to Gecko Road
- Gecko Road to Osborne Park Road
- Osborne Park Road to Glamis Flats Road
- Glamis Flats Road to Glamis Mainstreet (future access)
- Glamis Mainstreet (future access) to Wash Road
- East of Wash Road

5.2 Analysis Scenarios

The following scenarios are analyzed in this report:

- Existing
- Existing + Project
- Existing + Project + Cumulative Projects
- Year 2050
- Year 2050 + Project

Analysis of weekday and weekend peak hour conditions (5:00-7:00 PM) was conducted for the analysis scenarios listed above since these are the times where Project related traffic is expected to be most prevalent. An analysis of daily traffic was also conducted.

5.3 Analysis Methodology

The operations of the project area intersections and segments are characterized using the concept of "Level of Service" (LOS). LOS is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS provides an index to the operational qualities of a roadway segment or an intersection. LOS designations range from A through F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

Table 5–1 summarizes the description for each level of service. ***Table 5–2*** depicts the criteria, which are based on the average control delay for any particular minor movement (unsignalized intersections).

5.3.1 *Heavy Vehicle Rate*

SR 78 is a goods movement route connecting California with Arizona and Nevada. As such, a greater than average percentage of the vehicles traveling on SR 78 are multi-axle and considered to be "heavy vehicles". A 30.8% heavy-vehicle rate was recorded on SR 78 per the *2018 Truck Traffic: Annual Average Daily Truck Traffic* published on the Caltrans Traffic Census Program website. This rate was used in the Synchro traffic analysis for the Project instead of the default 2%.

5.3.2 *Signalized Intersections*

For signalized intersections, level of service criteria is stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

5.3.3 *Unsignalized Intersections*

For unsignalized intersections, level of service is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole.

TABLE 5–1
INTERSECTION LEVEL OF SERVICE DESCRIPTIONS

Level of Service	Description
A	Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Generally, occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	Generally, results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Generally, results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	Considered to be unacceptable to most drivers. This condition often occurs with over saturation i.e. when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume-to-capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

TABLE 5–2
INTERSECTION LOS & DELAY RANGES

LOS	Delay (seconds/vehicle)	
	Signalized Intersections	**Unsignalized Intersections**
A	≤ 10.0	≤ 10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	≥ 80.1	≥ 50.1

Source: Highway Capacity Manual

5.3.4 *Street Segments*

Street segments were analyzed based upon the comparison of ADT to the County of Imperial *Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT)* table (see ***Table 5–3*** below). *Table 5–3* provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The segment capacities were originally developed based on observations of weekday traffic volumes, and therefore, only an analysis of weekday conditions was conducted. Segment analysis is a comparison of ADT volumes and an approximate daily capacity on the subject roadway.

TABLE 5–3
IMPERIAL COUNTY STANDARD STREET CLASSIFICATION AVERAGE DAILY VEHICLE TRIPS

Road		Level of Service W/ADT*				
Class	**X-Section**	**A**	**B**	**C**	**D**	**E**
Expressway	128 / 210	30,000	42,000	60,000	70,000	80,000
Prime Arterial	106 / 136	22,200	37,000	44,600	50,000	57,000
Minor Arterial	82 / 102	14,800	24,700	29,600	33,400	37,000
Major Collector (Collector)	64 / 84	13,700	22,800	27,400	30,800	34,200
Minor Collector (Local Collector)	40 / 70	1,900	4,100	7,100	10,900	16,200
Residential Street	40 / 60	*	*	< 1,500	*	*
Residential Cul-de-Sac / Loop Street	40/60	*	*	< 1,500	*	*
Industrial Collector	76 / 96	5,000	10,000	14,000	17,000	20,000
Industrial Local Street	44 / 64	2,500	5,000	7,000	8,500	10,000

* Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

6.0 LEVEL OF SERVICE STANDARDS

The County of Imperial does not have published level of service (LOS) standards. However, the County General Plan does state that the LOS goal for intersections and roadway segments is to operate at LOS C or better. Therefore, if an intersection or segment degrades from LOS C or better to LOS D or worse with the addition of project traffic, the effect is considered substantial. If the location operates at LOS D or worse with and without project traffic, the effect is considered substantial if the project causes the intersection delta to increase by more than two (2) seconds, or the V/C ratio to increase by more than 0.02. These thresholds are summarized below in ***Table 6-1***, and are consistent with those used in the City of El Centro and the County of Imperial in numerous traffic studies.

TABLE 6–1
TRAFFIC EFFECT THRESHOLDS

Level of Service with Project [a]	Allowable Increase Due to Project Effect [b]					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
D, E & F (*or ramp meter delays above 15 minutes*)	0.01	1	0.02	1	2	2[c]

Footnotes:

a. All level of service measurements are based upon HCM procedures for peak-hour conditions. However, V/C ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume. The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped or not densely developed locations per jurisdiction definitions). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

b. If a proposed project's traffic causes the values shown in the table to be exceeded, the effects are deemed to be substantial. These changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible improvements that will maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note a above), or if the project adds a significant amount of peak hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for improving substantial effect changes.

c. The allowable increase in delay at a ramp meter with more than 15 minutes of delay and freeway LOS E is 2 minutes and at LOS F is 1 minute.

General Notes:

1. V/C = Volume to Capacity Ratio
2. Speed = Arterial speed measured in miles per hour
3. Delay = Average stopped delay per vehicle measured in seconds for intersections, or minutes for ramp meters.
4. LOS = Level of Service

7.0 ANALYSIS OF EXISTING CONDITIONS

7.1 Peak Hour Intersection Levels of Service

Table 7–1 summarizes the existing intersection operations. As seen in *Table 7–1*, all study area intersections are calculated to currently operate at LOS C or better, with most locations operating at LOS A.

The Existing intersection analysis worksheets are included in ***Appendix C***.

7.2 Daily Street Segment Levels of Service

Table 7–2 summarizes the existing segment operations. As seen in *Table 7–2*, all study area segments are calculated to currently operate at LOS C or better.

TABLE 7–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Delay [a]	LOS [b]
1. SR 78 / Old Highway 111 / Best Avenue	Signal	Wkday	15.5	B
		Wkend	15.3	B
2. SR 78 / SR 111	Signal	Wkday	24.8	C
		Wkend	21.2	C
3. SR 78 / SR 115 (west)	MSSC[c]	Wkday	11.8	B
		Wkend	10.0	A
4. SR 78 / SR 115 (east)	MSSC	Wkday	10.6	B
		Wkend	9.3	A
5. SR 78 / Gecko Road	MSSC	Wkday	10.0	A
		Wkend	9.4	A
6. SR 78 / Osborne Flats Road	MSSC	Wkday	9.8	A
		Wkend	9.4	A
7. SR 78 / Glamis Flats Road	MSSC	Wkday	9.8	A
		Wkend	9.7	A
8. SR 78 / Glamis Mainstreet (future access)	-[d]	Wkday	-	-
		Wkend	-	-
9. SR 78 / Wash Road	Yield	Wkday	9.9	A
		Wkend	9.4	A

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. MSSC = Minor Street Stop-Controlled intersection. Worst-case delay reported.
d. Intersection does not exist under existing conditions.

General Notes:
1. Wkday= Weekday PM Peak Hour (5:00-7:00 PM)
2. Wkend= Weekend PM Peak Hour (5:00-7:00 PM)

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 7–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	LOS E [a] Capacity	ADT [b]	LOS [c]	V/C [d]
SR 78				
Old Highway 111 / Best Avenue to SR 115 (west)	16,200	4,370	C	0.270
SR 115 (west) to SR 115 (east)	16,200	3,590	B	0.222
SR 115 (east) to Gecko Road	16,200	2,290	B	0.141
Gecko Road to Osborne Park Road	16,200	1,870	A	0.115
Osborne Park Road to Glamis Flats Road	16,200	1,920	B	0.119
Glamis Flats Road to Glamis Mainstreet (future access)	16,200	1,920	B	0.119
Glamis Mainstreet (future access) to Wash Road	16,200	1,920	B	0.119
East of Wash Road	16,200	2,240	B	0.138

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Average Daily Traffic
c. Level of Service.
d. The Volume to Capacity ratio.

8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

8.1 Trip Generation

The primary objective of the Project is to formalize the site and provide services and amenities. The Project's proposed land uses are intended to serve the existing patrons of the dunes and will not operate year-round due to the long distance from population bases and the extreme heat.

However, in order to provide comprehensive assessment of the Project's effects to the surrounding street system, this traffic study analyzes the following specific components of the Project, which are anticipated to be developed within the first ten years:

- Restaurant Expansion: 4,000 SF
- Retail Expansion: 2,000 SF
- Service Center: Four (4) Service Bays
- Research & Development Facility: 5,000 SF
- Hotel / Motel: 20 Rooms
- Multi-Family Residential / Staff Housing: 14 Units
- RV Park: 30 Sites
- Vendor Row Expansion

Any additional future development that is not listed above and that exceeds the number of trips generated by the above uses will require a new traffic study and may require additional mitigation based on that study. All additional traffic studies will need to be submitted to the County of Imperial and Caltrans for review and approval.

Trip generation rates for the Project were based on ITE's *Trip Generation Manual (10th Edition)*. ***Table 8–1*** tabulates the total Project traffic generation. The Project is calculated to generate a total of approximately 1,245 ADT with 90 trips (49 inbound / 41 outbound) during the Weekday PM peak hour and 106 trips (56 inbound / 50 outbound) during the Weekend PM peak hour. No trip generation credits were taken to account for existing visitors to the dunes. The analysis assumes that 100% of the trips to the Project site will be new trips, not trips by existing patrons of the dunes. This is an extremely conservative approach.

8.2 Trip Distribution/Assignment

The trip distribution percentages were estimated based on the existing traffic flow patterns observed at Gecko Road, Osborne Park Road, Glamis Flats Road, and Wash Road, and the Project's proximity to regional highways / freeways in the vicinity. As noted above, the Project's proposed land uses are intended to serve the existing patrons of the dunes. These patrons are expected to access the Project site predominately via the dunes (not via SR 78) on All Terrain Vehicles (ATVs). Existing patrons of the dunes in the vicinity of the Project site mostly set up camp via one of the four main access points: Gecko Road, Osborne Park Road, Glamis Flats Road, and Wash Road. Once they pull of the

road to set up camp on the sand, their "on-road" vehicles remain primarily parked for the duration of their stay, and transportation around the Glamis dunes is by ATV on the sand, not on SR 78.

Therefore, the trip distribution assumes 10% of the Project trips on Gecko Road, 10% on Osborne Park Road, 10% on Glamis Park Road, 15% on Glamis Mainstreet to the north, 45% on Glamis Mainstreet to the south, and 10% to Wash Road.

Figure 8-1 depicts the trip distribution. ***Figure 8-2*** depicts the assignment of project traffic and ***Figure 8-3*** depicts the Existing + Project traffic volumes.

TABLE 8–1
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour				PM Peak Hour			
		Rate[a]	Volume	Rate	In:Out Split	Volume In	Volume Out	Rate	In:Out Split	Volume In	Volume Out
Restaurant Expansion	4 KSF	112.18 /KSF	449	9.94	55:45	22	18	9.77	62:38	24	15
Retail Expansion	2 KSF	37.75 /KSF	76	0.94	50:50	1	1	3.81	48:52	4	4
Service Center[b]	4 Bays	12.48 /Bay	50	1.52	68:32	4	2	2.17	32:68	3	6
R&D Facility[c]	5 KSF	16.19 /KSF	81	1.92	83:17	8	2	2.45	32:68	4	8
Hotel / Motel	20 Rooms	8.36 /Room	167	0.47	59:41	6	3	0.60	51:49	6	6
Multi-Family Residential / Staff Housing	14 DU	7.32 /DU	102	0.46	23:77	1	5	0.56	63:37	5	3
RV Park[d]	30 Sites	4.00 /Site	120	0.21	36:64	2	4	0.27	65:35	5	3
Vendors[e]	-	-	200			5	5	-		5	5
Total Trips			**1,245**			**49**	**41**			**56**	**50**

Footnotes:

a. Trip generation rates are based on the 10th edition of the Trip Generation Manual, Institute of Transportation Engineers (ITE).
b. Weekday ADT rate not provided by ITE. Therefore, the Saturday ADT rate of 12.48 trips per service bay was used.
c. "Small Office Building" Rate assumed.
d. Weekday ADT rate not provided by ITE. Therefore, the SANDAG ADT rate of 4 trips per site was used.
e. No additional vendors are expected as a part of the Project. However, in order to provide a conservative trip generation calculation, an additional 200 ADT was assumed.

General Notes:

The trip generation calculated in *Table 8-1* only includes trips for potential uses for the first ten-years of development. Any additional future development that is not listed above and that exceeds the number of trips generated by the above uses will require a new traffic study and may require additional mitigation based on that study. All additional traffic studies will need to be submitted to the County of Imperial and Caltrans for review and approval.

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Figure 8-1

Project Traffic Distribution

Glamis Specific Plan

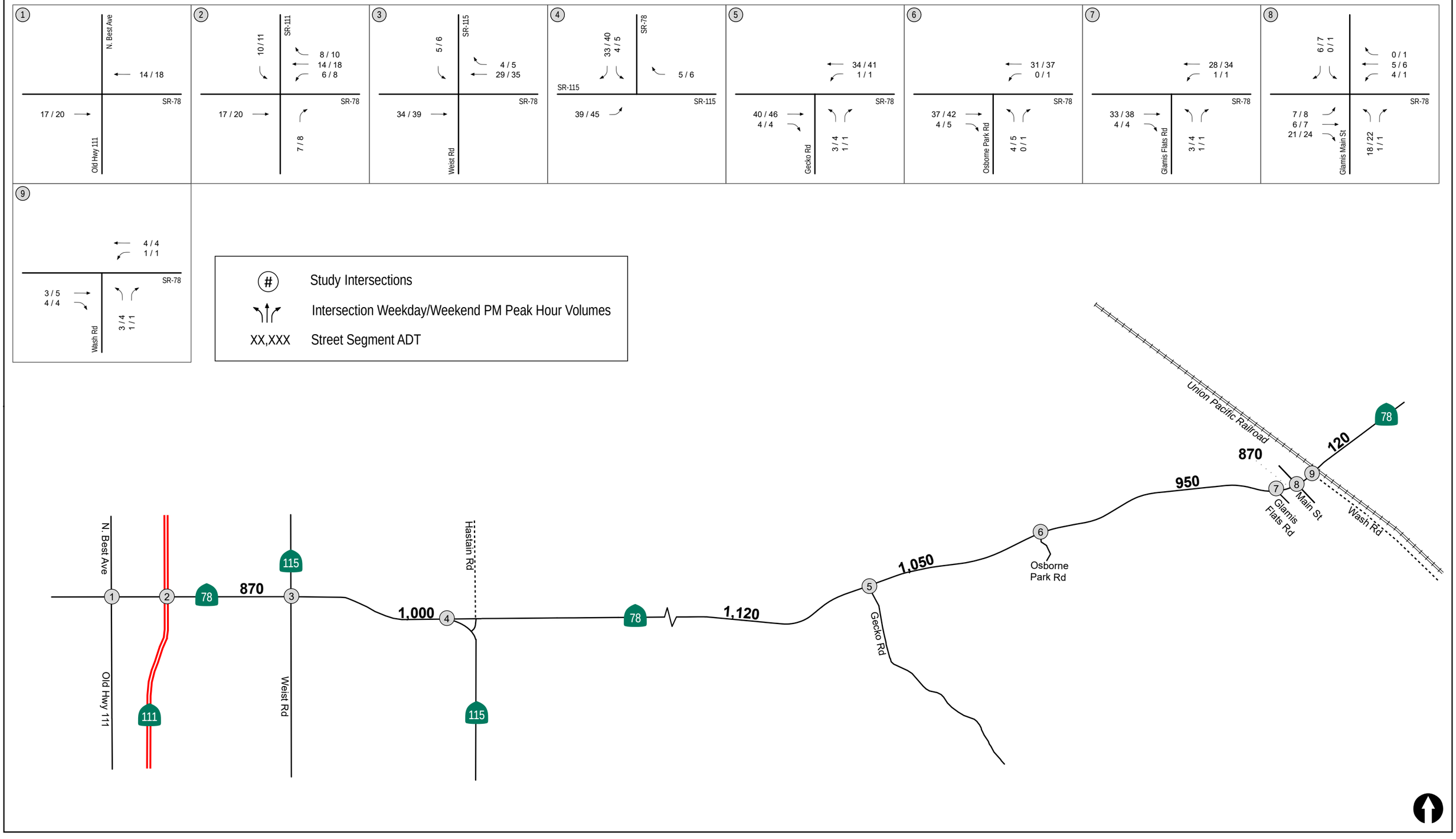

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Figure 8-2

Project Traffic Volumes

Glamis Specific Plan

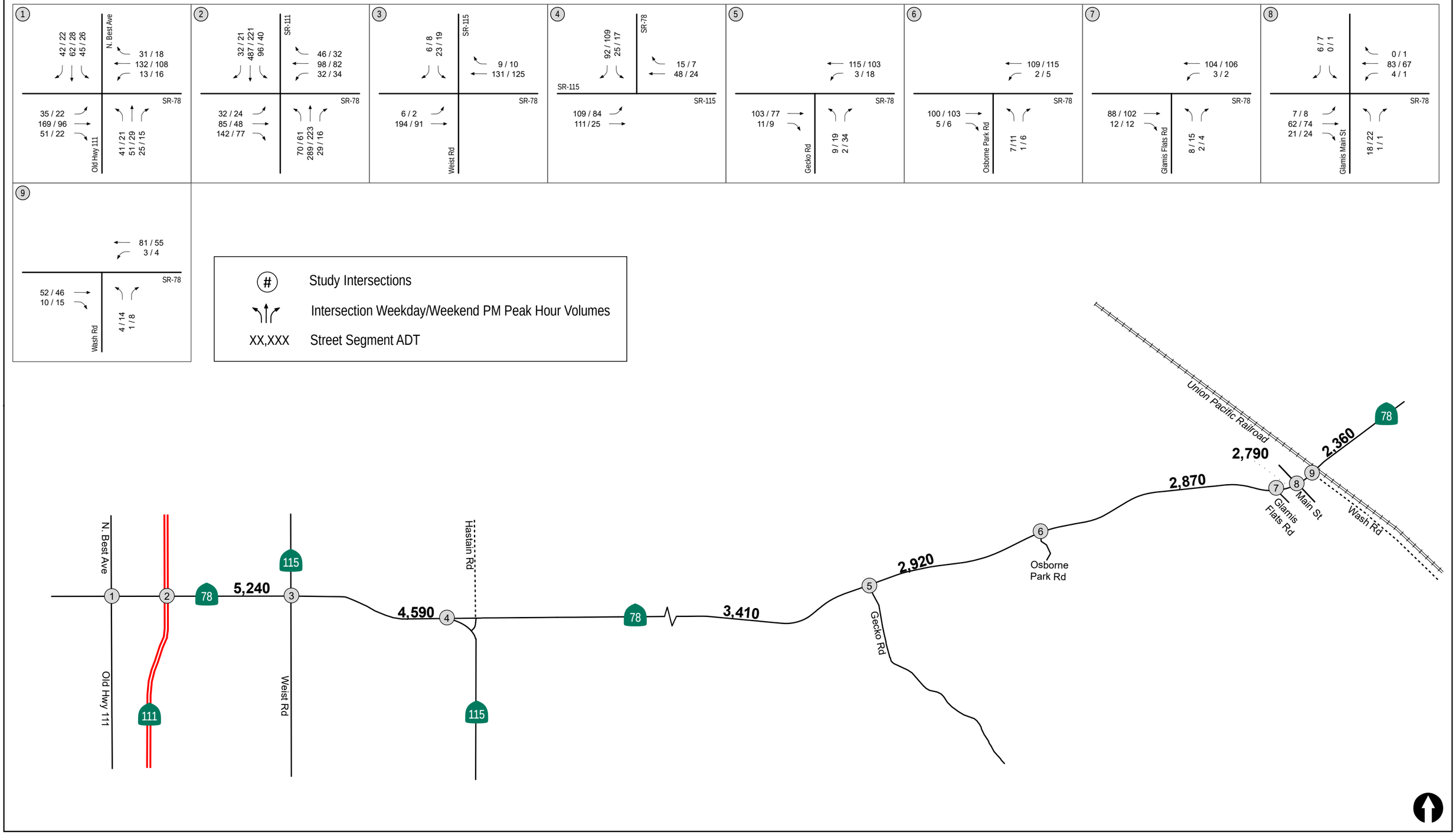

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Figure 8-3

Existing + Project Traffic Volumes

Glamis Specific Plan

9.0 CUMULATIVE PROJECTS

No specific cumulative projects were identified in the Project vicinity. Therefore, based on previous traffic studies conducted in the area and discussions with Caltrans, the 2019 volumes were adjusted upward by 2% per year for six (6) years to estimate Year 2025 with Cumulative traffic volumes. This time frame represents the approximate Opening Year of the Project.

Figure 9-1 depicts the Cumulative only trips and ***Figure 9-2*** depicts the Existing + Project + Cumulative Project trips.

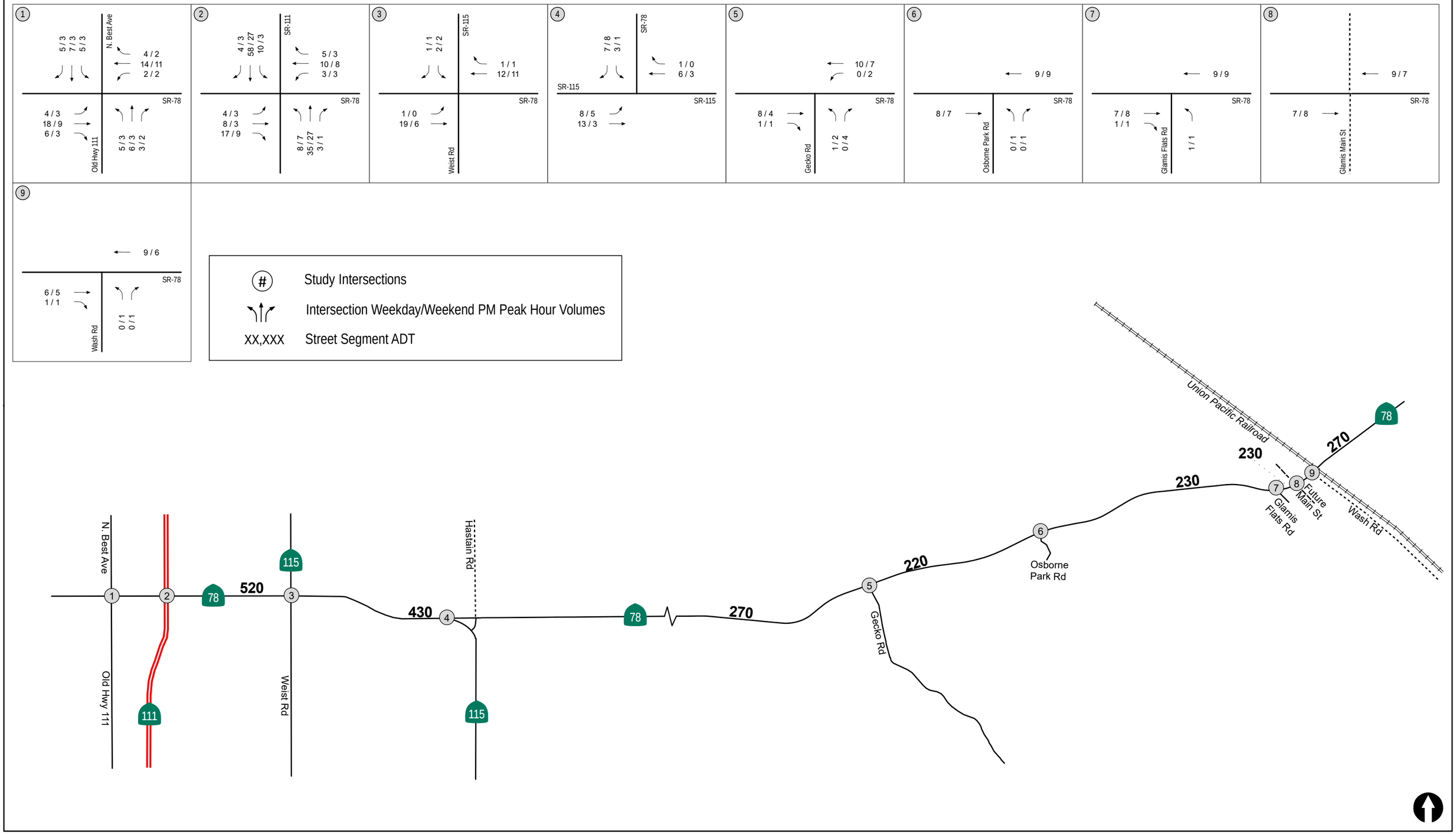

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Figure 9-1

Total Cumulative Traffic Volumes

Glamis Specific Plan

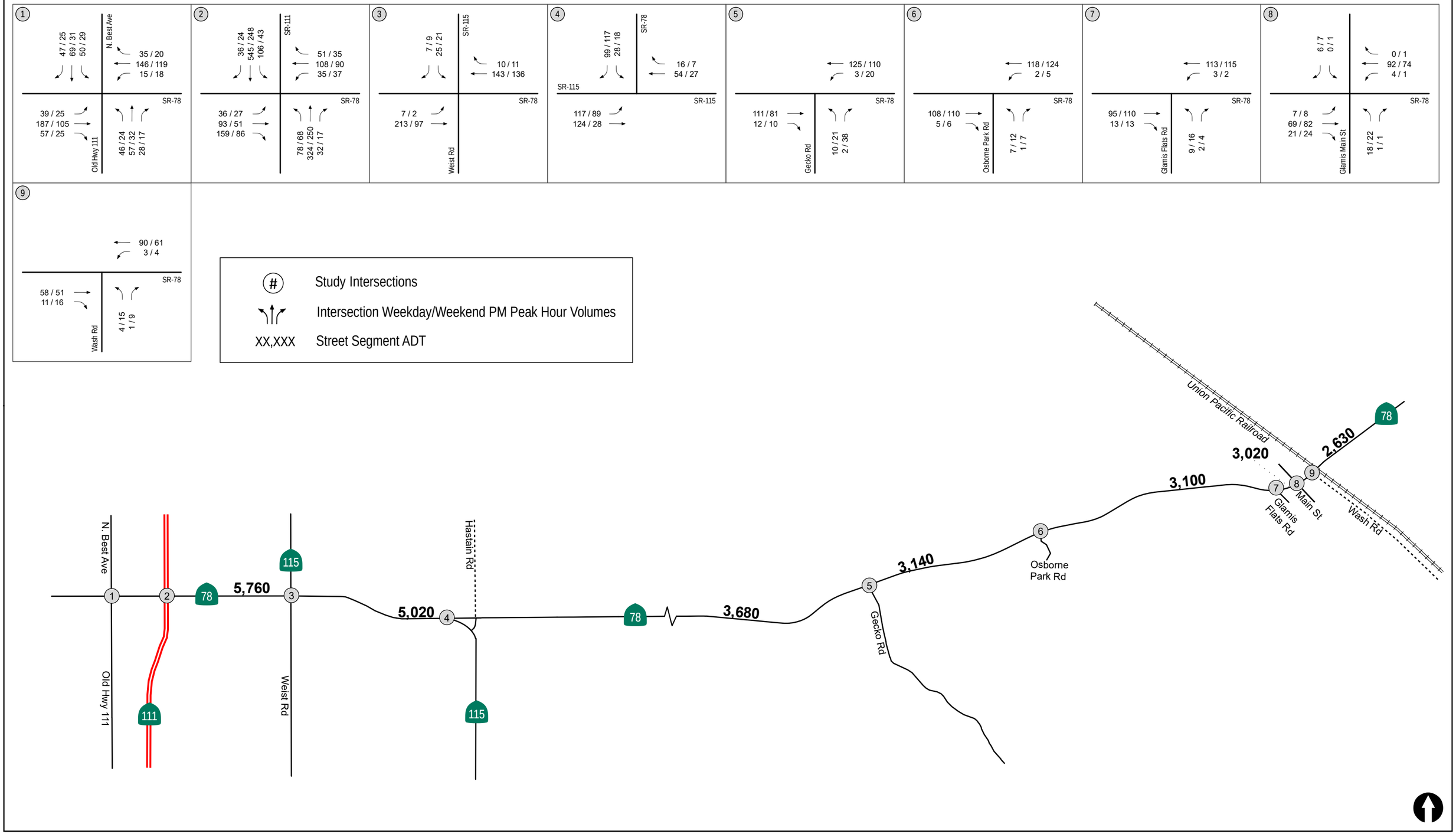

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Figure 9-2

Existing + Project + Cumulative Projects Traffic Volumes

Glamis Specific Plan

10.0 ANALYSIS OF NEAR-TERM SCENARIOS

10.1 Existing + Project

10.1.1 *Intersection Analysis*

Table 10–1 summarizes the Existing + Project intersection operations. As seen in *Table 10–1*, with the addition of Project traffic, all study area intersections are calculated to continue to operate at LOS C or better. No substantial effects are identified.

The Existing + Project intersection analysis worksheets are included in ***Appendix D***.

10.1.2 *Segment Operations*

Table 10–2 summarizes the Existing + Project segment operations. As seen in *Table 10–2*, with the addition of Project traffic, the study area segments are calculated to continue to operate at LOS C or better. No substantial effects are identified.

10.2 Existing + Project + Cumulative Projects

10.2.1 *Intersection Analysis*

Table 10–1 summarizes the Existing + Project + Cumulative projects intersection operations. As seen in *Table 10–1,* with the addition of Project traffic and cumulative projects traffic, all study area intersections are calculated to continue to operate at LOS C or better. No substantial effects are identified.

The Existing + Project intersection + Cumulative projects analysis worksheets are included in ***Appendix E***.

10.2.2 *Segment Operations*

Table 10–2 summarizes the Existing + Project + Cumulative projects segment operations. As seen in *Table 10–2*, with the addition of Project traffic and cumulative projects traffic, the study area segments are calculated to continue to operate at LOS C or better. No substantial effects are identified.

TABLE 10–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Existing + Project + Cumulative Projects		Δ[c]	Effect Type
			Delay[a]	LOS[b]	Delay	LOS	Delay	LOS		
1. SR 78 / Old Highway 111 / Best Avenue	Signal	Wkday	15.5	B	15.6	B	16.1	B	0.6	None
		Wkend	15.3	B	15.3	B	15.3	B	0.0	None
2. SR 78 / SR 111	Signal	Wkday	24.8	C	27.9	C	30.4	C	5.6	None
		Wkend	21.2	C	21.7	C	22.2	C	1.0	None
3. SR 78 / SR 115 (west)	MSSC[d]	Wkday	11.8	B	12.8	B	13.5	B	1.7	None
		Wkend	10.0	A	10.7	B	10.9	B	0.9	None
4. SR 78 / SR 115 (east)	MSSC	Wkday	10.6	B	11.4	B	11.9	B	1.3	None
		Wkend	9.3	A	9.7	A	9.8	A	0.5	None
5. SR 78 / Gecko Road	MSSC	Wkday	10.0	A	10.8	B	11.1	B	1.1	None
		Wkend	9.4	A	10.1	B	10.2	B	0.8	None
6. SR 78 / Osborne Park Road	MSSC	Wkday	9.8	A	10.6	B	10.8	B	1.0	None
		Wkend	9.4	A	10.0	A	10.1	B	0.7	None
7. SR 78 / Glamis Flats Road	MSSC	Wkday	9.8	A	10.4	B	10.6	B	0.8	None
		Wkend	9.7	A	10.3	B	10.5	B	0.8	None
8. SR 78 / Glamis Mainstreet (future	MSSC	Wkday	-[e]	-	10.2	B	10.4	B	-	None
		Wkend	-	-	10.2	B	10.4	B	-	None
9. SR 78 / Wash Road	MSSC	Wkday	9.9	A	9.9	A	10.0	A	0.1	None
		Wkend	9.4	A	9.5	A	9.6	A	0.2	None

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes an increase in delay due to project.
d. MSSC = Minor Street Stop-Controlled intersection. Worst-case delay reported.
e. Intersection does not exist under existing conditions.

General Notes:

1. Wkday= Weekday PM Peak Hour (5:00-7:00 PM)
2. Wkend= Weekend PM Peak Hour (5:00-7:00 PM)

SIGNALIZED		UNSIGNALIZED	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 10–2
NEAR-TERM STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E)[a]	Existing			Existing + Project			Existing + Project + Cumulative Projects			Δ[e]	Effect Type
		ADT[b]	LOS[c]	V/C[d]	ADT	LOS	V/C	ADT	LOS	V/C		
SR 78												
Old Highway 111 / Best Avenue to SR 115 (west)	16,200	4,370	C	0.270	5,240	C	0.323	5,760	C	0.356	0.086	None
SR 115 (west) to SR 115 (east)	16,200	3,590	B	0.222	4,590	C	0.283	5,020	C	0.310	0.088	None
SR 115 (east) to Gecko Road	16,200	2,290	B	0.141	3,410	B	0.210	3,680	B	0.227	0.086	None
Gecko Road to Osborne Park Road	16,200	1,870	A	0.115	2,920	B	0.180	3,140	B	0.194	0.078	None
Osborne Park Road to Glamis Flats Road	16,200	1,920	B	0.119	2,870	B	0.177	3,100	B	0.191	0.073	None
Glamis Flats Road to Glamis Mainstreet (future access)	16,200	1,920	B	0.119	2,790	B	0.172	3,020	B	0.186	0.068	None
Glamis Mainstreet (future access) to Wash Road	16,200	1,920	B	0.119	2,120	B	0.131	2,350	B	0.145	0.027	None
East of Wash Road	16,200	2,240	B	0.138	2,360	B	0.146	2,630	B	0.162	0.024	None

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Average Daily Traffic
c. Level of Service
d. The Volume to Capacity ratio.
e. Increase in V/C ratio due to the addition of project traffic.

11.0 ANALYSIS OF LONG-TERM SCENARIOS

11.1 Year 2050 Traffic Volumes

Based on previous traffic studies conducted in the area and discussions with Caltrans, long-term volumes were estimated by applying a growth rate of 1.25% per year for 31 years (2019 through 2050 for a total of 38.75%) to the existing volumes.

Figure 11–1 depicts the long-term Year 2050 Traffic Volumes, and ***Figure 11–2*** depicts the Year 2050 + Project Traffic Volumes.

11.2 Year 2050 Segment Operations

Table 11–1 summarizes the Year 2050 segment operations. As seen in *Table 11–1*, all study area segments are calculated operate at LOS C or better.

11.3 Year 2050 + Project Segment Operations

Table 11–1 summarizes the Year 2050 + Project segment operations. As seen in *Table 11–1*, with the addition of Project traffic, all study area segments are calculated to continue to operate at LOS C or better.

TABLE 11–1
YEAR 2050 STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS E)[a]	Existing		Year 2050			Year 2050 + Project			Impact Type
		ADT [b]	LOS [c]	ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C	
SR 78										
Old Highway 111 / Best Avenue to SR 115 (west)	16,200	4,370	C	6,060	C	0.374	6,930	C	0.428	None
SR 115 (west) to SR 115 (east)	16,200	3,590	B	4,980	C	0.307	5,980	C	0.369	None
SR 115 (east) to Gecko Road	16,200	2,290	B	3,180	B	0.196	4,300	C	0.265	None
Gecko Road to Osborne Park Road	16,200	1,870	A	2,590	B	0.160	3,640	B	0.225	None
Osborne Park Road to Glamis Flats Road	16,200	1,920	B	2,660	B	0.164	3,610	B	0.223	None
Glamis Flats Road to Glamis Mainstreet (future access)	16,200	1,920	B	2,660	B	0.164	3,530	B	0.218	None
Glamis Mainstreet (future access) to Wash Road	16,200	1,920	B	2,660	B	0.164	2,860	B	0.177	None
East of Wash Road	16,200	2,240	B	3,110	B	0.192	3,230	B	0.199	None

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Average Daily Traffic
c. Level of Service
d. The Volume to Capacity ratio.

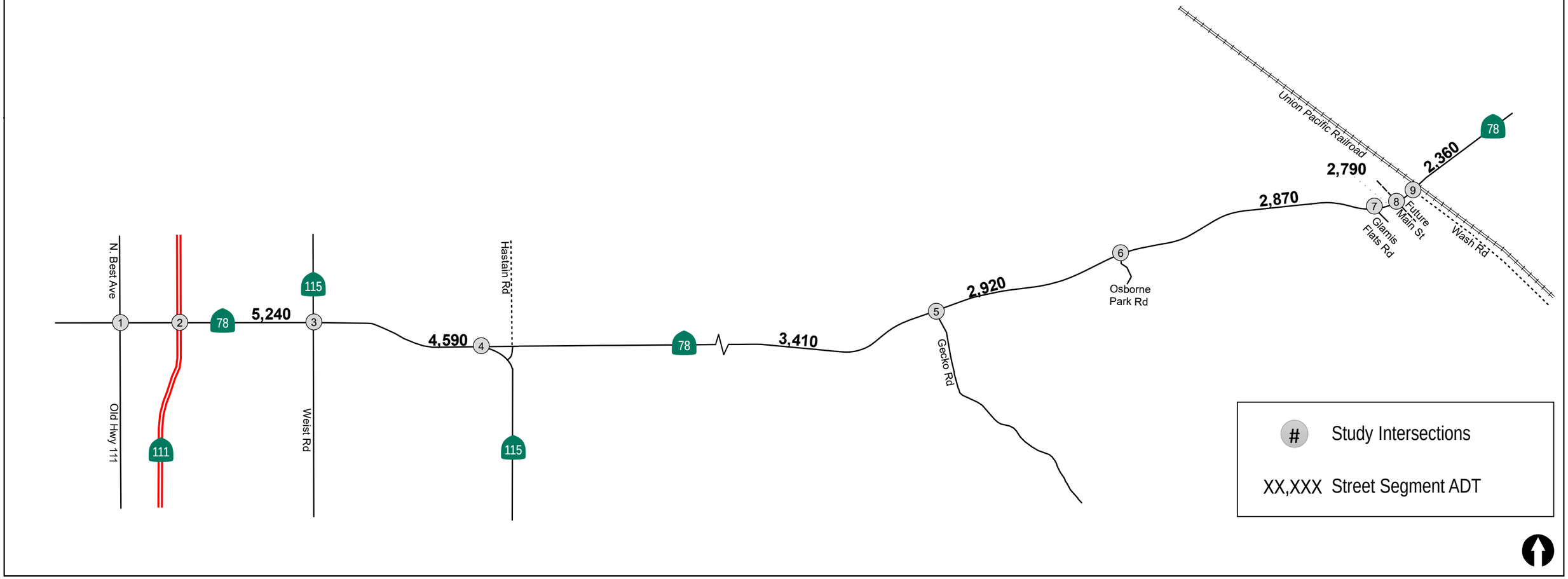

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Figure 11-1

Year 2050 Traffic Volumes

Glamis Specific Plan

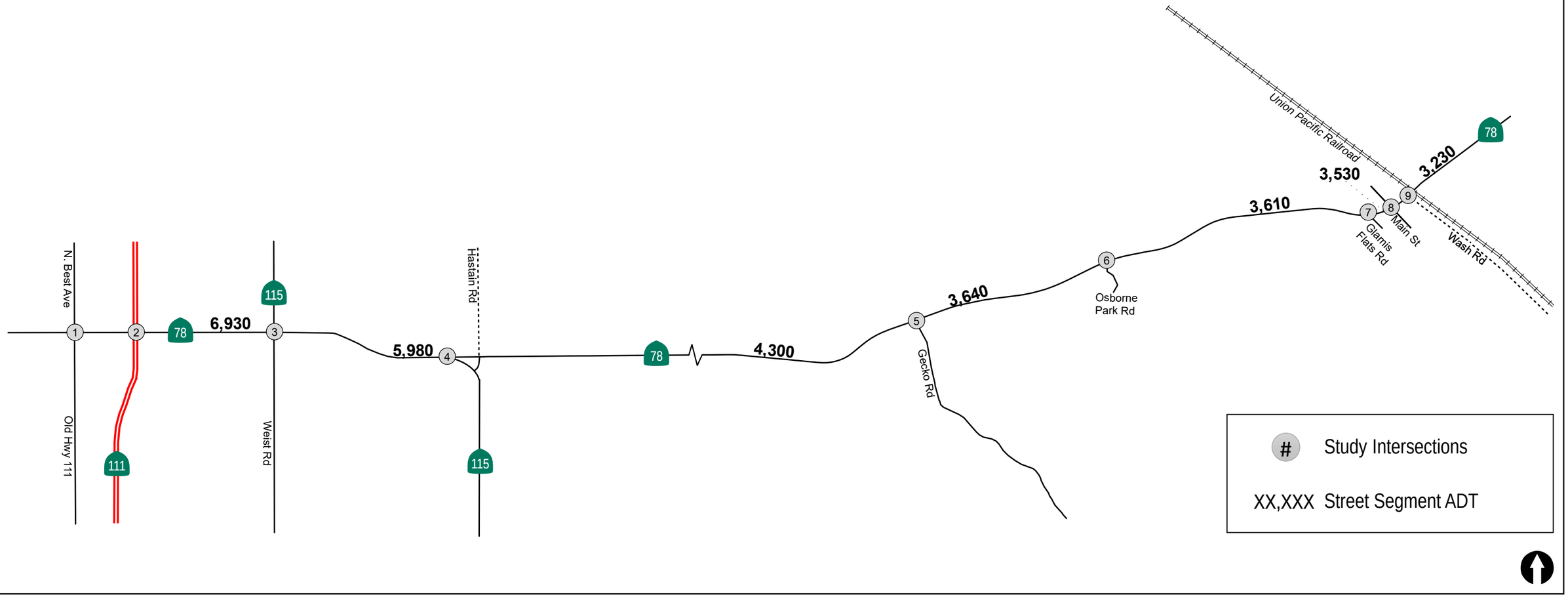

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Figure 11-2

Year 2050 + Project Traffic Volumes

Glamis Specific Plan

12.0 ACCESS ASSESSMENT

The Project site is regionally accessible via SR 78 which serves as the primary transportation route for cars and trucks. Wash Road, a County-maintained dirt road, serves as access to BLM land and extends southeasterly from SR 78 for approximately 18.4 miles to County Highway S34 (Ogilby Road), a County maintained and paved two-lane highway.

12.1 Glamis Mainstreet

Primary circulation flow will be provided via the proposed "Glamis Mainstreet", to be located between Glamis Flats Road and Wash Road, just southwest of the Glamis Beach Store, which will interconnect by crossing SR 78. A concept plan showing the proposed new intersection configuration on SR 78 is included in ***Appendix F***.

Fencing along SR 78 to assist in prohibiting access to the site other than at establishes intersections is recommended commensurate with the development of Glamis Mainstreet. A OHV tunnel running under SR 78 connecting the northern and southern portions of the Project site is recommended to be constructed at the time the Land Use Areas north of SR 78 are developed.

Figure 12-1 depicts the assumed geometric lane configuration based on the preliminary design provided in *Appendix F* as well as the Project trips at the future SR 78 / Glamis Mainstreet intersection.

Table 12–1 summarizes the Existing + Project + Cumulative projects intersection operations at the future SR 78 / Glamis Mainstreet intersection. As seen in *Table 12–1,* the intersection is calculated to operate acceptably at LOS B under Weekday and Weekend PM peak hour conditions. It is recommended that the Project conduct an annual signal warrant assessment to determine whether signalization at the intersection should be implemented. In addition, a formal Intersection Control Evaluation (ICE) report should be conducted at a subsequent engineering phase.

TABLE 12–1
SR 78 / GLAMIS MAINSTREET INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Delay [a]	LOS [b]
SR 78 / Glamis Mainstreet	MSSC[a]	Wkday	10.4	B
		Wkend	10.4	B

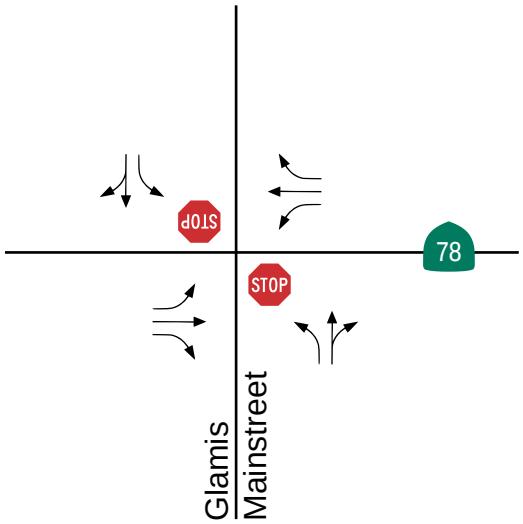
Footnotes:

a. MSSC = Minor Street Stop-Controlled intersection. Worst-case delay reported.

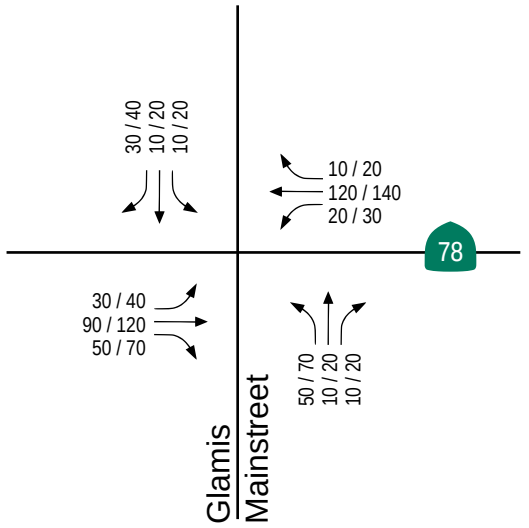
12.2 Additional Access Points

Access to Land Use Areas 5 and 6, just east of the Union Pacific Rail Road (UPRR), via SR 78 is proposed. Given the very low expected traffic volumes, signalization of the intersection is likely not needed, however, dedicated left-turn lanes on SR 78 are recommended.

In addition, a secondary gated emergency only access point to/from the Project site to SR 78 should be provided on the west side of the Project site, immediately south of SR 78.



Proposed Conditions Diagram



Project Buildout Traffic Volumes

Note:
Weekday / Weekend PM Intersection Traffic Volumes

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Figure 12-1

Glamis Mainstreet Operations

GLAMIS SPECIFIC PLAN

13.0 CONCLUSIONS & RECOMMENDATIONS

This traffic study analyzes the following specific components of the Project, which are anticipated to be developed within the first ten years:

- Restaurant Expansion: 4,000 SF
- Retail Expansion: 2,000 SF
- Service Center: Four (4) Service Bays
- Research & Development Facility: 5,000 SF
- Hotel / Motel: 20 Rooms
- Multi-Family Residential / Staff Housing: 14 Units
- RV Park: 30 Sites
- Vendor Row Expansion

Any additional future development that is not listed above and that exceeds the number of trips generated by the above uses will require a new traffic study and may require additional mitigation based on that study. All additional traffic studies will need to be submitted to the County of Imperial and Caltrans for review and approval.

13.1 Vehicle Miles Traveled

According to the ITE guidelines, it is recommended that local-serving retail projects be presumed to have less than significant VMT impacts and regional-serving retail projects be presumed to have significant VMT impacts if they increase VMT above the level that would occur for conditions without the project. As noted in OPR's technical advisory, "*by adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact*."

While the Project site is not located in an urban area, the primary objective of the Project is to formalize the site and provide services and amenities that patrons of the dunes would otherwise have to drive long distances to access. This includes food services, repair services, and retail services. The Project's proposed land uses are intended to serve patrons of the dunes and will not operate year-round due to the long distance from population bases and the extreme heat.

Therefore, the OPR guidance pertaining to locally serving retail projects is applicable to this Project. The Project land uses will improve service-destination proximity, shorten trips, and reduce VMT. As such, the Project is presumed to have a less-than-significant transportation impact and does not require a detailed VMT analysis.

13.2 Level of Service

The intersection and segment analysis provided in this study shows that the analyzed facilities are consistent with the County of Imperial General Plan LOS standards, and therefore no improvements

are required. However, it is recommended that the Project enact the following measures to provide safe access and efficient operations to/from the site*:*

- Construct the future intersection of SR 78 / Glamis Mainstreet per the sketch provided in *Appendix F*.
- Conduct an annual signal warrant assessment at the future intersection of SR 78 / Glamis Mainstreet to determine when / if signalization should be implemented.
- Provide fencing along SR 78 to assist in prohibiting access to the site other than at established intersections.
- An OHV tunnel running under SR 78 connecting the northern and southern portions of the Project site is recommended to be constructed at the time the Land Use Areas north of SR 78 are developed.
- Access to Land Use Areas 5 and 6, just east of the UPRR, via SR 78 will be required. Given the very low expected traffic volumes, signalization of the intersection is likely not needed, however, dedicated left- turn lanes on SR 78 are recommended.
- A secondary gated emergency only access point to/from the Project site to SR 78 should be provided on the west side of the Project site.
- All driveways connected to SR 78 shall be reconstructed to current Caltrans standards.
- A formal Intersection Control Evaluation (ICE) report should be conducted at a subsequent engineering phase. The ICE report shall be reviewed and approved prior to the beginning of any construction. The proposed improvements at the intersection of SR 78 / Glamis Main Street may change based on the findings from the ICE report.

L-2 Traffic Report Appendices

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LINSCOTT LAW & GREENSPAN
engineers

TECHNICAL APPENDICES
GLAMIS SPECIFIC PLAN
Imperial County, California
February 7, 2022

LLG Ref. 3-19-3112

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APPENDIX A

PROJECT DESCRIPTION

Project Description

1.1 Project Location

The Glamis Specific Plan (GSP) area is located approximately 27 miles east of Brawley at the intersection of State Route 78 (SR 78) and the Union Pacific Railroad (UPRR) in Imperial County, California. Geographically, the project site is located within the lower Colorado River Sonoran Desert Region in the east central portion of Imperial County (County). The project site is owned by the Polaris Inc. (Applicant).

Exhibit 1, *Regional Location Map*, shows the location of the project site in relation to Imperial County and surrounding areas. Exhibit 2, *Project Vicinity*, shows the relationship between the GSP area and surrounding vicinity with the Imperial Sand Dunes Recreation Area (ISDRA) located immediately to the southwest, the North Algodones Dunes Wilderness (NADW) immediately to the northwest, and the Chocolate Mountains and Chocolate Mountain Aerial Gunnery Range (CMAGR) located to the northeast.

The GSP consists of seven (7) parcels (including Assessor Parcel Numbers [APNs] 039-310-017, 039-310-022, 039-310-027, 039-310-023, 039-310-029, 039-310-026, and 039-310-030) totaling approximately 142 acres. See Exhibit 3, *Project Site Aerial*, for an aerial depiction of the project site vicinity. The project site is located in the northeast quarter of Section 33 and the northwest quarter of Section 34, Township 13 South, Range 18 East of the Glamis 7.5-minute quad. The project site is further defined as located at Latitude 32°59’46.95” North and Longitude 115°04’21.77” (approximate geographic center of the project site).

1.2 Existing Characteristics

The project site can be characterized as an area of open, sandy, disturbed desert land with all existing development occurring in close proximity (within approximately 0.25 mile) to the intersection of SR 78 and the UPRR. The project site consists of several adjoining parcels. On one parcel (APN 039-310-029) there is a one- and two-story metal building structure with water tanks, a wireless communications facility, a private residence/storage building and an unmaintained storage shed and shipping containers which together comprise what is commonly referred to as the “Glamis Beach Store.” Also, there is a separate seasonal off-highway vehicle (OHV) repair business (and two related RV trailers) connected to the Glamis Beach Store. Immediately south of the APN 039-310-029 parcel, is the 8-acre parcel (APN 039-310-030), which includes a single-family residence, large recreational vehicle storage garages, and other related equipment storage buildings. On the southeast corner of the project site is a 1-acre parcel (APN 039-310-017) which currently includes a rather dilapidated/abandoned pre-fab residential structure. On the parcel (APN 039-310-026) directly

opposite of the Glamis Beach Store (to the north of SR 78 from the Glamis Beach Store) is an existing RV storage area, and other vacant desert land. On the parcel on the southwest side of the project site (APN 039-310-027) there are wood posts to form a sectioned-off parking/vendor area. On the northeast side of the GSP, there are two triangular parcels (on the northeast side of the UPRR, APN 039-310-022 and APN 039-310-023), which are currently vacant.

The project site is relatively flat with a southwest-to-northeast trending grade of less than one percent or an approximate difference in elevation of 23 feet above mean sea level (amsl) between the southwest corner of the site (approximate elevation of 324 feet amsl) and the northeast corner of the site (approximately 347 feet amsl). Areas of wind-blown sand dunes with sporadic native vegetation are found situated and encroaching upon the southeast corner of the project site.

1.3 Surrounding Land Uses

The GSP contains the only private commercial land uses within the project vicinity and is surrounded by open desert land that is managed by the Bureau of Land Management (BLM). Also, the Chocolate Mountain Aerial Gunnery Range (CMAGR) is located approximately 3 miles to the north of the GSP. The GSP is within and surrounded by the ISDRA and is bordered by the NADW to the northwest. Within all of the various BLM lands surrounding the GSP, the BLM has designated Recreation Management Zones (RMZs) which dictate the allowable recreation activities within those areas and provide for BLM's management objectives within those areas. The ISDRA, NADW and RMZs are briefly discussed below:

Imperial Sand Dunes Recreation Area (ISDRA)

The ISDRA is the largest mass of sand dunes in the State of California, extending for more than 40 miles in length (from north to south), and averaging approximately 5 miles wide (from east to west). Dunes within the ISDRA can reach heights of 300 feet above the desert floor, providing OHV recreationists an ideal location for their activities. The ISDRA, which is managed by the BLM, includes a variety of camping areas, ranger stations, restrooms, and other facilities to support OHV recreationists who visit the area primarily between October and April. The BLM allows special events with a permit within the ISDRA.

North Algodones Dunes Wilderness (NADW)

The NADW covers more than 26,000 acres and is managed by the BLM as a part of the National Wilderness Preservation System. The NADW is closed to all vehicles and mechanized use. Camping is allowed throughout the area, however there is no water and no facilities for visitors within the NADW.

BLM Recreation Management Zones (RMZs)

The BLM has designated Recreation Management Zones (RMZs) on BLM lands located throughout the area surrounding the GSP. The RMZs provide an activity-level planning framework for BLM's

recreation management. The RMZs have been allocated throughout the planning area to represent permitted recreation niches (activities, experiences and benefits). The GSP is bordered by three RMZs: Open RMZ to the south, Limited RMZ to the northeast, and the North Algodones Dunes Wilderness RMZ to the northwest. The Open RMZ allows for unrestricted OHV recreation, camping, commercial vending, hiking and wildlife viewing. The Limited RMZ allows for limited use OHV recreation (travel limited to designated routes of travel or areas with seasonal restrictions under specific conditions), camping, environmental education, and tourism opportunities. The North Algodones Dunes Wilderness RMZ prohibits any motorized recreation opportunities and allows for non-motorized recreation, such as camping, hiking, and educational opportunities.

Chocolate Mountain Aerial Gunnery Range (CMAGR) The Chocolate Mountain Aerial Gunnery Range (CMAGR) is a live-fire training range used for developing and training Marine Corps and Navy aviators/land combat forces (see Exhibit 2 – Project Vicinity). The CMAGR consists of approximately 459,000 acres and is bounded on the west by the Salton Sea basin, and on the east by the Chuckwalla and Palo Verde mountains. It straddles the northern portion of the Chocolate Mountains east of the Salton Sea in Imperial and Riverside Counties, California, with restricted airspace in both California and Arizona. The northern border is separated from the Orocopia Mountains by Salt Creek and extends south to (near) Highway 78 approximately 3 miles northeast of the GSP. The CMAGR is under the jurisdiction of the United States Navy and Marine Corps and is closed to the public. The authorization for aircrews to deliver live ordnance on realistic targets is a central component of the overall value of the CMAGR. However, due to the significant distance between the GSP and the CMAGR, these ongoing military activities do not have any impacts to the GSP.

The Holtville Rocket Target Range has two live bombing locations to the west and northwest of the GSP, however both are approximately 10 and 8 miles away, respectively. Those live bombing/target range areas that are used by the U.S. Navy and Marine Corps, do not currently have any effect on the use of the GSP area, nor would any impact be expected in the future.

1.4 General Plan and Zoning Designation

The approximately 142-acre GSP is located and contained within the County's designated Glamis Specific Plan Area (GSPA). The GSPA allows for the development and creation of a Specific Plan in accordance with GSPA design criteria, objectives and policies as outlined in the County's General Plan Land Use Element. Exhibit 4, *Existing General Plan Designations*, shows the land use designations for the project site and the surrounding area. The existing zoning designation for the project site is Open Space/Preservation (S-2) and a very small area that is General Commercial (C-2). The general area of the Glamis Beach Store (within APN 039-310-029) is zoned as C-2, while the remainder of the project site is zoned as S-2. The project site is surrounded by BLM land uses on all sides. Exhibit 5, *Current Imperial County Zoning Project Site and Vicinity*, shows the zoning for the project site and surrounding

area, and Exhibit 5a, *Current Imperial County Zoning Project site*, shows the zoning for the project site only.

The Applicant has prepared this proposed GSP, which includes a General Plan Amendment (GPA) and Change of Zone (CZ) for County approval. The GSP proposes the establishment of Commercial/Recreational (CR) designated zoning based upon different levels of allowable land use intensity. Also, the GSP proposes a Change of Zone from S-2 (Open Space/Preservation) to S-1 (Open Space/Recreation) for the approximate 1-acre parcel on the southeast side of the project site (APN 039-310-017). The phasing plan component of the GSP (see Section 1.5) would phase the development so that more intense land uses are developed incrementally over time within the various proposed zones. The CR zoning designations are discussed in greater detail below. In conjunction with the Specific Plan a matching land use ordinance to implement the GSP is also provided.

1.5 Project Elements

Exhibit 6, *Glamis Specific Plan – Land Use Areas*, identifies proposed land uses that are permitted within the CR zones. Three zoning categories as shown below are being implemented. The following CR Zones are described in their current setting:

CR-1 Zone

The CR-1 Zone is proposed as the least intensive CR zone of the GSP, and allows for a limited range of land uses focused on research and development, employee housing and utility infrastructure uses. As shown in Table 1, *CR Zones Permitted Land Uses*, a total of twenty-one (21) land uses are permitted within this Zone. The permitted land uses of the CR-1 Zone are intended to restrict land uses that promote traffic trips and crossings of the UPRR.

CR-2 Zone

The CR-2 Zone is proposed for moderate intensity CR Zone of the GSP, and allows for a limited range of land uses focused on guest housing, vehicle storage, accessory storage buildings, equipment storage, vehicle wash down areas, and solar and wind power generation. As shown in Table 1, *CR Zones Permitted Land Uses*, a total of thirty (30) land uses are permitted within this Zone.

CR-3 Zone

The CR-3 Zone is the most intense CR Zone of the GSP and allows for a maximum range of recreational, commercial, resort, retail, medical, entertainment, and utility infrastructure land uses. As shown in Table 1, *CR Zones Permitted Land Uses*, a total of sixty-six (66) land uses are permitted within this Zone. The permitted land uses of the CR-3 Zone are intended to provide the greatest flexibility of land uses.

Table 1 CR Zones Allowed/Permitted Uses

#	Allowed/Permitted Land Uses	CR-1	CR-2	CR-3
1	Accessory storage buildings	x	x	x
2	Adventure Center			x
3	Amusement Facilities			x
4	Bar(s)			x
5	Billboards		x	x
6	Bulk water sales (RV and general retail sale)			x
7	Caretakers quarter(s) maximum of 3	x	x	x
8	Communications Facilities (i.e. towers)	x	x	x
9	Condominium housing	x	x	x
10	Convention area			x
11	Desert Tours (off road experience)			x
12	Drive-in food facilities			x
13	Employee Housing	x	x	x
14	Entertainment Events	x		x
15	Equipment Storage	x	x	x
16	Film production / movie studio		x	x
17	Fireworks display area (as permitted by fire dept and other authorities)		x	x
18	Fuel Station (gas/diesel/propane, including convenience mart)	x	x	x
19	Guest Housing	x	x	x
20	Helipad (emergency/public)			x
21	Hotel/Motel Accommodations		x	x
22	Lighting or light shows (non-fireworks) as permitted		x	x
23	Medical Services Facility		x	x
24	Mobile food trucks			x
25	Movie theater			x
26	Obstacle Course / Technical driving area			x
27	Off road driving school / Public workshops			x
28	Off road vehicle maintenance, repair, development, research by owner (no sales/leasing)	x	x	x
29	Oil, gas, geothermal exploration		x	x
30	Park, Playground and Picnic area(s)	x		x
31	Power Generation (on site use i.e. diesel/propane)	x	x	x

#	Allowed/Permitted Land Uses	CR-1	CR-2	CR-3
32	Private Residences	x	x	x
33	Public Parking area(s)			x
34	Public Restrooms			x
35	Public showers			x
36	Racetrack			x
37	Rental Facilities (off road equipment/vehicles)			x
38	Research and Development Facilities	x	x	x
39	Restaurant(s)			x
40	Retail displays / entrance signage			x
41	RV Dump Station(s) provided it meets County requirements		x	x
42	RV Park	x	x	x
43	RV and off-road vehicle storage	x	x	x
44	RV repair facility		x	x
45	Shooting range			x
46	Solar generating facility including battery storage up to 30 MW for onsite and export		x	x
47	Sporting goods store(s)			x
48	Stores (retail general)			x
49	Stores (retail specialty)			x
50	Temporary sales facilities			x
51	Testing facilities (offroad equipment)			x
52	Tourist information center			x
53	Training Facilities (off road vehicle use/safety)	x		x
54	Utility Buildings	x	x	x
55	Utility Substation	x	x	x
56	Vehicle parts sales			x
57	Vehicle Repair and Service			x
58	Vehicle Sale			x
59	Vehicle storage area	x	x	x
60	Vehicle wash down area		x	x
61	Vendor Sales Area(s) restricted by owner			x
62	Viewing Deck or Tower			x
63	Village area			x
64	Water and/or Wastewater treatment facilities	x	x	x

#	Allowed/Permitted Land Uses	CR-1	CR-2	CR-3
65	Wedding Chapel			x
66	Wind generating (for electrical power systems) including battery storage up to 30 MW for onsite and export		x	x

S-1 Zone (Open Space/Recreation) The S-1 Zone (Open Space/Recreation) applies only within Planning Area 8. Within this parcel, the GSP proposes a change of zone from the current S-2 Zone to S-1 Zone. As per Title 9, Division 5, Chapter 18, Section 90518.00 of the County's development code, the purpose of the S-1 zone is to designate areas that recognize the unique Open Space and Recreational character of Imperial County including the deserts, mountains and waterfront areas. Primarily the S-1 Zone is characterized by low intensity human utilization and small-scale recreation related uses. Any new subdivision in the S-1 zone will require all necessary infrastructure, including potable water, sewer and roads to County standards.

The S-1 Zone allows the following permitted uses, and the following uses permitted with a Conditional Use Permit (CUP) (see Table 2 below)

Table 2 – County of Imperial – S-1 Open Space/Recreation Zone – Allowed/Permitted Uses

#	Allowed/Permitted Uses
1	Accessory Structure including cargo container (provided they have an approved building permit and are subordinate to a primary building/use)
2	Crop and tree farming
3	Directional signs of not to exceed six (6) square feet in area but not including commercial advertising
4	Duck clubs
5	Fish farms
6	Forest industries
7	Grazing
8	Gun clubs
9	Harvesting of any wild crop
10	Hotels and motels
11	Marinas, boat liveries and boat launching ramps

#	Allowed/Permitted Uses
12	Mobile home/RV Park (provided 50% of the total use is for RV use)
13	Residence (one per legal parcel)
14	RV park
15	Solar energy extraction generation (provided that it is for on-site consumption only).
16	Home Occupation (per Division 4, Chapter 4; home occupation permit required).

Land Use Areas

As shown in Exhibit 6, the GSP consists of nine (9) Land Use Areas. Exhibit 6 also shows the respective CR (CR-1, CR-2, and CR 3) and S-1 zoning applicable within each Land Use Area. Land Use Area 1 is considered as the most developable area of the GSP due to the lack of safety concerns such as pedestrian and OHV crossings along SR 78 and the UPRR. Additionally, special events such as Camp RZR, have been historically hosted in this area that is adjacent to the Open RMZ to the south (within the IDSDRA) which provides for the greatest OHV accessibility of the entire project site. As shown in the list below, the Land Use Areas correspond with the following project APNs:

- Land Use Area 1 – APN 039-310-029 and APN 039-310-027
- Land Use Area 2 – Southwest portion of APN 039-310-026
- Land Use Area 3 – Western portion of APN 039-310-026
- Land Use Area 4 – Northern portion of APN 039-310-026
- Land Use Area 5 – APN 039-310-022 (north side of SR 78)
- Land Use Area 6 – APN 039-310-023 (south side of SR 78)
- Land Use Area 7 – APN 039-310-030
- Land Use Area 8 – APN 039-310-017

Table 3 below identifies the Preferred Land Uses within each of the Land Use Areas.

Table 3 Planning Area Preferred Land Uses

Planning Area	Preferred Land Uses	Proposed Zoning
1	Accessory storage buildings, adventure center, amusement facilities, bar(s), billboards, bulk water sales, caretakers quarters, communications facilities, condominiums, convention area, desert tours (off road experience), drive-in food facilities, employee housing, entertainment events, equipment storage, film production/movie studio, fireworks display area (as permitted by fire dept and other authorities), fuel station (gas/diesel and propane), guest housing, helipad (emergency/public), hotel/motel accommodations, lighting or light shows, medical services facility, mobile food trucks, movie theater, obstacle course/technical driving area, off road driving school/public workshops, oil/gas/geothermal exploration, park/playground/picnic areas, power generation (on site use i.e. diesel/propane), private residences, public parking areas, public restrooms and showers, racetrack, rental facilities (off-road equipment/vehicles), research and development facilities, restaurant(s), retail displays/entrance signage, RV dump station(s), RV park, RV and off-road vehicle storage, RV repair facility, RV and general retail sales, shooting range, sporting goods store(s) solar generating (on site use), stores (retail general and retail specialty), testing facility (off road equipment), temporary sales facilities, tourist information center, training facilities (off road vehicle use/safety), utility buildings, utility substation, vehicle parts sales, vehicle repair and service, vehicle sale, vehicle storage, vehicle wash down area, vendor sales area(s) restricted by owner, viewing deck or tower, village area, water/wastewater treatment facilities, wedding chapel, and wind generating (for electrical power systems) including battery storage.	CR-3
2, 3, & 4	Accessory storage buildings, adventure center, entertainment events, equipment storage, guest housing, medical services facility, obstacle course/technical driving area, off road driving school/public workshops, public parking areas, RV dump station(s), RV park, RV repair facility, RV storage, mobile food trucks, obstacle course/technical driving area, off	CR-3

Planning Area	Preferred Land Uses	Proposed Zoning
	road driving school/public workshops, public showers, public restrooms, racetrack, solar generating (on site use).	
5 & 6	Accessory storage buildings, billboards, caretaker quarters, communications facilities, condominiums, equipment storage, employee housing, film production/movie studio, fireworks display area, fuel stations (gas, diesel and propane), guest housing, hotel/motel accommodations, lighting and light shows, medical services facility, off road vehicle maintenance/repair/development, oil/gas/geothermal exploration, power generation, private residences, research and development facility, RV park, RV dump station(s), RV storage, RV repair facility, solar generating (on-site use) including battery storage, utility buildings, utility substation, vehicle storage, vehicle wash down area, water and/or wastewater treatment facilities, and wind generating (for electrical power systems) including battery storage.	CR-1
7	Accessory storage buildings, , caretaker quarters, communication facilities, condominiums, entertainment events, equipment storage, fuel station (gas/diesel/propane), guest housing, off road vehicle maintenance/repair/development/research by owner (no sales or leasing), park/playground/picnic areas, power generation, private residence, testing facilities (off road equipment), training facilities (off road vehicle use/safety), vehicle storage, and water and/or wastewater treatment facilities.	CR-2
8	Accessory structure including cargo container (provided they have an approved building permit and are subordinate to a primary building/use), crop and tree farming, directional signs of not to exceed six (6) square feet in area but not including commercial advertising, duck clubs, fish farms, forest industries, grazing, gun clubs, harvesting of any wild crop, hotels and motels, marinas, boat liveries and boat launching ramps, mobile home/RV park (provided 50% of the total use is for RV use), residence (one per legal parcel), RV park, solar energy extraction generation (provided that it is for on-site consumption only),	S-1

Planning Area	Preferred Land Uses	Proposed Zoning
	and home occupation per Division 4, Chapter 4 (home occupation permit required).	

Conceptual Circulation Plan

The project site is regionally accessible via SR 78 and serves as the primary transportation route for cars and trucks. Ted Kipf Road, a County-maintained dirt road serves as access to BLM land and extends southeasterly from SR 78 for approximately 18.4 miles to County Highway S34 (Ogilby Road), a County maintained and paved two-lane highway. Circulation flow will be provided via the "Glamis Mainstreet", which will interconnect by crossing SR 78 (see Exhibit 6, *Glamis Specific Plan – Land Use Areas*). A secondary and emergency only access point to/from the project site to SR 78 will be provided on the west side of the project site immediately south of SR 78.

Conceptual Drainage Plan

Text to be added once Conceptual Drainage Plan has been prepared.

Conceptual Domestic Water Plan

Text to be added once Conceptual Domestic Water Plan is available.

Conceptual Wastewater Treatment Plan

Text to be added once Conceptual Wastewater Treatment Plan is available.

Phasing Plan

Development within the GSP is intended to occur over a span of approximately 20 to 50 years and will depend on market conditions, availability of supporting infrastructure, and other factors. Four (4) phases of development are proposed. Within these phases additional phasing may occur and are described as follows:

Phase One

As shown in Exhibit 7, *Phasing Plan*, development of Phase One will occur where the existing Glamis Beach Store, Restaurant and Bar, and OHV repair facility are located as contained within APN 039-310-029 Land Use Area 1, 34-acre parcel). Also, APN 039-310-030 (Land Use Area 7, 8-acres parcel) and APN 039-310-017 (Land Use Area 8, 1-acre parcel) are included as part of Phase One.

Before certain significant structural improvements are made to this area, required and necessary infrastructure improvements relevant to potable water, wastewater treatment and electrical service would be needed and developed in order to accommodate the projected demand from visitors. There may be some improvements made within this parcel that are not dependent on such services and therefore could be implemented ahead of such infrastructure.

The first required infrastructure improvement would be the development of a water treatment system, which would treat ground water extracted from existing onsite wells. This is currently in progress and a water treatment plant complying with California standards is being constructed to meet the needs of the current uses and with room for expansion. As new development is implemented, this water plant may need to be expanded as determined by the regulatory agencies.

The second required infrastructure improvement may be the development of a wastewater treatment system. Currently, wastewater generated by the Glamis Beach Store, restaurant and bar is discharged into an existing septic tank located near to those buildings. For some initial development(s) septic system(s) may be possible and allowed. However, this decision relies entirely upon regulatory requirements. If and when a development is proposed and a wastewater system is required the project will implement the regulatory required system(s).

The amount of wastewater treatment infrastructure needed (i.e., secondary and tertiary treatment) would be determined by the amount and intensity of each structural improvement envisioned, and the amount of wastewater forecasted to be generated by each structural improvement. To assure wastewater does not exceed the treatment capacity at any given time during development of phase one (and for all other subsequent phases), a wastewater generation analysis will be required for each structural improvement to determine whether existing wastewater infrastructure would, or would not need upgraded improvements in order to maintain wastewater treatment capacity.

The third system of infrastructure improvement would be electrical service upgrades. The project site currently relies on diesel generators for all of its electrical power demand needs. It may not be a feasible option for new development to be reliant upon diesel generators in the future, since air quality and greenhouse gas (GHG) emissions regulations are likely to become more restrictive over time. With this in mind, three options are being evaluated to determine which available source of power supply would best fit as the preferred option for the Glamis Specific Plan. The first option would

to be for Imperial Irrigation District (IID) to construct and install a power line (transmission line and/or distribution line) to extend from the nearest substation (approximately 7.2 miles to the northeast). A second and potentially more viable option would be to develop a small commercial solar photovoltaic (PV) system, with a back-up battery storage component or another green power system. A third option may be wind generation. Although winds in this area are sporadic, there is newer technology and future technology that may make wind or other green energy an option. The timing for either of these three power supply/delivery options to be developed is unknown at this time. However, one of these three power supply/delivery options will need to be considered prior to initial development, since the use of diesel generators (existing condition) to support future development, would be prohibitively costly and complex in meeting air quality regulatory requirements.

As shown in Table 2, uses permitted within Phase One could include restaurant(s), bar(s), repair shop(s), a vendor row area and event area.

Phase One would be contained within Land Use Area 1, with the exception of possible development of a research and development (R&D) facility to occur either within Land Use Area 5 or 6, and an RV park or employee housing in Land Use Areas 2, 3, and/or 4. Part of Land Use Area 8 (APN 039-310-017) could be developed during Phase One as it slightly overlaps onto current land used for Camp RZR.

Phase Two

Phase Two would most likely be within Land Use Area 1, immediately west of Phase One. Phase Two development would serve as an extension to development occurring within Phase One by incorporating land uses permitted under the CR Zone similar to those permitted in Phase One. Phase Two would also incorporate the Glamis Mainstreet (as shown on Exhibit 6) to serve as a circulation corridor for OHV traffic to and from the dunes and to Phase Four (Areas 2, 3, and 4) located directly north of SR 78.

Phase Three

Phase Three, located on the northeast side of the UPRR and bisected by SR 78, would be located within Land Use Area 5 and Land Use Area 6. No major public use facilities would be considered for development within these two APNs to discourage OHV traffic from crossing the UPPR to access these areas. Phase Three however, would serve for the development of uses relevant to employee housing, RV park, and/or an R&D facility and possible PV Solar array system.

Phase Four

Phase Four, located on the north side of SR 78, would be located within Land Use Areas 2, 3 and 4. Most of the infrastructure improvements for this phase will be based on regulatory, safety and liability concerns, and consequently, will require specific infrastructure improvements to be in place prior to development.

The Glamis Mainstreet corridor is proposed to provide an optional circulation interconnection between Phase One and Phase Four. The project applicant will first need to work with and create a nexus as well as approvals between State, County of Imperial, agencies and local governments as to the appropriate safe type of highway crossing (undercrossing or overcrossing) to be constructed across SR 78. This process will ensure that the crossing is designed to incorporate all required safety measures to the fullest extent possible.

All Phasing as proposed will be impacted by possible requirements that Caltrans may impose along SR 78 and for crossing the UPRR. The Imperial County Transportation Commission (ICTC) is currently conducting a feasibility study for a safe crossing over UPRR for off road vehicles either at SR 78 or Wash 10 or some other location, and additional information will be provided once the feasibility study is complete. The GSP does not encourage or desire to have off road vehicles cross the UPRR, therefore the parcels of land on the northeast side of the UPRR are proposed to have very restricted uses.

Special Events

The GSP area and greater Imperial Sand Dunes area has been historically utilized for OHV recreational events and activities. The applicant has been operating a special recreational event named “Camp RZR” since 2007 that attracts as many as 20,000 visitors each year. This event usually occurs during the weekend before Halloween. In 2008, the County of Imperial issued a Conditional Use Permit (CUP) to the applicant to operate a “seasonal event area” for special events such as Camp RZR on their private property within the ISDRA. Since 2008, the applicant has coordinated with the County, BLM, Imperial County Fire Department, Imperial County Sherriff’s Office, California Highway Patrol and other affected public agencies to ensure that proper special event protocols and procedures are enforced to address key issues such as traffic, safety, emergency procedures, restrooms, and other related special event factors.

The GSP will include provisions for additional special events to be held in addition to the longstanding Camp RZR. In concert with the existing operational protocols, procedures and guidelines for special events, the GSP will provide performance standards that will meet the guidelines/requirements of the affected public agencies (i.e., Imperial County Fire Department and Sheriff’s Office) to address and ensure compliance with key special event-related issues. Furthermore, the GSP’s performance standards will incorporate the BLM’s Special Recreation Permit Event Operations Plan Checklist to

ensure that operations of the proposed special annual events comply with the special event guidelines of the BLM. Special events that may be held at this site can be sponsored by the owner or by other entities provided they are first approved by the owner. Events can vary and be combined with off-site activities where portions of the event are on site while the remainder is on adjacent BLM lands. These events may include concerts, races, social gatherings, sporting activities, educational activities, training activities, and may include pyrotechnics and other entertainment venues.

Conceptual Site Plan

Exhibit 8, *Conceptual Site Plan*, presents a hypothetical, conceptual site plan for the GSP, and that depicts the arrangement of preferred land uses (as detailed in Table 3) within the identified Land Use Areas at the time of full project build-out. Per Exhibit 8, potential structures, circulatory corridors, and other related-facilities are identified to provide a conceptual project layout in accordance with the proposed CR Zones for the GSP. In addition to the Conceptual Site Plan for the GSP, Exhibit 9, *Conceptual Site Plan – Alternative*, provides an alternative arrangement of preferred land uses for the GSP. Specifically, Exhibit 9 presents the relocation of the vendor row area to APN 039-310-029 on the east portion of Planning Area 1 and the special events area to APN 039-310-027 on the western portion of Planning Area 1.

Project Entitlements

The County of Imperial is the lead agency for the proposed Glamis Specific Plan. The applicant is requesting approval of the following entitlements by the County of Imperial:

- Specific Plan XX-XX
- Land Use Ordinance
- Change of Zone
- Conditional Use Permit(s)
- Air Quality Permits
- Water Treatment Permits

Other discretionary actions that may be required by the County include approval of:

- Tentative and Final Parcel Maps
- Plot Plans and/or Conditional Use Permits
- All of these will also be subject to CEQA compliance.

Other Public Agencies whose Approval is Required:

The Glamis Specific Plan may also require approval from the following additional public agencies:

Caltrans District 11 – potential traffic signal/intersection improvements, and encroachment permit(s) for driveway access.

Exhibit 1 - Regional Location Map

Exhibit 2 - Project Vicinity

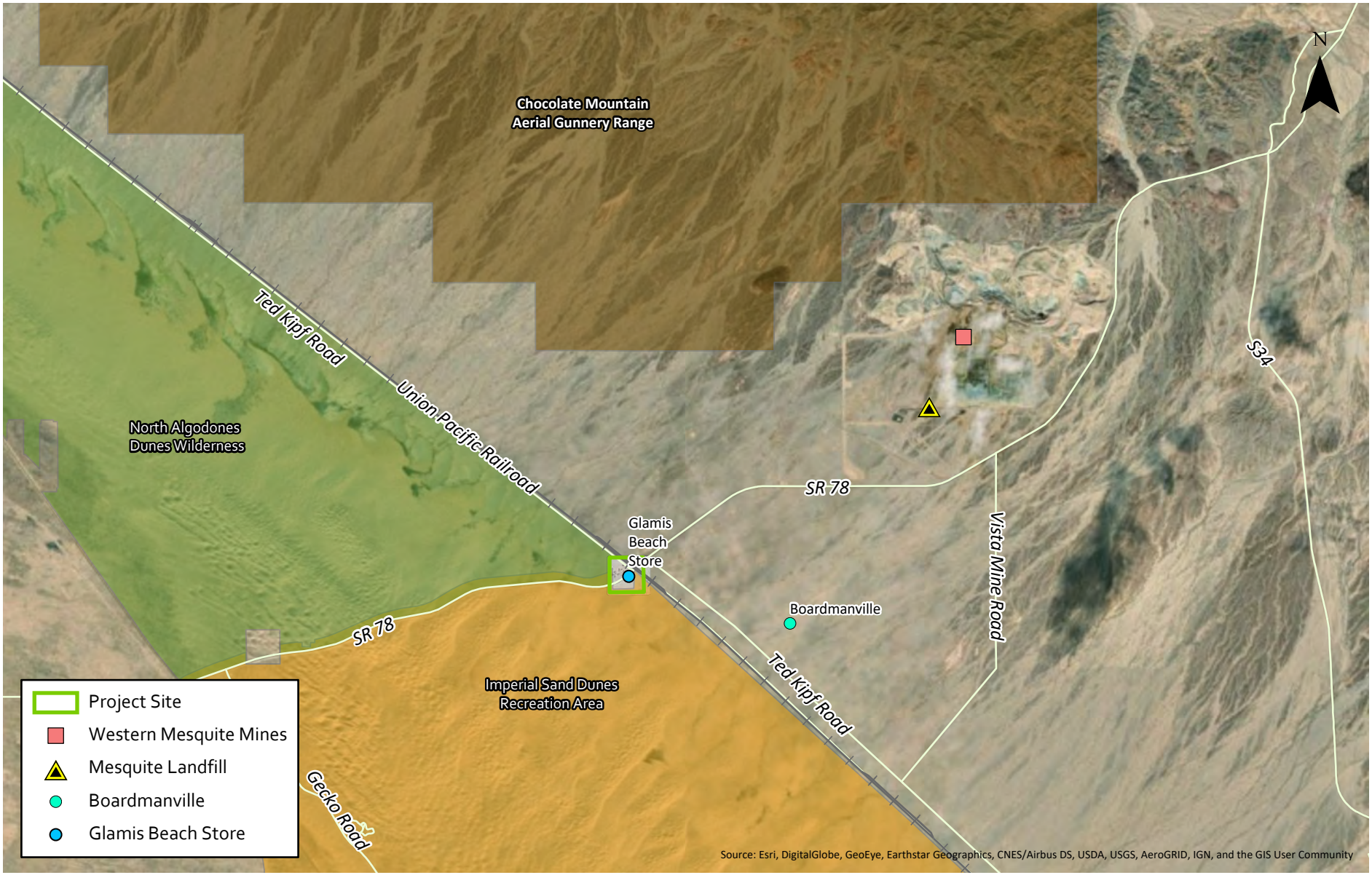


Exhibit 3- Project Site Aerial

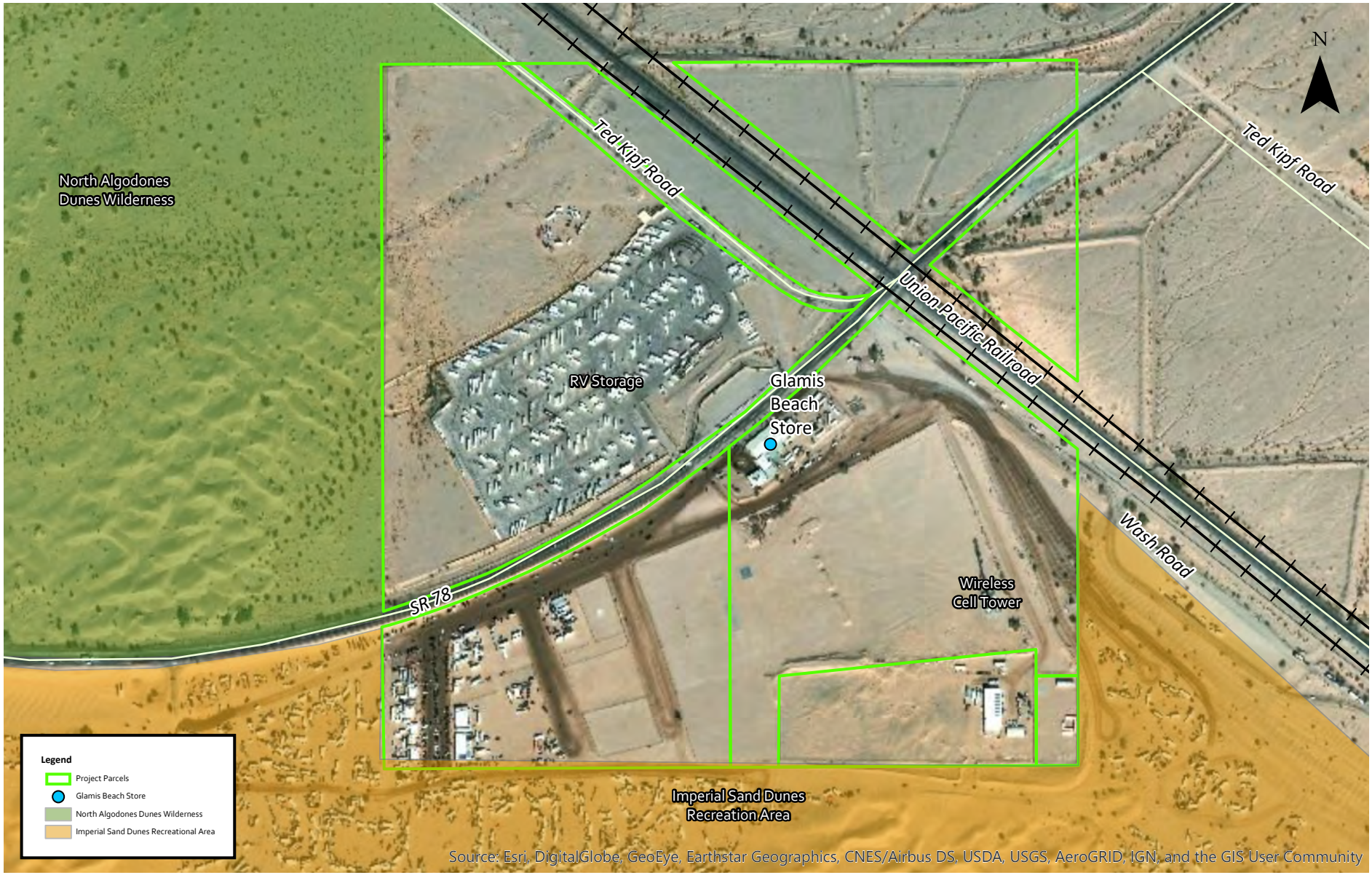
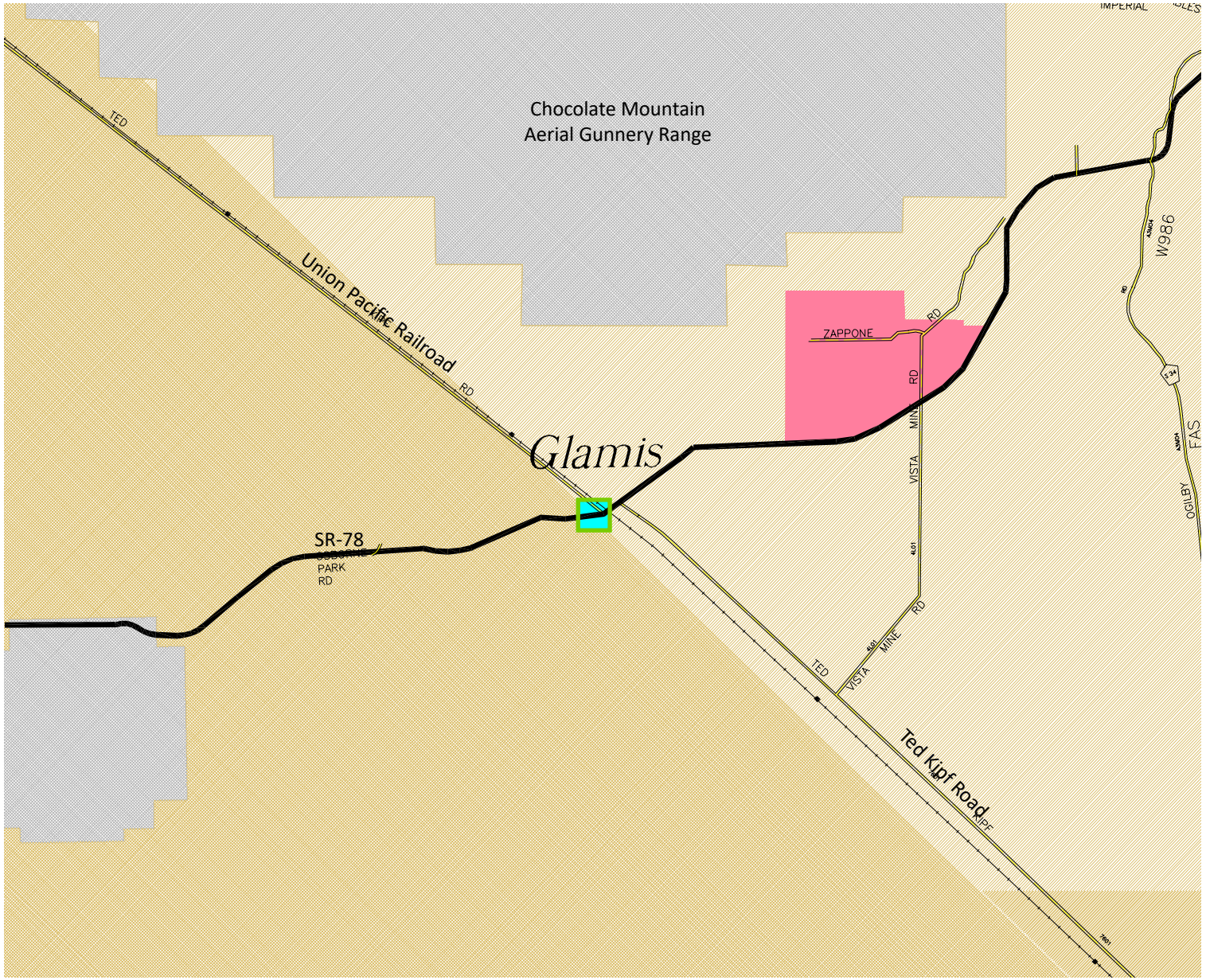


Exhibit 4 - Existing Imperial County General Plan Designations



Legend

- Agriculture
- Community Area
- Government/Special Public
- Industry
- Recreation/Open Space
- Special Purpose Facility
- Specific Plan Area
- Urban Area
- Project Site

Exhibit 5 - Current Imperial County Zoning Project Site and Vicinity

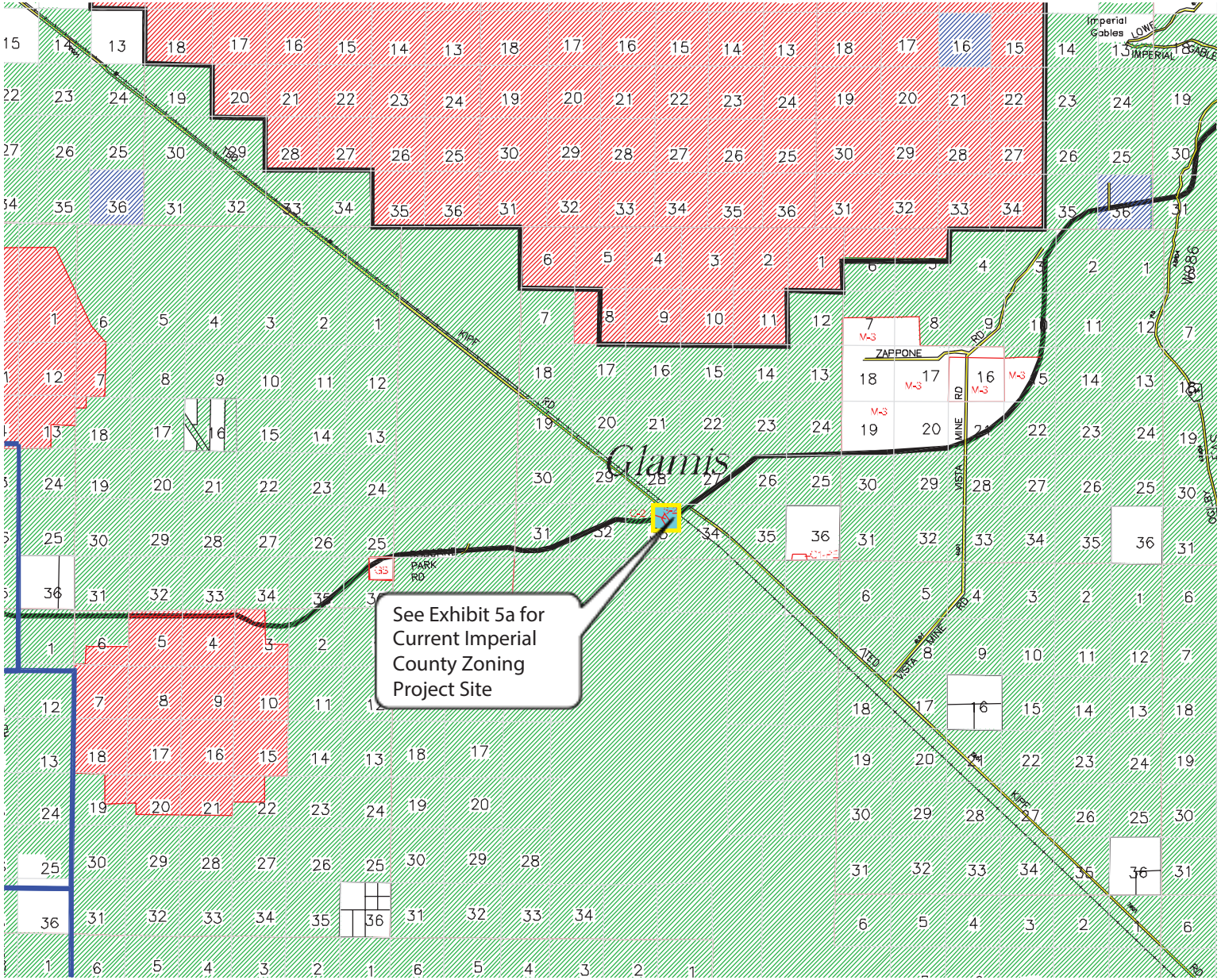
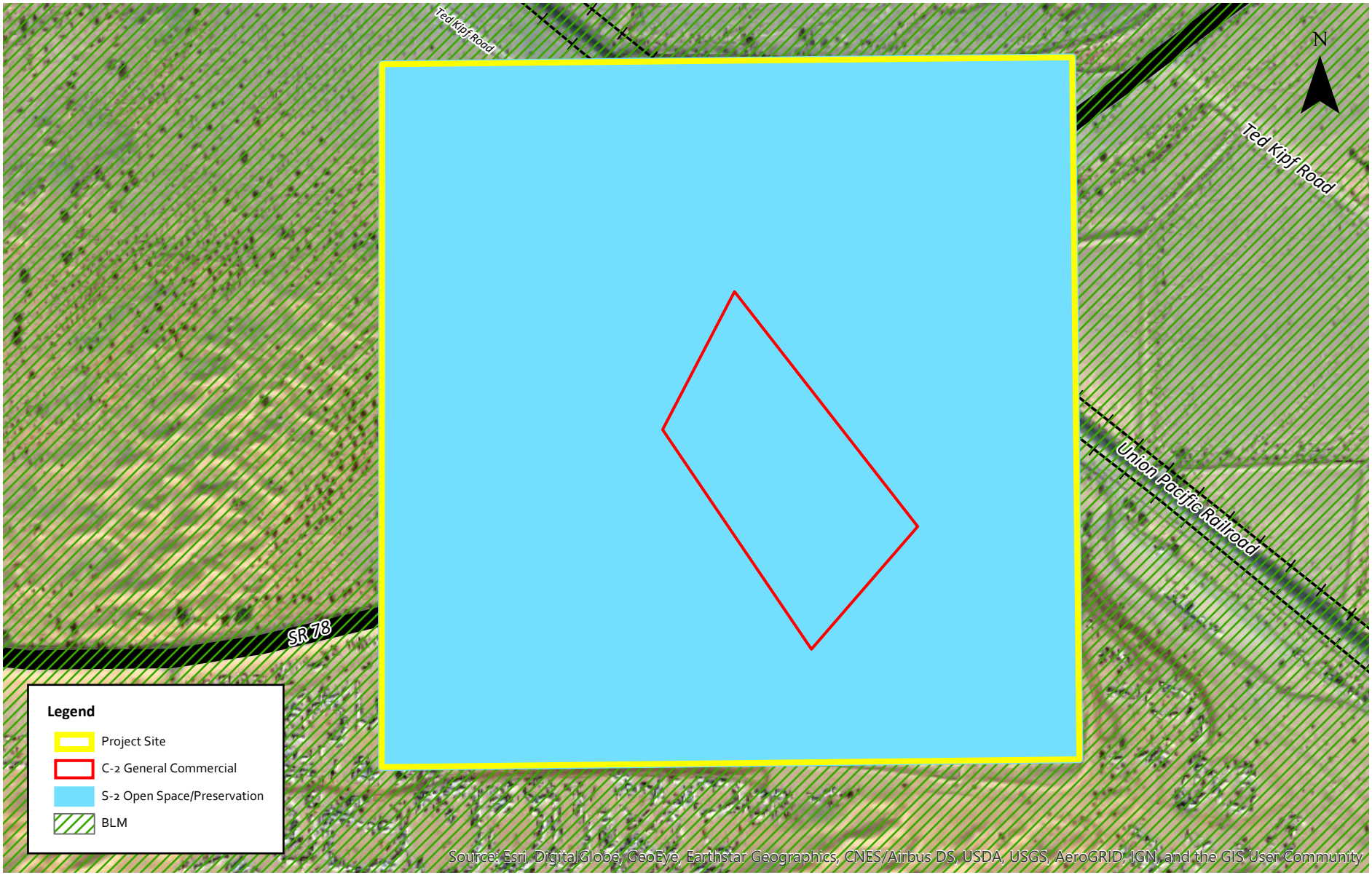
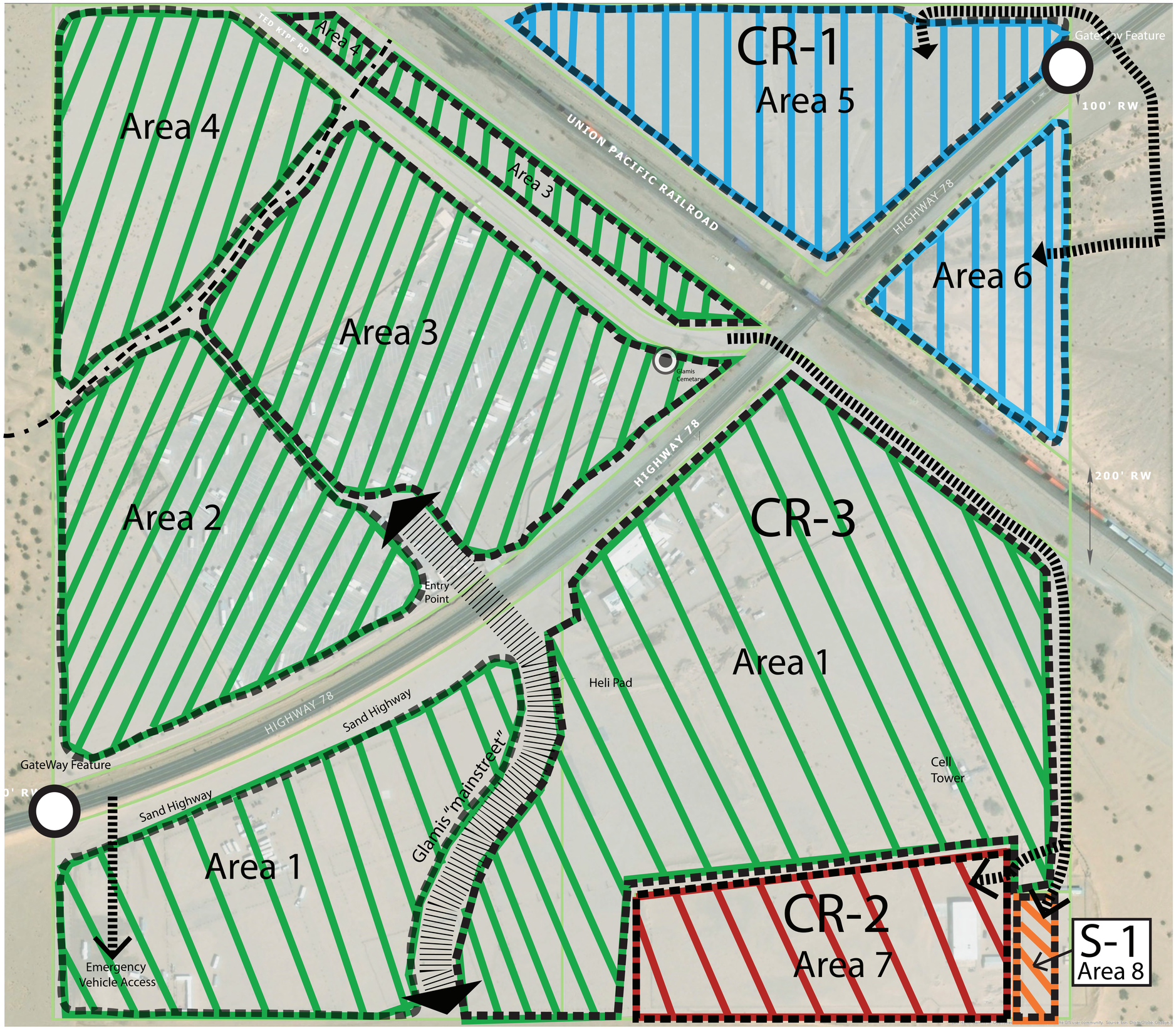


Exhibit 5a - Current Imperial County Zoning Project Site





Zoning Designation

CR-1
- -Area 5
- -Area 6

CR-2
- -Area 7

CR-3
- -Area 1
- -Area 2
- -Area 3
- -Area 4

S-1
- -Area 8

Exhibit 6 Glamis Specific Plan - Land Use Areas (Preferred)

19-11-04

15 ACRES

Phase 3

039-310-022
15 Acres

Phase 3

039-310-023
7 Acres

Phase 4

039-310-026
50 Acres

RV Storage

Glamis Beach Store

Phase 1

039-310-029
34 Acres

Cell Tower

Phase 2

039-310-027
27 Acres

039-310-030
8 Acres

039-310-017
1 Acre

TED KIFF ROAD

HIGHWAY 78

UNION PACIFIC RAILROAD

N

Exhibit 7 -GLAMIS SPECIFIC PLAN PHASING

The Altum Group

0 125 250 500 750 1,000 Feet

1 INCH = 100 FEET

* = CURRENTLY NOT UNDER POLARIS OWNERSHIP

Area 4
Guest Housing
Area 4
Solar
Employee Housing
Area 5
Polaris R & D
Facility
RV Park
Solar
Area 3
Area 3
HIGHWAY 78
Special Event
Space
Area 2
RV Park,
RV Storage and
Dump Station
Solar
Special Event
Space
Area 6
RV Storage
(Future Special
Event Area)
Glamis
Cemetary
Area 1
Wastewater
Treatment
OHV Parking
Public
Restrooms/Showers
RV Storage
(Future Special
Event Area)
Hotel/Bar
Water
Glamis Beach
Store
Solar Generating
Facility
Parking
Parking
Potential
Under-crossing
for OHV and Peds
UNION PACIFIC RAILROAD
Pedestrian
Connections
Special Event
Space
Special Event
Space
Heli-Pad
Pedestrian
Connections
Stage
Cell Tower
Sand
Highway
Vendor Row Pads -
Hook-ups,
tie downs and
Shade Structures
OHV Parking
Emergency
Access
OHV Parking
Food Trucks
Hook-ups,tie downs
and Shelter Structures
Vendor Row Pads -
Hook-ups,
tie downs and
Shade Structures
Emergency
Medical
Facility
Area 7
Wastewater
Lift Station
Solar
Area 8
Area 1

The Altum Group

Exhibit 8

GLAMIS SPECIFIC PLAN

CONCEPTUAL SITE PLAN

0 125 250 500 750 1,000 Feet

1 INCH = 100 FEET

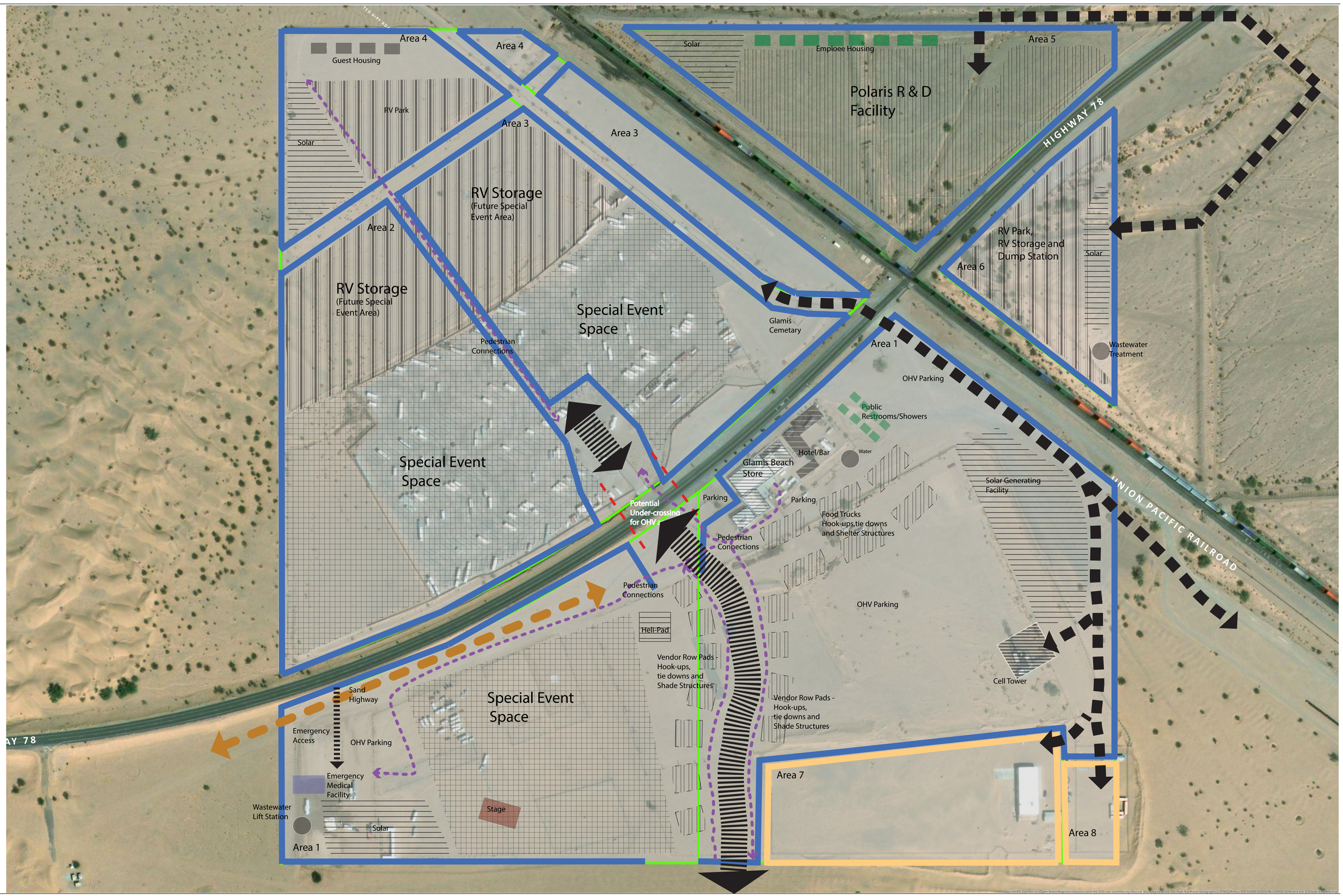


Exhibit 9

GLAMIS SPECIFIC PLAN
CONCEPTUAL SITE PLAN - ALTERNATIVE

0 125 250 500 750 1,000 Feet

1 INCH = 100 FEET

* = CURRENTLY NOT UNDER POLARIS OWNERSHIP

APPENDIX B

INTERSECTION & SEGMENT COUNT SHEETS, CALTRANS TRAFFIC DATA

National Data & Surveying Services

Intersection Turning Movement Count

Location: Old Hwy 111 & SR-78/Ben Hulse Hwy
City: Brawley
Control: Signalized

Project ID: 19-04408-001
Date: 2019-11-08

Total

NS/EW Streets:	Old Hwy 111				Old Hwy 111				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	9	10	7	0	10	20	10	0	8	41	18	0	2	29	8	0	172
5:15 PM	14	14	6	0	18	14	11	0	11	36	8	0	3	29	7	0	171
5:30 PM	10	15	3	0	8	15	10	0	5	37	15	0	3	34	7	0	162
5:45 PM	8	12	9	0	9	13	11	0	11	38	10	0	5	26	9	0	161
6:00 PM	5	9	6	0	7	12	10	0	11	37	8	0	7	20	4	0	136
6:15 PM	7	9	6	0	12	7	10	0	5	28	4	0	6	23	7	0	124
6:30 PM	5	7	9	0	8	10	10	0	3	28	6	0	3	21	3	0	113
6:45 PM	7	6	7	0	7	7	5	0	5	29	6	0	5	25	5	0	114
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	65	82	53	0	79	98	77	0	59	274	75	0	34	207	50	0	1153
APPROACH %'s :	32.50%	41.00%	26.50%	0.00%	31.10%	38.58%	30.31%	0.00%	14.46%	67.16%	18.38%	0.00%	11.68%	71.13%	17.18%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	41	51	25	0	45	62	42	0	35	152	51	0	13	118	31	0	666
PEAK HR FACTOR :	0.732	0.850	0.694	0.000	0.625	0.775	0.955	0.000	0.795	0.927	0.708	0.000	0.650	0.868	0.861	0.000	0.968
	0.860				0.866				0.888				0.920				

Prepared by National Data & Surveying Services

Old Hwy 111 & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-001
City: Brawley

Day: Friday
Date: 11/08/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
05:00 PM - 06:00 PM	05:00 PM - 07:00 PM

Old Hwy 111 — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	42	62	45	0	117	PM

SR-78/Ben Hulse Hwy — EASTBOUND

AM	NOON	PM	
0	0	201	
0	0	0	0
0	0	35	1
0	0	152	1
0	0	51	1
AM	NOON	PM	

SR-78/Ben Hulse Hwy — WESTBOUND

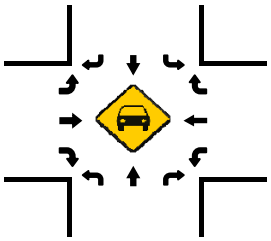
PM	NOON	AM	
31	0	0	0
118	0	0	1
13	0	0	1
0	0	0	0
222	0	0	
PM	NOON	AM	

CONTROL			
Signalized			
TEV	0 AM	0 NOON	666 PM
PHF			0.97

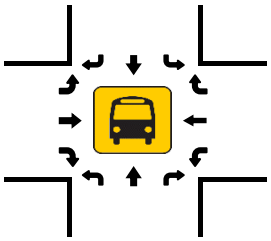
Old Hwy 111 — NORTHBOUND

PM	126	0	41	51	25	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

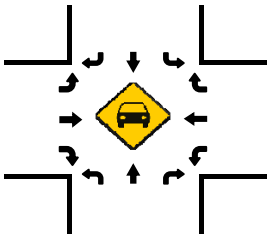
Total Vehicles (AM)



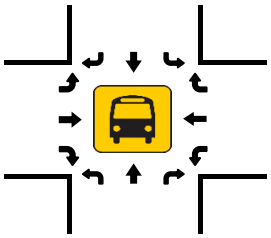
Total Vehicles (AM)



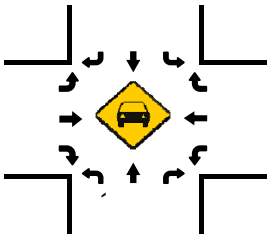
Total Vehicles (NOON)



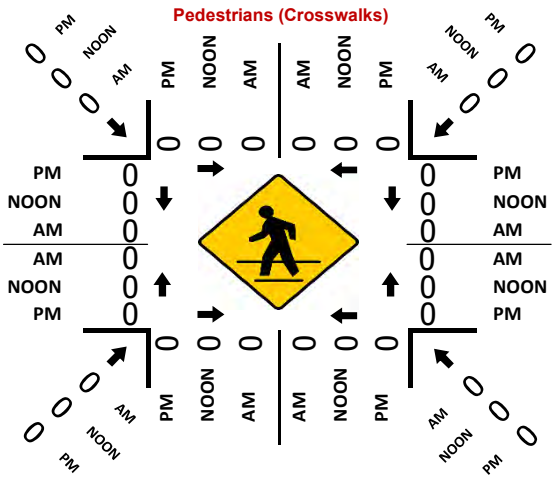
Total Vehicles (NOON)



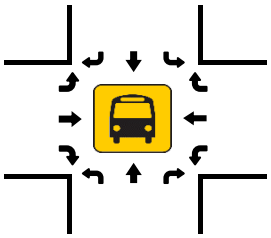
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

p SR-111 & SR-78/Ben Hulse Hwy
City: Brawley
Control: Signalized

Project ID: 19-04408-002
Date: 2019-11-08

Total

NS/EW Streets:	SR-111				SR-111				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2 NL	2 NT	1 NR	0 NU	1 SL	2 ST	1 SR	0 SU	1 EL	1 ET	1 ER	0 EU	1 WL	1 WT	1 WR	0 WU	TOTAL
5:00 PM	14	66	6	0	27	111	5	1	3	22	35	0	7	23	12	0	332
5:15 PM	16	92	5	0	13	141	2	0	10	15	32	0	6	16	7	0	355
5:30 PM	18	68	6	0	24	113	10	0	11	16	35	0	7	26	12	0	346
5:45 PM	22	63	5	0	22	122	15	0	8	15	40	0	6	19	7	0	344
6:00 PM	18	66	7	0	17	102	6	0	4	22	38	0	5	9	6	0	300
6:15 PM	14	64	4	0	16	106	6	0	5	15	21	0	14	15	11	0	291
6:30 PM	11	59	7	0	19	107	6	0	5	20	20	0	7	17	10	0	288
6:45 PM	18	42	1	0	20	113	5	0	11	9	26	0	4	13	5	0	267
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	131	520	41	0	158	915	55	1	57	134	247	0	56	138	70	0	2523
APPROACH %'s :	18.93%	75.14%	5.92%	0.00%	13.99%	81.05%	4.87%	0.09%	13.01%	30.59%	56.39%	0.00%	21.21%	52.27%	26.52%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	70	289	22	0	86	487	32	1	32	68	142	0	26	84	38	0	1377
PEAK HR FACTOR :	0.795	0.785	0.917	0.000	0.796	0.863	0.533	0.250	0.727	0.773	0.888	0.000	0.929	0.808	0.792	0.000	0.970
	0.843				0.953				0.960				0.822				

Prepared by National Data & Surveying Services

p

SR-111 & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-002
City: Brawley

Day: Friday
Date: 11/08/2019

PEAK HOURS

AM: NONE
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: NONE
NOON: NONE
PM: 05:00 PM - 07:00 PM

SR-111 SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	32	487	86	1	360	PM
	1	2	1	0		

SR-78/Ben Hulse Hwy EASTBOUND

AM	NOON	PM	
0	0	186	
0	0	0	0
0	0	32	1
0	0	68	1
0	0	142	1
AM	NOON	PM	

CONTROL

Signalized

TEV	0 AM	0 NOON	1377 PM
PHF			0.97

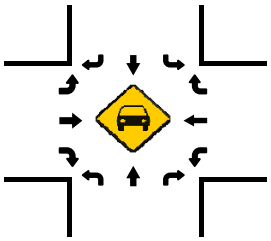
SR-78/Ben Hulse Hwy WESTBOUND

PM	NOON	AM	
1	38	0	0
1	84	0	0
1	26	0	0
0	0	0	0
176	0	0	
PM	NOON	AM	

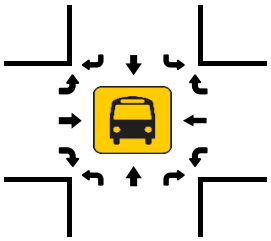
SR-111 NORTHBOUND

	0	2	2	1		
PM	655	0	70	289	22	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

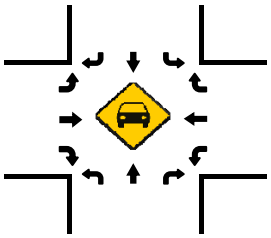
Total Vehicles (AM)



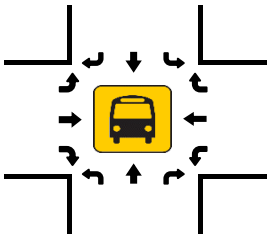
Total Vehicles (AM)



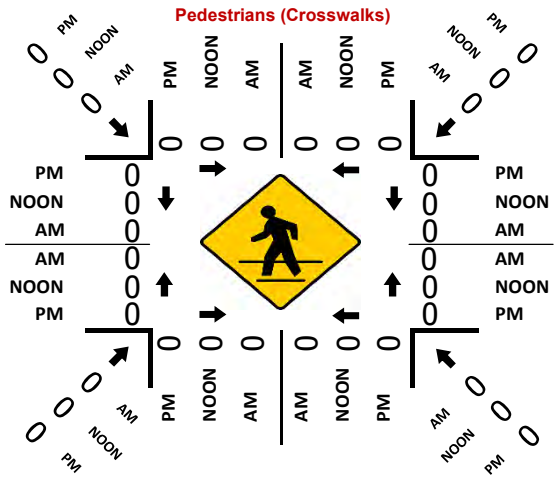
Total Vehicles (NOON)



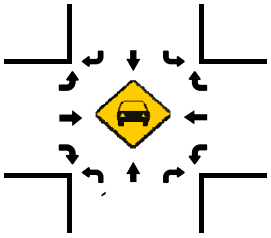
Total Vehicles (NOON)



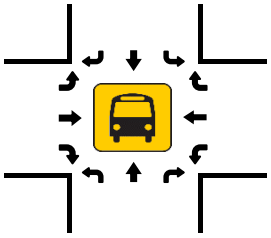
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Wiest Rd & SR-78/Ben Hulse Hwy
City: Brawley
Control: 2-Way Stop (NB/SB)

Project ID: 19-04408-003
Date: 2019-11-08

Total

NS/EW Streets:	Wiest Rd				Wiest Rd				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0.5	0.5	0	0	0.5	0.5	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	0	0	0	0	2	1	1	0	3	55	0	0	0	33	4	0	99
5:15 PM	0	0	0	0	8	1	1	0	1	32	0	0	0	26	5	0	74
5:30 PM	0	0	0	0	4	1	0	0	2	42	0	0	0	29	6	0	84
5:45 PM	0	0	0	0	4	2	4	0	0	31	0	0	0	14	0	0	55
6:00 PM	0	0	0	0	4	0	1	0	0	43	0	0	0	23	2	0	73
6:15 PM	0	0	0	0	1	1	2	0	1	34	0	0	0	28	3	0	70
6:30 PM	0	0	0	0	4	0	0	0	1	45	0	0	0	25	1	0	76
6:45 PM	0	0	0	0	4	1	1	0	0	31	1	0	0	15	1	0	54
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	31	7	10	0	8	313	1	0	0	193	22	0	585
APPROACH %'s :					64.58%	14.58%	20.83%	0.00%	2.48%	97.20%	0.31%	0.00%	0.00%	89.77%	10.23%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	18	5	6	0	6	160	0	0	0	102	15	0	312
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.563	0.625	0.375	0.000	0.500	0.727	0.000	0.000	0.000	0.773	0.625	0.000	0.788
					0.725				0.716				0.791				

Prepared by National Data & Surveying Services

Wiest Rd & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-003
City: Brawley

Day: Friday
Date: 11/08/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
05:00 PM - 06:00 PM	05:00 PM - 07:00 PM

Wiest Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	6	5	18	0	21	PM

SR-78/Ben Hulse Hwy — EASTBOUND

AM	NOON	PM	
0	0	108	
0	0	0	0
0	0	6	0
0	0	160	1
0	0	0	0
AM	NOON	PM	

SR-78/Ben Hulse Hwy — WESTBOUND

PM	NOON	AM	
15	0	0	1
102	0	0	1
0	0	0	0
0	0	0	0
178	0	0	
PM	NOON	AM	

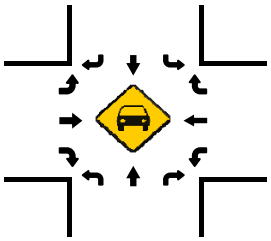
CONTROL			
2-Way Stop (NB/SB)			
TEV	0 AM	0 NOON	312 PM
PHF			0.79

	0.5	0.5	0	0	
	0	0	0.5	0.5	

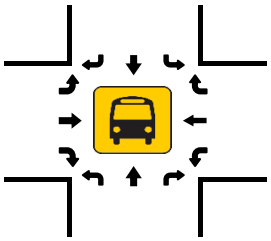
Wiest Rd — NORTHBOUND

PM	5	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

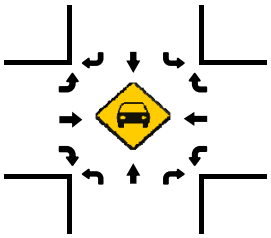
Total Vehicles (AM)



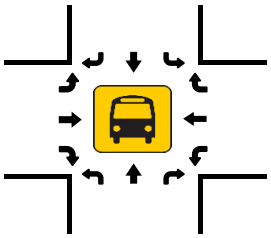
Total Vehicles (AM)



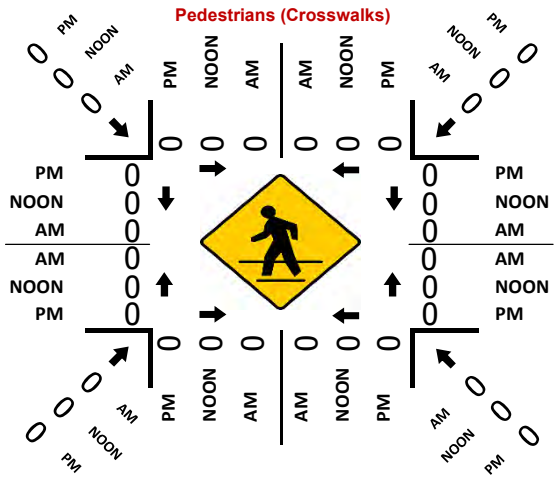
Total Vehicles (NOON)



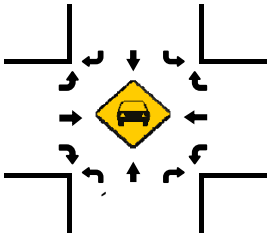
Total Vehicles (NOON)



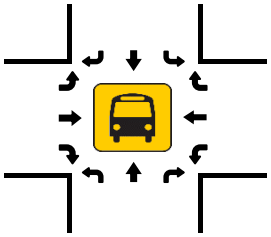
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-115 & SR-78 Interchange/Ben Hulse Hwy
City: Brawley
Control: 1-Way Stop (WB)

Project ID: 19-04408-004
Date: 2019-11-08

Total

NS/EW Streets:	SR-115				SR-115				SR-78 Interchange/Ben Hulse Hwy				SR-78 Interchange/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	14	0	4	0	0	0	0	0	0	40	23	0	8	21	0	0	110
5:15 PM	9	0	0	0	0	0	0	0	0	22	16	0	7	20	0	0	74
5:30 PM	17	0	3	0	0	0	0	0	0	24	17	0	4	14	0	0	79
5:45 PM	8	0	3	0	0	0	0	0	0	25	14	0	2	4	0	0	56
6:00 PM	9	0	0	0	0	0	0	0	0	42	13	0	5	16	0	0	85
6:15 PM	13	0	3	0	0	0	0	0	0	24	7	0	7	21	0	0	75
6:30 PM	8	0	4	0	0	0	0	0	0	32	12	0	0	12	0	0	68
6:45 PM	8	0	4	0	0	0	0	0	0	25	12	0	5	9	0	0	63
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	86	0	21	0	0	0	0	0	0	234	114	0	38	117	0	0	610
APPROACH %'s :	80.37%	0.00%	19.63%	0.00%					0.00%	67.24%	32.76%	0.00%	24.52%	75.48%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	48	0	10	0	0	0	0	0	0	111	70	0	21	59	0	0	319
PEAK HR FACTOR :	0.706	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.694	0.761	0.000	0.656	0.702	0.000	0.000	0.725
	0.725								0.718				0.690				

Prepared by National Data & Surveying Services

SR-115 & SR-78 Interchange/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-004
City: Brawley

Day: Friday
Date: 11/08/2019

PEAK HOURS

AM: NONE
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: NONE
NOON: NONE
PM: 05:00 PM - 07:00 PM

SR-115 SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

SR-78 Interchange/Ben Hulse Hwy EASTBOUND

AM	NOON	PM	
0	0	107	⇦
0	0	0	↶ 0
0	0	0	↱ 0
0	0	111	→ 1
0	0	70	↴ 1
AM	NOON	PM	

SR-78 Interchange/Ben Hulse Hwy WESTBOUND

PM	NOON	AM	
0	0	0	0 ↰
59	0	0	1 ←
21	0	0	1 ↙
0	0	0	0 ↶
121	0	0	⇨
PM	NOON	AM	

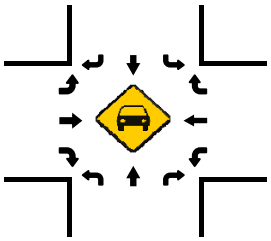
CONTROL: 1-Way Stop (WB)

	AM	NOON	PM
TEV	0	0	319
PHF			0.73

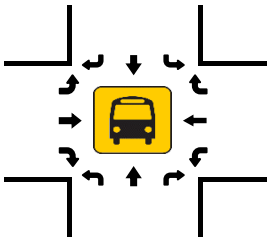
NORTHBOUND SR-115

PM	91	0	48	0	10	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM
		0	0	1	0	

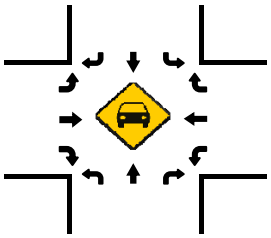
Total Vehicles (AM)



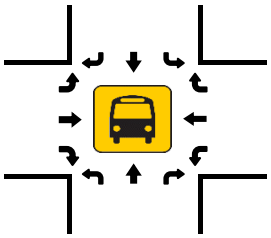
Total Vehicles (AM)



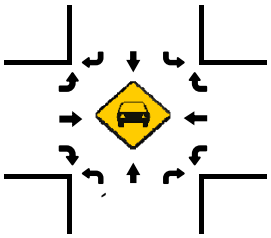
Total Vehicles (NOON)



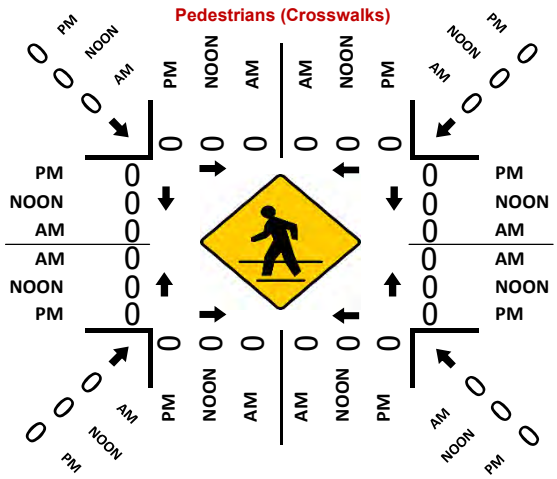
Total Vehicles (NOON)



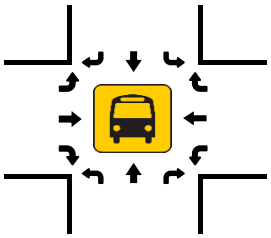
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Gecko Rd & SR-78/Ben Hulse Hwy
City: Brawley
Control: 1-Way Stop (NB)

Project ID: 19-04408-005
Date: 2019-10-31

Total

NS/EW Streets:	Gecko Rd				Gecko Rd				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0.5	0.5	0	0	0	0	0	0	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	1	0	0	0	0	0	0	0	0	27	0	0	1	29	0	0	58
5:15 PM	0	0	0	0	0	0	0	0	0	16	3	0	1	17	0	0	37
5:30 PM	3	0	1	0	0	0	0	0	0	10	1	0	0	17	0	0	32
5:45 PM	2	0	0	0	0	0	0	0	0	10	3	0	0	18	0	0	33
6:00 PM	2	0	0	0	0	0	0	0	0	11	3	0	2	23	0	0	41
6:15 PM	3	0	0	0	0	0	0	0	0	8	3	0	0	20	0	0	34
6:30 PM	1	0	0	0	0	0	0	0	0	12	1	0	4	6	0	0	24
6:45 PM	0	0	0	0	0	0	0	0	0	12	1	0	1	6	0	0	20
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	12	0	1	0	0	0	0	0	0	106	15	0	9	136	0	0	279
APPROACH %'s :	92.31%	0.00%	7.69%	0.00%					0.00%	87.60%	12.40%	0.00%	6.21%	93.79%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	6	0	1	0	0	0	0	0	0	63	7	0	2	81	0	0	160
PEAK HR FACTOR :	0.500	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.583	0.000	0.500	0.698	0.000	0.000	0.690
	0.438								0.648				0.692				

Prepared by National Data & Surveying Services

Gecko Rd & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-005
City: Brawley

Day: Thursday
Date: 10/31/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
05:00 PM - 06:00 PM	05:00 PM - 07:00 PM

Gecko Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

SR-78/Ben Hulse Hwy — EASTBOUND

AM	NOON	PM	
0	0	87	
0	0	0	0
0	0	0	0
0	0	63	1
0	0	7	0
AM	NOON	PM	

SR-78/Ben Hulse Hwy — WESTBOUND

PM	NOON	AM	
0	0	0	0
81	0	0	1
2	0	0	1
0	0	0	0
64	0	0	
PM	NOON	AM	

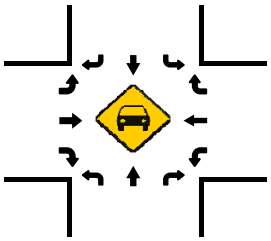
CONTROL: 1-Way Stop (NB)

	AM	NOON	PM
TEV	0	0	160
PHF			0.69

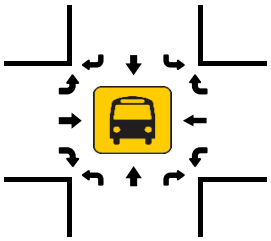
Gecko Rd — NORTHBOUND

PM	9	0	6	0	1	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM
		0	0	0.5	0.5	

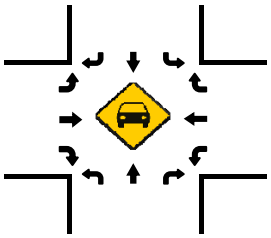
Total Vehicles (AM)



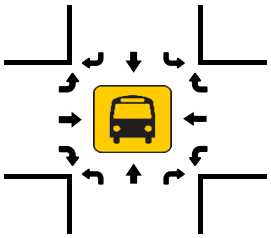
Total Vehicles (AM)



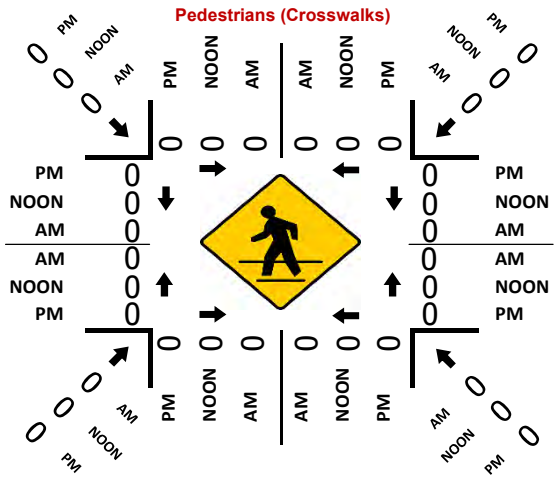
Total Vehicles (NOON)



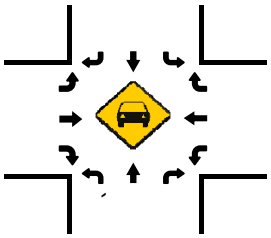
Total Vehicles (NOON)



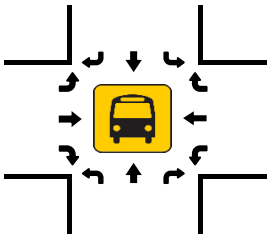
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Osborne Park Rd & SR-78/Ben Hulse Hwy
City: Brawley
Control: 1-Way Stop (NB)

Project ID: 19-04408-006
Date: 2019-10-31

Total

NS/EW Streets:	Osborne Park Rd				Osborne Park Rd				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0.5	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	1	0	0	0	0	0	0	0	0	20	0	0	1	29	0	0	51
5:15 PM	2	0	0	0	0	0	0	0	0	20	0	0	1	17	0	0	40
5:30 PM	0	0	0	0	0	0	0	0	0	13	0	0	0	16	0	0	29
5:45 PM	0	0	1	0	0	0	0	0	0	10	1	0	0	16	0	0	28
6:00 PM	0	0	0	0	0	0	0	0	0	11	0	0	0	28	0	0	39
6:15 PM	0	0	0	0	0	0	0	0	0	9	0	0	0	16	0	0	25
6:30 PM	0	0	0	0	0	0	0	0	0	10	0	0	0	15	0	0	25
6:45 PM	0	0	0	0	0	0	0	0	0	11	0	0	0	6	0	0	17
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	0	1	0	0	0	0	0	0	104	1	0	2	143	0	0	254
APPROACH %'s :	75.00%	0.00%	25.00%	0.00%					0.00%	99.05%	0.95%	0.00%	1.38%	98.62%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	3	0	1	0	0	0	0	0	0	63	1	0	2	78	0	0	148
PEAK HR FACTOR :	0.375	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.788	0.250	0.000	0.500	0.672	0.000	0.000	0.725
	0.500								0.800				0.667				

Prepared by National Data & Surveying Services

Osborne Park Rd & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-006
City: Brawley

Day: Thursday
Date: 10/31/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
05:00 PM - 06:00 PM	05:00 PM - 07:00 PM

Osborne Park Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

SR-78/Ben Hulse Hwy — EASTBOUND

AM	NOON	PM	
0	0	81	
0	0	0	0
0	0	0	0
0	0	63	1
0	0	1	0
AM	NOON	PM	

SR-78/Ben Hulse Hwy — WESTBOUND

PM	NOON	AM	
0	0	0	0
78	0	0	1
2	0	0	0
0	0	0	0
64	0	0	
PM	NOON	AM	

CONTROL: 1-Way Stop (NB)

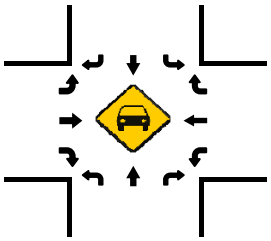
	AM	NOON	PM
TEV	0	0	148
PHF			0.73

Osborne Park Rd — NORTHBOUND

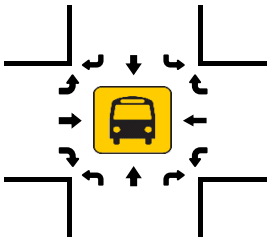
PM	3	0	3	0	1	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

0 0 0 0 — 0 1 0 0 — 0 0 0.5 0.5

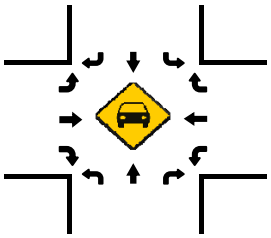
Total Vehicles (AM)



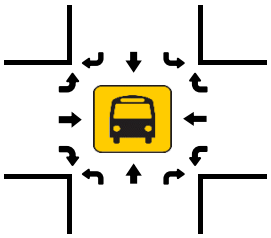
Total Vehicles (AM)



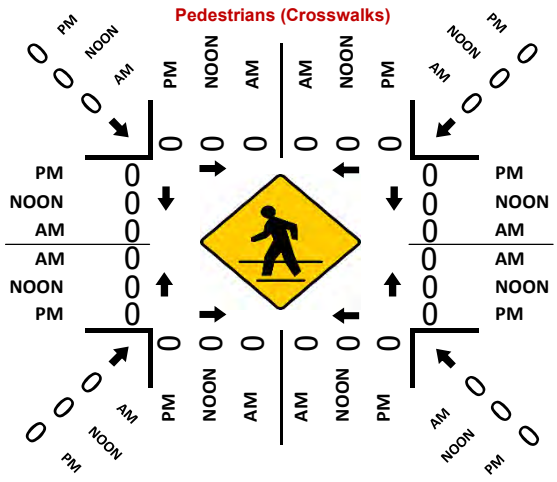
Total Vehicles (NOON)



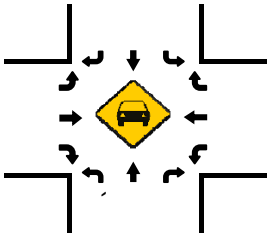
Total Vehicles (NOON)



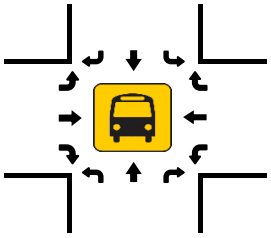
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Glamis Flats Rd & SR-78/Ben Hulse Hwy
City: Brawley
Control: 1-Way Stop (NB)

Project ID: 19-04408-007
Date: 2019-10-31

Total

NS/EW Streets:	Glamis Flats Rd				Glamis Flats Rd				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0.5	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	0	0	1	0	0	0	0	0	0	17	2	0	0	31	0	0	51
5:15 PM	3	0	0	0	0	0	0	0	0	15	4	0	0	12	0	0	34
5:30 PM	0	0	0	0	0	0	0	0	0	13	1	0	0	14	0	0	28
5:45 PM	2	0	0	0	0	0	0	0	0	10	1	0	2	19	0	0	34
6:00 PM	0	0	0	0	0	0	0	0	0	12	3	0	0	26	0	0	41
6:15 PM	0	0	1	0	0	0	0	0	0	5	3	0	2	16	0	0	27
6:30 PM	2	0	0	0	0	0	0	0	0	10	1	0	0	11	0	0	24
6:45 PM	0	0	0	0	0	0	0	0	0	10	0	0	1	6	0	0	17
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	0	2	0	0	0	0	0	0	92	15	0	5	135	0	0	256
APPROACH %'s :	77.78%	0.00%	22.22%	0.00%					0.00%	85.98%	14.02%	0.00%	3.57%	96.43%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	5	0	1	0	0	0	0	0	0	55	8	0	2	76	0	0	147
PEAK HR FACTOR :	0.417	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.809	0.500	0.000	0.250	0.613	0.000	0.000	0.721
	0.500								0.829				0.629				

Prepared by National Data & Surveying Services

Glamis Flats Rd & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-007
City: Brawley

Day: Thursday
Date: 10/31/2019

PEAK HOURS		COUNT PERIODS
AM	NONE	NONE
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	05:00 PM - 07:00 PM

SOUTHBOUND – Glamis Flats Rd

	Right	Thru	Left	U-Turn	Departing
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
Lanes	0	0	0	0	

WESTBOUND – SR-78/Ben Hulse Hwy

Movement	Lanes	PM	NOON	AM
Right	0	0	0	0
Thru	1	76	0	0
Left	0	2	0	0
U-Turn	0	0	0	0
Departing		56	0	0

EASTBOUND – SR-78/Ben Hulse Hwy

Movement	AM	NOON	PM	Lanes
Departing	0	0	81	
U-Turn	0	0	0	0
Left	0	0	0	0
Thru	0	0	55	1
Right	0	0	8	0

NORTHBOUND – Glamis Flats Rd

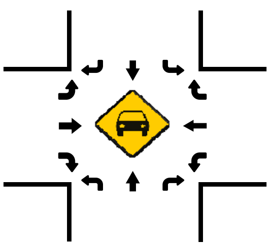
	Departing	U-Turn	Left	Thru	Right
Lanes		0	0	0.5	0.5
PM	10	0	5	0	1
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL

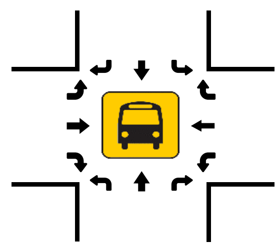
1-Way Stop (NB)

	AM	NOON	PM
TEV	0	0	147
PHF			0.72

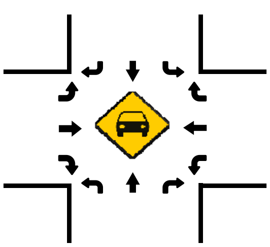
Total Vehicles (AM)



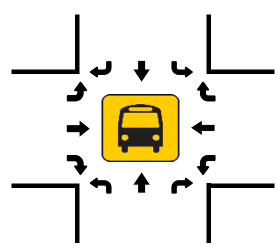
Total Vehicles (AM)



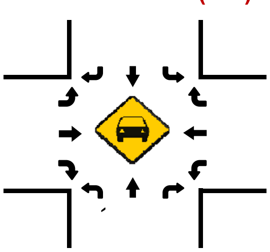
Total Vehicles (NOON)



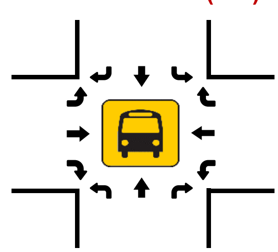
Total Vehicles (NOON)



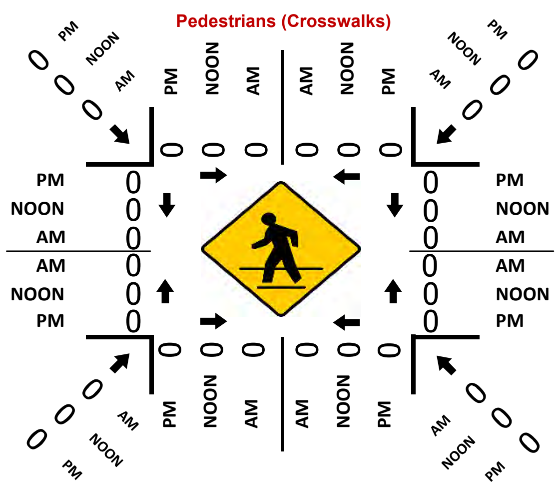
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Wash Rd & SR-78/Ben Hulse Hwy
City: Brawley
Control: 1-Way Stop (SB)

Project ID: 19-04408-008
Date: 2019-10-31

Total

NS/EW Streets:	Wash Rd				Wash Rd				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	1	0	0	0	0	0	0	0	0	16	1	0	0	32	0	0	50
5:15 PM	0	0	0	0	0	0	0	0	0	12	2	0	1	10	0	0	25
5:30 PM	0	0	0	0	0	0	0	0	0	11	1	0	1	16	0	0	29
5:45 PM	0	0	0	0	0	0	0	0	0	10	2	0	0	19	0	0	31
6:00 PM	1	0	0	0	0	0	0	0	0	6	3	0	2	26	0	0	38
6:15 PM	0	0	0	0	0	0	0	0	0	5	0	0	3	16	0	0	24
6:30 PM	0	0	0	0	0	0	0	0	0	7	1	0	2	10	0	0	20
6:45 PM	0	0	1	0	0	0	0	0	0	4	4	0	0	6	0	0	15
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	1	0	0	0	0	0	0	71	14	0	9	135	0	0	232
APPROACH %'s :	66.67%	0.00%	33.33%	0.00%					0.00%	83.53%	16.47%	0.00%	6.25%	93.75%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	49	6	0	2	77	0	0	135
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.766	0.750	0.000	0.500	0.602	0.000	0.000	0.675
	0.250								0.809				0.617				

Prepared by National Data & Surveying Services

Wash Rd & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-008
City: Brawley

Day: Thursday
Date: 10/31/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
05:00 PM - 06:00 PM	05:00 PM - 07:00 PM

Wash Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

SR-78/Ben Hulse Hwy — EASTBOUND

AM	NOON	PM	
0	0	78	
0	0	0	0
0	0	0	0
0	0	49	1
0	0	6	0
AM	NOON	PM	

SR-78/Ben Hulse Hwy — WESTBOUND

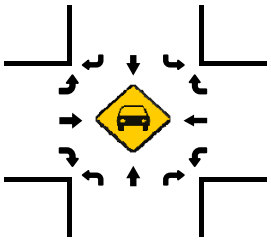
PM	NOON	AM	
0	0	0	0
77	0	0	1
2	0	0	0
0	0	0	0
49	0	0	
PM	NOON	AM	

CONTROL			
1-Way Stop (SB)			
TEV	0 AM	0 NOON	135 PM
PHF			0.68

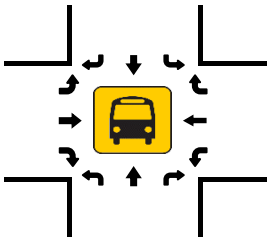
NORTHBOUND — Wash Rd

PM	8	0	1	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

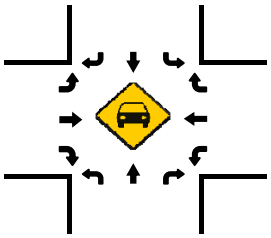
Total Vehicles (AM)



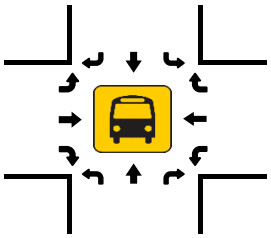
Total Vehicles (AM)



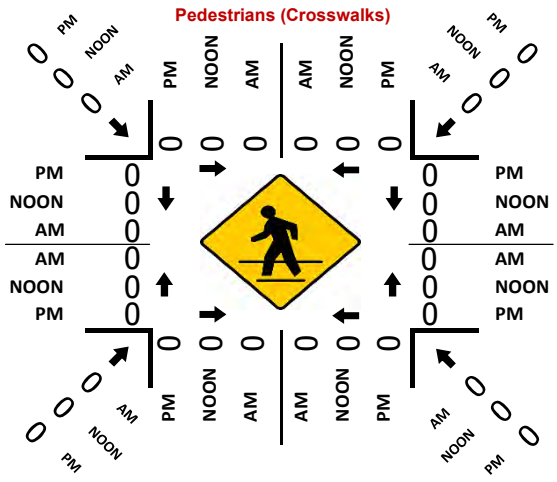
Total Vehicles (NOON)



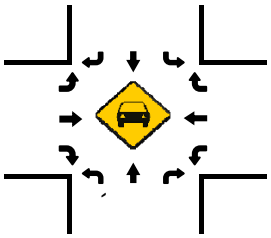
Total Vehicles (NOON)



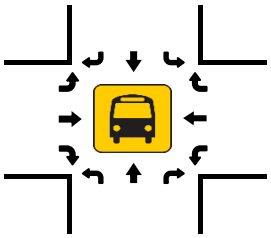
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Old Hwy 111 & SR-78/Ben Hulse Hwy
City: Brawley
Control: Signalized

Project ID: 19-04408-001
Date: 2019-11-02

Total

NS/EW Streets:	Old Hwy 111				Old Hwy 111				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	8	3	4	0	5	5	6	0	7	26	4	0	4	19	7	0	98
5:15 PM	7	15	5	0	9	10	4	0	5	16	7	0	1	23	5	0	107
5:30 PM	13	3	4	0	2	11	8	0	5	8	9	0	3	13	6	0	85
5:45 PM	7	6	3	0	5	7	7	0	4	12	4	0	2	16	1	0	74
6:00 PM	6	8	6	0	10	11	4	0	4	24	6	0	4	12	5	0	100
6:15 PM	5	5	4	0	4	3	7	0	4	20	9	0	7	28	2	0	98
6:30 PM	7	8	2	0	6	4	3	0	7	23	3	0	3	25	5	0	96
6:45 PM	3	8	3	0	6	10	8	0	7	9	4	0	2	25	6	0	91
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	56	56	31	0	47	61	47	0	43	138	46	0	26	161	37	0	749
APPROACH %'s :	39.16%	39.16%	21.68%	0.00%	30.32%	39.35%	30.32%	0.00%	18.94%	60.79%	20.26%	0.00%	11.61%	71.88%	16.52%	0.00%	
PEAK HR :	06:00 PM - 07:00 PM																TOTAL
PEAK HR VOL :	21	29	15	0	26	28	22	0	22	76	22	0	16	90	18	0	385
PEAK HR FACTOR :	0.750	0.906	0.625	0.000	0.650	0.636	0.688	0.000	0.786	0.792	0.611	0.000	0.571	0.804	0.750	0.000	0.963
	0.813				0.760				0.882				0.838				

Prepared by National Data & Surveying Services

Old Hwy 111 & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-001
City: Brawley

Day: Saturday
Date: 11/02/2019

	PEAK HOURS	COUNT PERIODS
AM	NONE	NONE
NOON	NONE	NONE
PM	06:00 PM - 07:00 PM	05:00 PM - 07:00 PM

Old Hwy 111 – SOUTHBOUND

	Right	Thru	Left	U-Turn	Departing
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	22	28	26	0	69
Lanes	0	1	1	0	

SR-78/Ben Hulse Hwy – EASTBOUND

	AM	NOON	PM	Lanes
Departing	0	0	133	
U-Turn	0	0	0	0
Left	0	0	22	1
Thru	0	0	76	1
Right	0	0	22	1

SR-78/Ben Hulse Hwy – WESTBOUND

	PM	NOON	AM	Lanes
Right	18	0	0	0
Thru	90	0	0	1
Left	16	0	0	1
U-Turn	0	0	0	0
Departing	117	0	0	

Old Hwy 111 – NORTHBOUND

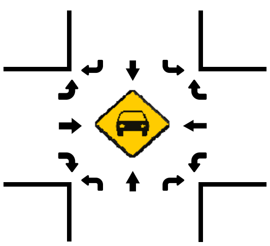
	Departing	U-Turn	Left	Thru	Right
Lanes		0	1	1	0
PM	66	0	21	29	15
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL

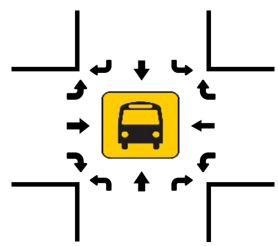
Signalized

	AM	NOON	PM
TEV	0	0	385
PHF			0.96

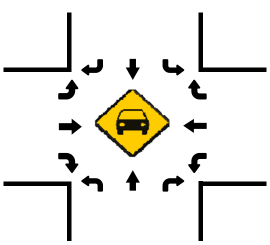
Total Vehicles (AM)



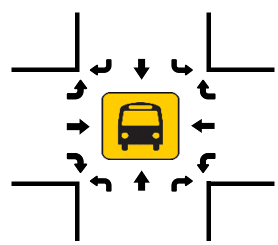
Total Vehicles (AM)



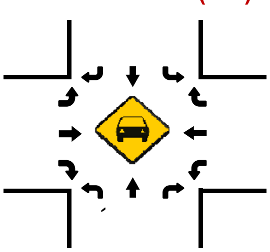
Total Vehicles (NOON)



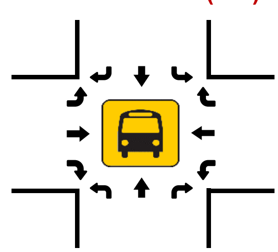
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg	0 / 0	0 / 0	0 / 0
South leg	0 / 0	0 / 0	0 / 0
West leg	0 / 0	0 / 0	0 / 0
East leg	0 / 0	0 / 0	0 / 0
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-111 & SR-78/Ben Hulse Hwy
City: Brawley
Control: Signalized

Project ID: 19-04408-002
Date: 2019-11-02

Total

NS/EW Streets:	SR-111				SR-111				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	1	2	1	0	1	1	1	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	11	63	3	0	10	60	12	1	8	7	14	0	5	8	4	0	206
5:15 PM	12	52	4	0	4	63	1	0	2	3	33	0	4	17	6	0	201
5:30 PM	16	59	0	0	10	54	0	0	8	7	14	0	3	10	6	0	187
5:45 PM	9	65	3	0	3	77	4	0	3	4	8	0	3	6	0	0	185
6:00 PM	13	53	0	0	7	53	3	0	7	9	20	0	6	11	4	0	186
6:15 PM	15	41	4	0	3	56	6	0	10	5	21	0	8	22	6	0	197
6:30 PM	14	56	1	0	9	56	7	0	2	11	20	0	4	15	6	0	201
6:45 PM	19	73	3	0	10	56	5	0	5	3	16	0	8	16	6	0	220
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	109	462	18	0	56	475	38	1	45	49	146	0	41	105	38	0	1583
APPROACH %'s :	18.51%	78.44%	3.06%	0.00%	9.82%	83.33%	6.67%	0.18%	18.75%	20.42%	60.83%	0.00%	22.28%	57.07%	20.65%	0.00%	
PEAK HR :	06:00 PM - 07:00 PM																TOTAL
PEAK HR VOL :	61	223	8	0	29	221	21	0	24	28	77	0	26	64	22	0	804
PEAK HR FACTOR :	0.803	0.764	0.500	0.000	0.725	0.987	0.750	0.000	0.600	0.636	0.917	0.000	0.813	0.727	0.917	0.000	0.914
	0.768				0.941				0.896				0.778				

Prepared by National Data & Surveying Services

SR-111 & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-002
City: Brawley

Day: Saturday
Date: 11/02/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
06:00 PM - 07:00 PM	05:00 PM - 07:00 PM

SR-111 SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	21	221	29	0	269	PM

SR-78/Ben Hulse Hwy EASTBOUND

AM	NOON	PM	
0	0	146	
0	0	0	0
0	0	24	1
0	0	28	1
0	0	77	1
AM	NOON	PM	

SR-78/Ben Hulse Hwy WESTBOUND

PM	NOON	AM	
22	0	0	1
64	0	0	1
26	0	0	1
0	0	0	0
65	0	0	
PM	NOON	AM	

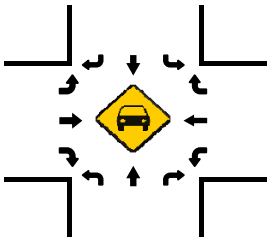
	1	2	1	0
	0	2	2	1

CONTROL			
Signalized			
TEV	0 AM	0 NOON	804 PM
PHF			0.91

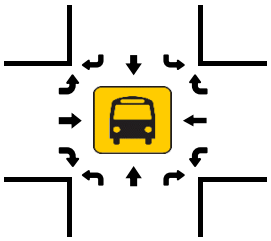
SR-111 NORTHBOUND

PM	324	0	61	223	8	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

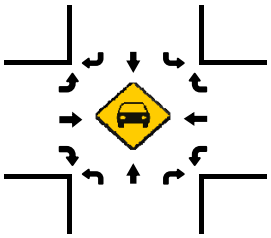
Total Vehicles (AM)



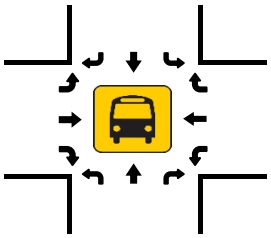
Total Vehicles (AM)



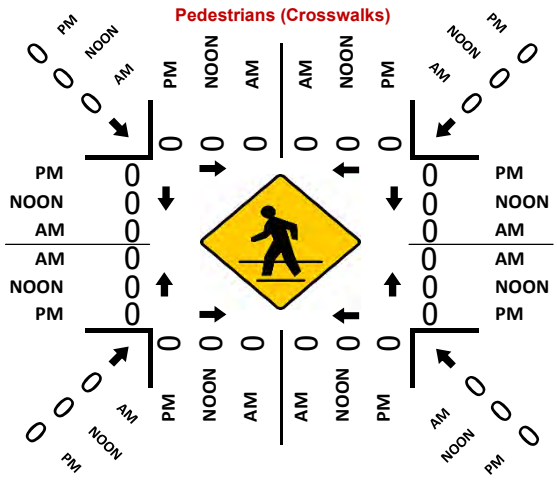
Total Vehicles (NOON)



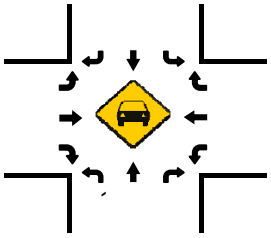
Total Vehicles (NOON)



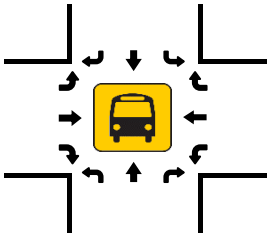
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Wiest Rd & SR-78/Ben Hulse Hwy
City: Brawley
Control: 2-Way Stop (NB/SB)

Project ID: 19-04408-003
Date: 2019-11-02

Total

NS/EW Streets:	Wiest Rd				Wiest Rd				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0.5	0.5	0	0	0.5	0.5	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	0	0	0	0	5	0	1	0	0	19	0	0	1	20	1	0	47
5:15 PM	0	1	0	0	2	0	1	0	1	12	0	0	0	19	1	1	38
5:30 PM	0	0	0	0	0	0	2	0	3	9	0	0	0	14	0	0	28
5:45 PM	0	0	0	0	3	0	3	0	0	11	0	0	0	8	2	0	27
6:00 PM	0	0	0	0	4	0	4	0	0	13	0	0	0	24	0	0	45
6:15 PM	0	0	0	0	5	0	0	0	0	9	0	0	0	32	1	0	47
6:30 PM	0	0	0	0	3	0	1	0	2	18	0	0	0	13	2	0	39
6:45 PM	0	0	0	0	1	0	3	0	0	12	0	0	0	21	2	0	39
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	23	0	15	0	6	103	0	0	1	151	9	1	310
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	60.53%	0.00%	39.47%	0.00%	5.50%	94.50%	0.00%	0.00%	0.62%	93.21%	5.56%	0.62%	
PEAK HR :	06:00 PM - 07:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	13	0	8	0	2	52	0	0	0	90	5	0	170
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.650	0.000	0.500	0.000	0.250	0.722	0.000	0.000	0.000	0.703	0.625	0.000	0.904
					0.656				0.675				0.720				

Prepared by National Data & Surveying Services

Wiest Rd & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-003
City: Brawley

Day: Saturday
Date: 11/02/2019

	PEAK HOURS	COUNT PERIODS
AM	NONE	NONE
NOON	NONE	NONE
PM	06:00 PM - 07:00 PM	05:00 PM - 07:00 PM

Wiest Rd — SOUTHBOUND

	U-turn	Left	Through	Right	Departing
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	8	0	13	0	7
Lanes	0.5	0.5	0	0	

SR-78/Ben Hulse Hwy — EASTBOUND

	AM	NOON	PM	Lanes
Departing	0	0	98	
U-turn	0	0	0	0
Left	0	0	2	0
Through	0	0	52	1
Right	0	0	0	0

SR-78/Ben Hulse Hwy — WESTBOUND

	PM	NOON	AM	Lanes
Right	5	0	0	1
Through	90	0	0	1
Left	0	0	0	0
U-turn	0	0	0	0
Departing	65	0	0	

Wiest Rd — NORTHBOUND

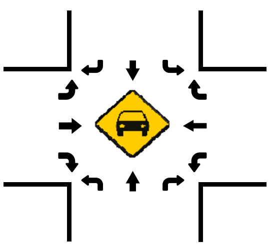
	Departing	U-turn	Left	Through	Right
Lanes		0	0	0.5	0.5
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL

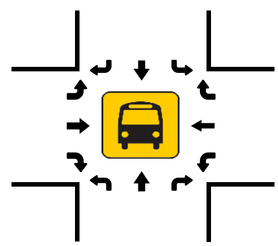
2-Way Stop (NB/SB)

	AM	NOON	PM
TEV	0	0	170
PHF			0.90

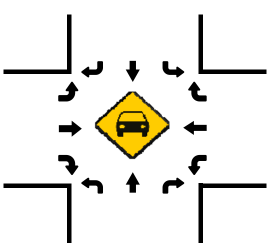
Total Vehicles (AM)



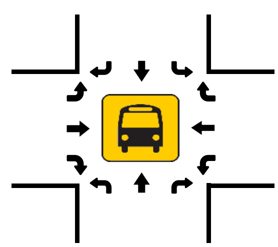
Total Vehicles (AM)



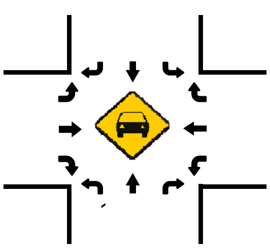
Total Vehicles (NOON)



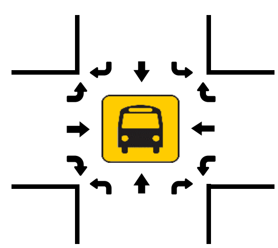
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west side)	0	0	0
North leg (east side)	0	0	0
West leg (north side)	0	0	0
West leg (south side)	0	0	0
East leg (north side)	0	0	0
East leg (south side)	0	0	0
South leg (west side)	0	0	0
South leg (east side)	0	0	0
Northwest diagonal	0	0	0
Northeast diagonal	0	0	0
Southwest diagonal	0	0	0
Southeast diagonal	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-115 & SR-78 Interchange/Ben Hulse Hwy
City: Brawley
Control: 1-Way Stop (WB)

Project ID: 19-04408-004
Date: 2019-11-02

Total

NS/EW Streets:	SR-115				SR-115				SR-78 Interchange/Ben Hulse Hwy				SR-78 Interchange/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	9	0	1	0	0	0	0	0	0	10	11	0	2	17	0	0	50
5:15 PM	9	0	0	0	0	0	0	0	0	7	7	0	0	10	0	0	33
5:30 PM	6	0	0	0	0	0	0	0	0	7	8	0	1	5	0	0	27
5:45 PM	4	0	0	0	0	0	0	0	0	2	10	0	2	4	0	0	22
6:00 PM	4	0	0	0	0	0	0	0	0	6	12	0	2	18	0	0	42
6:15 PM	7	0	0	0	0	0	0	0	0	4	10	0	3	26	0	0	50
6:30 PM	7	0	1	0	0	0	0	0	0	6	10	0	2	11	0	0	37
6:45 PM	6	0	0	0	0	0	0	0	0	9	7	0	5	14	0	0	41
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	52	0	2	0	0	0	0	0	0	51	75	0	17	105	0	0	302
APPROACH %'s :	96.30%	0.00%	3.70%	0.00%					0.00%	40.48%	59.52%	0.00%	13.93%	86.07%	0.00%	0.00%	
PEAK HR :	06:00 PM - 07:00 PM																TOTAL
PEAK HR VOL :	24	0	1	0	0	0	0	0	0	25	39	0	12	69	0	0	170
PEAK HR FACTOR :	0.857	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.694	0.813	0.000	0.600	0.663	0.000	0.000	0.850
	0.781								0.889				0.698				

Prepared by National Data & Surveying Services

SR-115 & SR-78 Interchange/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-004
City: Brawley

Day: Saturday
Date: 11/02/2019

PEAK HOURS	
AM	NONE
NOON	NONE
PM	06:00 PM - 07:00 PM

COUNT PERIODS	
AM	NONE
NOON	NONE
PM	05:00 PM - 07:00 PM

SR-115 SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (SR-78 Interchange/Ben Hulse Hwy)

AM	NOON	PM	
0	0	93	⇦
0	0	0	↶ 0
0	0	0	↱ 0
0	0	25	→ 1
0	0	39	↴ 1
AM	NOON	PM	

WESTBOUND (SR-78 Interchange/Ben Hulse Hwy)

	PM	NOON	AM
0 ↷	0	0	0
1 ←	69	0	0
1 ↰	12	0	0
0 ↶	0	0	0
⇨	26	0	0
	PM	NOON	AM

CONTROL

1-Way Stop (WB)

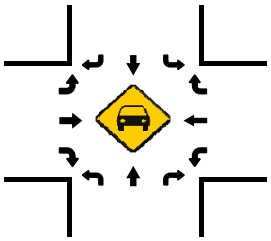
	AM	NOON	PM
TEV	0	0	170
PHF			0.85

NORTHBOUND

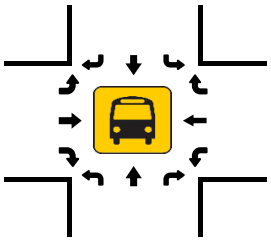
		0	0	1	0	
PM	51	0	24	0	1	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

SR-115

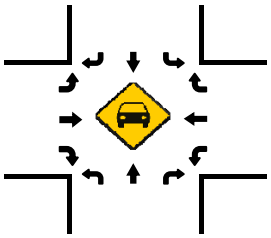
Total Vehicles (AM)



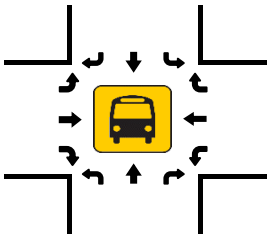
Total Vehicles (AM)



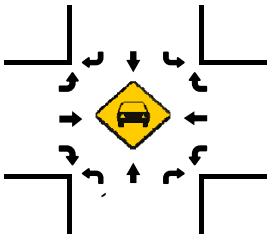
Total Vehicles (NOON)



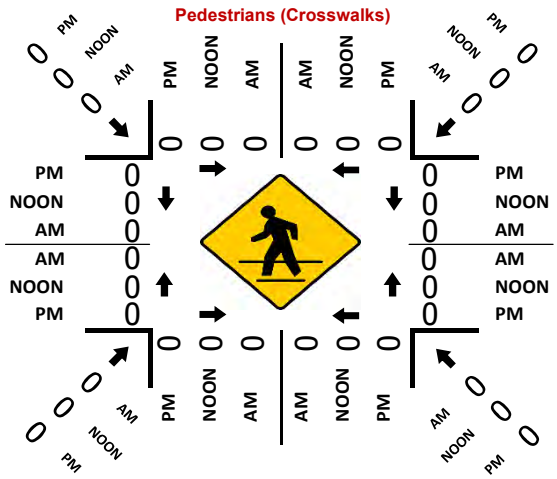
Total Vehicles (NOON)



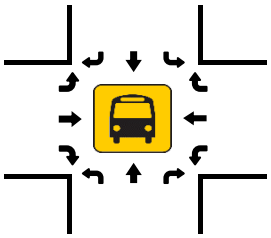
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Gecko Rd & SR-78/Ben Hulse Hwy
City: Brawley
Control: 1-Way Stop (NB)

Project ID: 19-04408-005
Date: 2019-11-02

Total

NS/EW Streets:	Gecko Rd				Gecko Rd				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0.5	0.5	0	0	0	0	0	0	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	1	0	1	0	0	0	0	0	0	8	3	0	9	19	0	0	41
5:15 PM	1	0	8	0	0	0	0	0	0	18	1	0	6	10	0	0	44
5:30 PM	2	0	7	0	0	0	0	0	0	6	1	0	8	9	0	0	33
5:45 PM	2	0	7	0	0	0	0	0	0	5	1	0	1	19	0	0	35
6:00 PM	10	0	11	0	0	0	0	0	0	2	2	0	2	24	0	0	51
6:15 PM	2	0	11	0	0	0	0	0	0	5	0	0	5	15	0	0	38
6:30 PM	5	0	3	0	0	0	0	0	0	3	0	0	3	16	0	0	30
6:45 PM	3	0	4	0	0	0	0	0	0	7	2	0	0	11	0	0	27
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	26	0	52	0	0	0	0	0	0	54	10	0	34	123	0	0	299
APPROACH %'s :	33.33%	0.00%	66.67%	0.00%					0.00%	84.38%	15.63%	0.00%	21.66%	78.34%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	15	0	33	0	0	0	0	0	0	31	5	0	17	62	0	0	163
PEAK HR FACTOR :	0.375	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.431	0.625	0.000	0.531	0.646	0.000	0.000	0.799
	0.571								0.474				0.760				

Prepared by National Data & Surveying Services

Gecko Rd & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-005
City: Brawley

Day: Saturday
Date: 11/02/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
05:15 PM - 06:15 PM	05:00 PM - 07:00 PM

Gecko Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

SR-78/Ben Hulse Hwy — EASTBOUND

AM	NOON	PM	
0	0	77	⇦
0	0	0	↶ 0
0	0	0	↱ 0
0	0	31	→ 1
0	0	5	↷ 0
AM	NOON	PM	

SR-78/Ben Hulse Hwy — WESTBOUND

PM	NOON	AM	
0	0	0	0 ↰
62	0	0	1 ←
17	0	0	1 ↰
0	0	0	0 ↶
64	0	0	⇨
PM	NOON	AM	

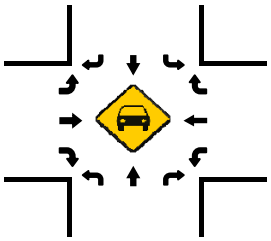
CONTROL: 1-Way Stop (NB)

	AM	NOON	PM
TEV	0	0	163
PHF			0.80

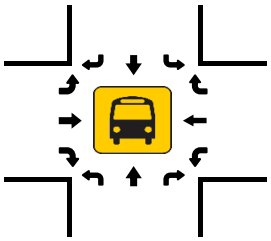
Gecko Rd — NORTHBOUND

PM	22	0	15	0	33	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM
		0	0	0.5	0.5	

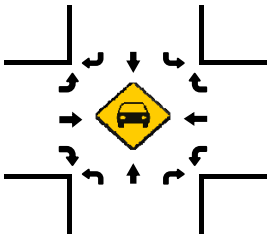
Total Vehicles (AM)



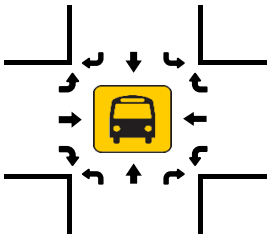
Total Vehicles (AM)



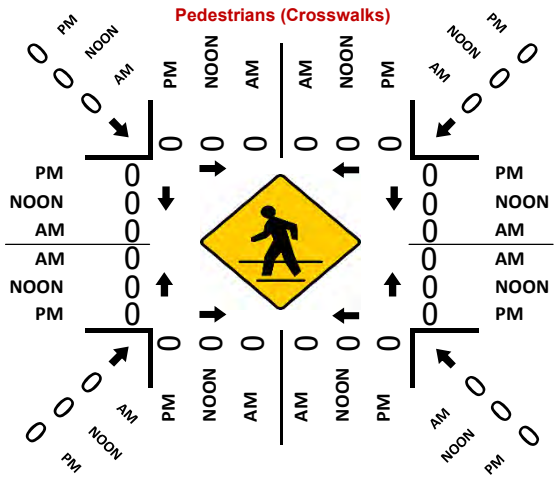
Total Vehicles (NOON)



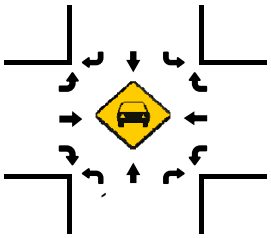
Total Vehicles (NOON)



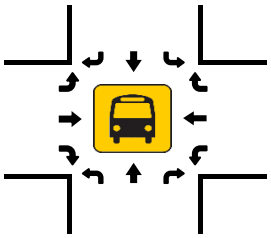
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Osborne Park Rd & SR-78/Ben Hulse Hwy
City: Brawley
Control: 1-Way Stop (NB)

Project ID: 19-04408-006
Date: 2019-11-02

Total

NS/EW Streets:	Osborne Park Rd				Osborne Park Rd				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0.5	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	3	0	0	0	0	0	0	0	0	9	0	0	3	20	0	0	35
5:15 PM	2	0	1	0	0	0	0	0	0	23	1	0	2	16	0	0	45
5:30 PM	0	0	0	0	0	0	0	0	0	14	0	0	2	17	0	0	33
5:45 PM	0	0	2	0	0	0	0	0	0	10	0	0	0	17	0	0	29
6:00 PM	4	0	2	0	0	0	0	0	0	14	0	0	0	28	0	0	48
6:15 PM	5	0	0	0	0	0	0	0	0	14	1	0	0	15	0	0	35
6:30 PM	0	0	1	0	0	0	0	0	0	6	0	0	0	15	0	0	22
6:45 PM	0	0	0	0	0	0	0	0	0	12	0	0	1	9	0	0	22
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	0	6	0	0	0	0	0	0	102	2	0	8	137	0	0	269
APPROACH %'s :	70.00%	0.00%	30.00%	0.00%					0.00%	98.08%	1.92%	0.00%	5.52%	94.48%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	6	0	5	0	0	0	0	0	0	61	1	0	4	78	0	0	155
PEAK HR FACTOR :	0.375	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.663	0.250	0.000	0.500	0.696	0.000	0.000	0.807
	0.458								0.646				0.732				

Prepared by National Data & Surveying Services

Osborne Park Rd & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-006
City: Brawley

Day: Saturday
Date: 11/02/2019

PEAK HOURS	
AM	NONE
NOON	NONE
PM	05:15 PM - 06:15 PM

COUNT PERIODS	
AM	NONE
NOON	NONE
PM	05:00 PM - 07:00 PM

Osborne Park Rd — SOUTHBOUND

	L	T	R	U	
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0

SR-78/Ben Hulse Hwy — EASTBOUND

	L	T	R	
AM	0	0	0	0
NOON	0	0	0	0
PM	0	0	61	1
	0	0	1	0
	0	0	84	

SR-78/Ben Hulse Hwy — WESTBOUND

	L	T	R	
	0	0	0	0
	0	78	0	1
	0	4	0	0
	0	0	0	0
		66	0	0
PM	0	0	0	
NOON	0	0	0	
AM	0	0	0	

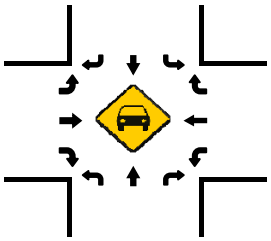
Osborne Park Rd — NORTHBOUND

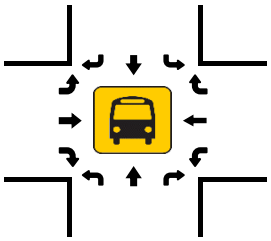
	L	T	R	U	
PM	5	0	6	0	5
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL			
1-Way Stop (NB)			
TEV	0 AM	0 NOON	155 PM
PHF			0.81

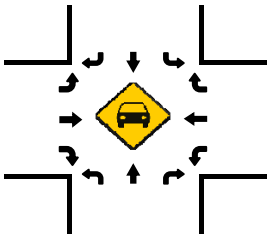
0 0 0 0 — 0 1 0 0 — 0 0 0.5 0.5

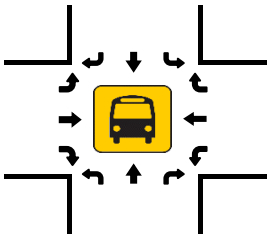
Total Vehicles (AM)



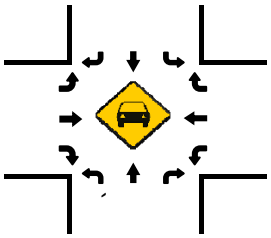


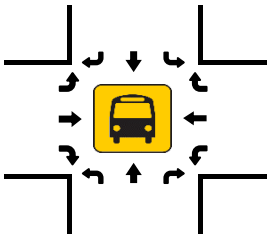
Total Vehicles (NOON)



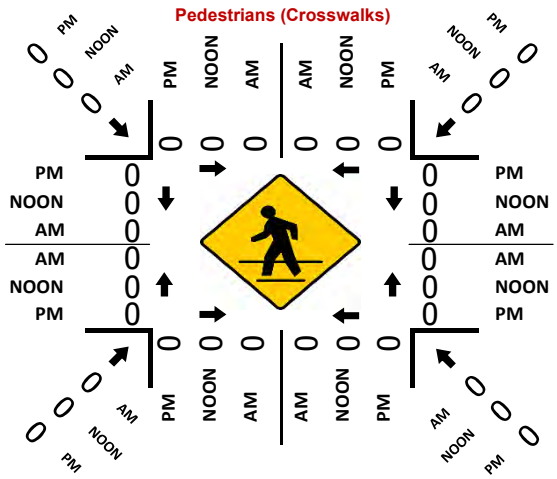


Total Vehicles (PM)





Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Glamis Flats Rd & SR-78/Ben Hulse Hwy
City: Brawley
Control: 1-Way Stop (NB)

Project ID: 19-04408-007
Date: 2019-11-02

Total

NS/EW Streets:	Glamis Flats Rd				Glamis Flats Rd				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0.5	0.5	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	3	0	0	1	0	0	0	0	0	5	0	0	0	20	0	0	29
5:15 PM	2	0	1	0	0	0	0	0	0	19	1	0	1	20	0	0	44
5:30 PM	4	0	1	0	0	0	0	0	0	21	1	0	0	10	0	0	37
5:45 PM	4	0	0	0	0	0	0	0	0	10	2	0	0	14	0	0	30
6:00 PM	1	0	1	0	0	0	0	0	0	14	4	0	0	28	0	0	48
6:15 PM	2	0	0	0	0	0	0	0	0	11	4	0	1	17	0	0	35
6:30 PM	4	0	0	0	0	0	0	0	0	7	2	0	1	5	0	0	19
6:45 PM	4	0	1	0	0	0	0	0	0	6	2	0	1	7	0	0	21
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	24	0	4	1	0	0	0	0	0	93	16	0	4	121	0	0	263
APPROACH %'s :	82.76%	0.00%	13.79%	3.45%					0.00%	85.32%	14.68%	0.00%	3.20%	96.80%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	11	0	3	0	0	0	0	0	0	64	8	0	1	72	0	0	159
PEAK HR FACTOR :	0.688	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.762	0.500	0.000	0.250	0.643	0.000	0.000	0.828
	0.700								0.818				0.652				

Prepared by National Data & Surveying Services

Glamis Flats Rd & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-007
City: Brawley

Day: Saturday
Date: 11/02/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
05:15 PM - 06:15 PM	05:00 PM - 07:00 PM

Glamis Flats Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

SR-78/Ben Hulse Hwy — EASTBOUND

AM	NOON	PM	
0	0	83	
0	0	0	0
0	0	0	0
0	0	64	1
0	0	8	0
AM	NOON	PM	

SR-78/Ben Hulse Hwy — WESTBOUND

PM	NOON	AM	
0	0	0	0
72	0	0	1
1	0	0	0
0	0	0	0
67	0	0	
PM	NOON	AM	

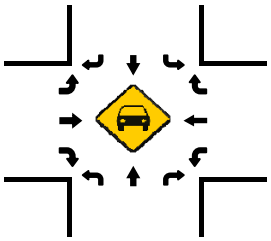
CONTROL: 1-Way Stop (NB)

	AM	NOON	PM
TEV	0	0	159
PHF			0.83

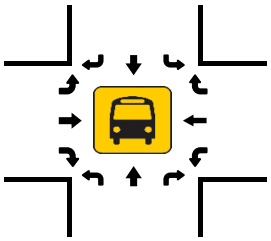
Glamis Flats Rd — NORTHBOUND

PM	9	0	11	0	3	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

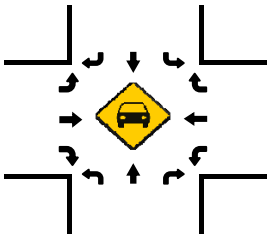
Total Vehicles (AM)



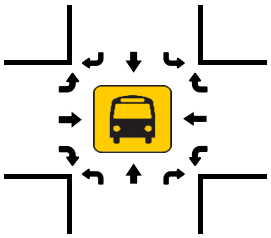
Total Vehicles (AM)



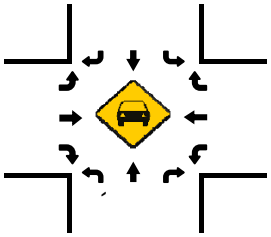
Total Vehicles (NOON)



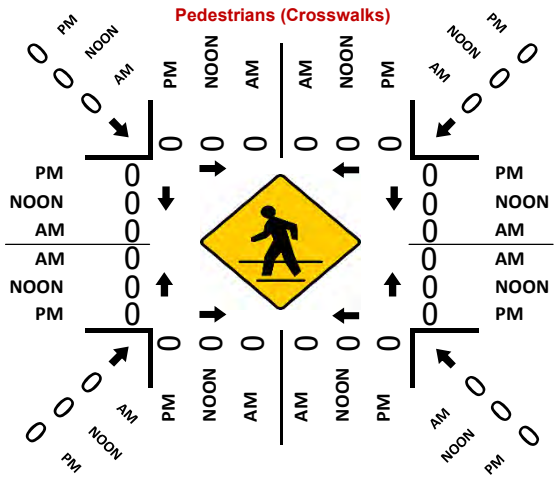
Total Vehicles (NOON)



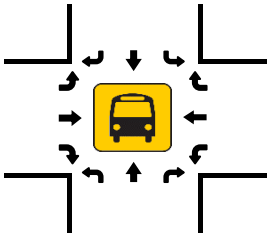
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Wash Rd & SR-78/Ben Hulse Hwy
City: Brawley
Control: 1-Way Stop (SB)

Project ID: 19-04408-008
Date: 2019-11-02

Total

NS/EW Streets:	Wash Rd				Wash Rd				SR-78/Ben Hulse Hwy				SR-78/Ben Hulse Hwy				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
5:00 PM	2	0	1	0	0	0	0	0	0	4	0	0	4	14	0	0	25
5:15 PM	7	0	4	0	0	0	0	0	0	9	3	0	2	15	0	0	40
5:30 PM	2	0	1	0	0	0	0	0	0	16	3	0	0	6	0	0	28
5:45 PM	1	0	2	0	0	0	0	0	0	10	0	0	0	4	0	0	17
6:00 PM	0	0	0	0	0	0	0	0	0	6	5	0	1	26	0	0	38
6:15 PM	2	0	2	0	0	0	0	0	0	8	2	0	1	13	0	0	28
6:30 PM	3	0	2	0	0	0	0	0	0	4	2	0	4	4	0	0	19
6:45 PM	2	2	4	0	0	2	0	0	0	4	1	0	1	4	0	0	20
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	19	2	16	0	0	2	0	0	0	61	16	0	13	86	0	0	215
APPROACH %'s :	51.35%	5.41%	43.24%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	79.22%	20.78%	0.00%	13.13%	86.87%	0.00%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	10	0	7	0	0	0	0	0	0	41	11	0	3	51	0	0	123
PEAK HR FACTOR :	0.357	0.000	0.438	0.000	0.000	0.000	0.000	0.000	0.000	0.641	0.550	0.000	0.375	0.490	0.000	0.000	0.769
	0.386								0.684				0.500				

Prepared by National Data & Surveying Services

Wash Rd & SR-78/Ben Hulse Hwy

Peak Hour Turning Movement Count

ID: 19-04408-008
City: Brawley

Day: Saturday
Date: 11/02/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
05:15 PM - 06:15 PM	05:00 PM - 07:00 PM

Wash Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

SR-78/Ben Hulse Hwy — EASTBOUND

AM	NOON	PM	
0	0	61	
0	0	0	0
0	0	0	0
0	0	41	1
0	0	11	0
AM	NOON	PM	

SR-78/Ben Hulse Hwy — WESTBOUND

PM	NOON	AM	
0	0	0	0
51	0	0	1
3	0	0	0
0	0	0	0
48	0	0	
PM	NOON	AM	

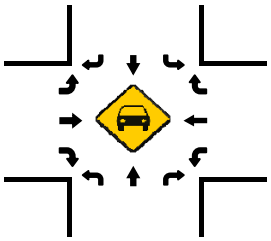
CONTROL			
1-Way Stop (SB)			
TEV	0 AM	0 NOON	123 PM
PHF			0.77

Wash Rd — NORTHBOUND

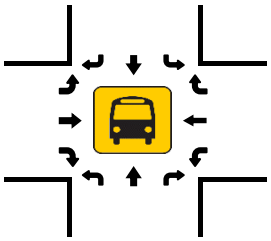
PM	14	0	10	0	7	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

0 1 0 0 — 0 0 1 0

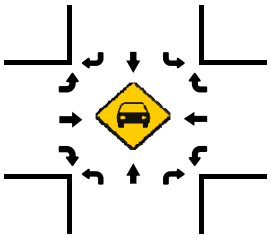
Total Vehicles (AM)



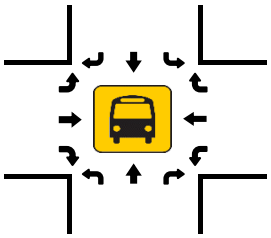
Total Vehicles (AM)



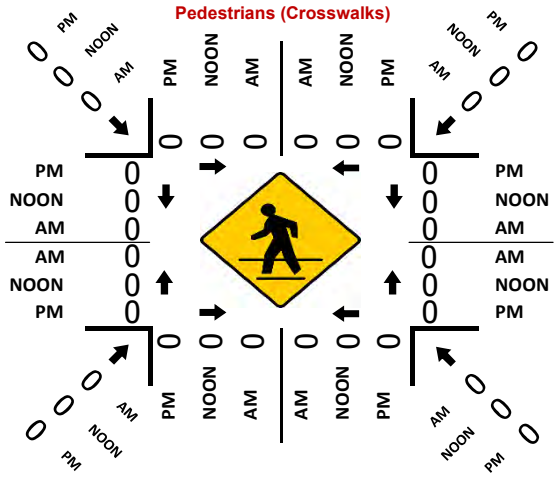
Total Vehicles (NOON)



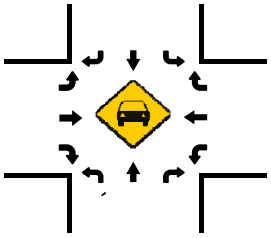
Total Vehicles (NOON)



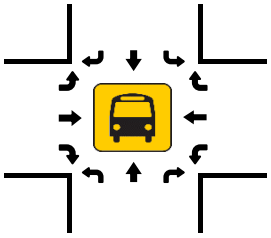
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

VOLUME

Gecko Rd S/O SR-78

Day: Thursday
Date: 10/31/2019

City: Brawley
Project #: CA19_4407_001

DAILY TOTALS	NB	SB	EB	WB	Total
	102	284	0	0	386

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
0:00	0		0						0		12:00	3		6						9	
0:15	0		2						2		12:15	1		2						3	
0:30	0		0						0		12:30	4		6						10	
0:45	0		3	5					3	5	12:45	1	9	7	21					8	30
1:00	0		7						7		13:00	2		4						6	
1:15	0		4						4		13:15	6		5						11	
1:30	0		1						1		13:30	1		4						5	
1:45	0		1	13					1	13	13:45	0	9	5	18					5	27
2:00	0		2						2		14:00	1		4						5	
2:15	0		1						1		14:15	2		2						4	
2:30	0		0						0		14:30	4		8						12	
2:45	1	1	0	3					1	4	14:45	1	8	6	20					7	28
3:00	0		0						0		15:00	5		5						10	
3:15	0		0						0		15:15	4		6						10	
3:30	0		1						1		15:30	3		5						8	
3:45	0		1	2					1	2	15:45	1	13	4	20					5	33
4:00	0		0						0		16:00	2		8						10	
4:15	0		0						0		16:15	1		5						6	
4:30	0		0						0		16:30	1		5						6	
4:45	0		0						0		16:45	0	4	5	23					5	27
5:00	0		0						0		17:00	1		1						2	
5:15	0		0						0		17:15	0		4						4	
5:30	1		1						2		17:30	4		1						5	
5:45	0	1	1	2					1	3	17:45	2	7	3	9					5	16
6:00	0		0						0		18:00	2		5						7	
6:15	0		0						0		18:15	3		3						6	
6:30	1		0						1		18:30	1		5						6	
6:45	0	1	0						0	1	18:45	0	6	2	15					2	21
7:00	1		1						2		19:00	0		1						1	
7:15	0		1						1		19:15	1		2						3	
7:30	0		1						1		19:30	0		5						5	
7:45	0	1	1	4					1	5	19:45	0	1	5	13					5	14
8:00	0		3						3		20:00	1		1						2	
8:15	2		3						5		20:15	1		3						4	
8:30	2		3						5		20:30	1		2						3	
8:45	1	5	3	12					4	17	20:45	0	3	1	7					1	10
9:00	1		4						5		21:00	0		6						6	
9:15	1		5						6		21:15	1		2						3	
9:30	3		8						11		21:30	0		4						4	
9:45	4	9	3	20					7	29	21:45	0	1	2	14					2	15
10:00	3		4						7		22:00	0		4						4	
10:15	4		5						9		22:15	0		1						1	
10:30	2		1						3		22:30	0		12						12	
10:45	1	10	2	12					3	22	22:45	0		6	23					6	23
11:00	1		2						3		23:00	1		5						6	
11:15	3		1						4		23:15	1		3						4	
11:30	4		5						9		23:30	0		5						5	
11:45	3	11	4	12					7	23	23:45	0	2	3	16					3	18
TOTALS		39		85						124	TOTALS		63		199						262
SPLIT %		31.5%		68.5%						32.1%	SPLIT %		24.0%		76.0%						67.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	102	284	0	0	386

AM Peak Hour	9:30	8:45			9:30	PM Peak Hour	14:30	22:30			14:30
AM Pk Volume	14	20			34	PM Pk Volume	14	26			39
Pk Hr Factor	0.875	0.625			0.773	Pk Hr Factor	0.700	0.542			0.813
7 - 9 Volume	6	16	0	0	22	4 - 6 Volume	11	32	0	0	43
7 - 9 Peak Hour	8:00	8:00			8:00	4 - 6 Peak Hour	17:00	16:00			16:00
7 - 9 Pk Volume	5	12	0	0	17	4 - 6 Pk Volume	7	23	0	0	27
Pk Hr Factor	0.625	1.000	0.000	0.000	0.850	Pk Hr Factor	0.438	0.719	0.000	0.000	0.675

Prepared by National Data & Surveying Services

VOLUME

Gecko Rd S/O SR-78

Day: Saturday
Date: 11/2/2019

City: Brawley
Project #: CA19_4407_001

DAILY TOTALS	NB	SB	EB	WB	Total
	380	398	0	0	778

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
0:00	0		3						3		12:00	13		7						20	
0:15	1		1						2		12:15	8		5						13	
0:30	1		2						3		12:30	4		9						13	
0:45	0	2	2	8					2	10	12:45	5	30	6	27					11	57
1:00	1		4						5		13:00	11		8						19	
1:15	0		5						5		13:15	10		3						13	
1:30	0		1						1		13:30	5		11						16	
1:45	0	1	2	12					2	13	13:45	7	33	6	28					13	61
2:00	0		3						3		14:00	6		6						12	
2:15	0		1						1		14:15	10		12						22	
2:30	0		1						1		14:30	7		8						15	
2:45	0		2	7					2	7	14:45	9	32	7	33					16	65
3:00	0		1						1		15:00	9		4						13	
3:15	1		0						1		15:15	2		9						11	
3:30	2		0						2		15:30	2		7						9	
3:45	0	3	0	1					0	4	15:45	5	18	11	31					16	49
4:00	1		0						1		16:00	5		12						17	
4:15	0		4						4		16:15	3		14						17	
4:30	0		0						0		16:30	8		4						12	
4:45	0	1	0	4					0	5	16:45	7	23	9	39					16	62
5:00	0		0						0		17:00	2		12						14	
5:15	1		0						1		17:15	9		7						16	
5:30	1		0						1		17:30	9		9						18	
5:45	0	2	0						0	2	17:45	9	29	2	30					11	59
6:00	0		2						2		18:00	21		4						25	
6:15	0		0						0		18:15	13		5						18	
6:30	0		1						1		18:30	8		3						11	
6:45	0		1	4					1	4	18:45	7	49	2	14					9	63
7:00	1		1						2		19:00	8		5						13	
7:15	1		0						1		19:15	3		3						6	
7:30	3		3						6		19:30	6		3						9	
7:45	7	12	7	11					14	23	19:45	5	22	0	11					5	33
8:00	1		4						5		20:00	8		3						11	
8:15	5		7						12		20:15	8		3						11	
8:30	7		6						13		20:30	6		3						9	
8:45	1	14	6	23					7	37	20:45	3	25	1	10					4	35
9:00	1		9						10		21:00	2		1						3	
9:15	6		7						13		21:15	4		3						7	
9:30	6		5						11		21:30	1		1						2	
9:45	10	23	6	27					16	50	21:45	3	10	1	6					4	16
10:00	4		7						11		22:00	1		2						3	
10:15	1		6						7		22:15	1		1						2	
10:30	6		13						19		22:30	1		0						1	
10:45	6	17	4	30					10	47	22:45	0	3	1	4					1	7
11:00	3		7						10		23:00	1		1						2	
11:15	5		6						11		23:15	0		4						4	
11:30	8		10						18		23:30	1		0						1	
11:45	11	27	9	32					20	59	23:45	2	4	1	6					3	10
TOTALS		102		159						261	TOTALS		278		239						517
SPLIT %		39.1%		60.9%						33.5%	SPLIT %		53.8%		46.2%						66.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	380	398	0	0	778

AM Peak Hour	11:30	9:45			11:30	PM Peak Hour	17:30	15:30			17:30
AM Pk Volume	40	32			71	PM Pk Volume	52	44			72
Pk Hr Factor	0.769	0.615			0.888	Pk Hr Factor	0.619	0.786			0.720
7 - 9 Volume	26	34	0	0	60	4 - 6 Volume	52	69	0	0	121
7 - 9 Peak Hour	7:45	7:45			7:45	4 - 6 Peak Hour	17:00	16:00			16:45
7 - 9 Pk Volume	20	24	0	0	44	4 - 6 Pk Volume	29	39	0	0	64
Pk Hr Factor	0.714	0.857	0.000	0.000	0.786	Pk Hr Factor	0.806	0.696	0.000	0.000	0.889

Prepared by National Data & Surveying Services

VOLUME

Glamis Flats Rd S/O SR-78

Day: Thursday
Date: 10/31/2019

City: Brawley
Project #: CA19_4407_003

DAILY TOTALS	NB	SB	EB	WB	Total
	51	90	0	0	141

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
0:00	0		0						0		12:00	0		1						1	
0:15	0		0						0		12:15	0		0						0	
0:30	0		3						3		12:30	1		0						1	
0:45	0		0	3					0	3	12:45	0	1	0	1					0	2
1:00	0		0						0		13:00	2		1						3	
1:15	0		0						0		13:15	0		1						1	
1:30	0		0						0		13:30	0		3						3	
1:45	0		0						0		13:45	1	3	3	8					4	11
2:00	0		6						6		14:00	0		0						0	
2:15	0		3						3		14:15	1		0						1	
2:30	0		0						0		14:30	2		2						4	
2:45	0		0	9					0	9	14:45	2	5	2	4					4	9
3:00	0		0						0		15:00	0		0						0	
3:15	0		2						2		15:15	0		2						2	
3:30	0		0						0		15:30	2		1						3	
3:45	0		0	2					0	2	15:45	4	6	4	7					8	13
4:00	0		0						0		16:00	1		0						1	
4:15	0		0						0		16:15	2		0						2	
4:30	2		0						2		16:30	1		3						4	
4:45	0	2	0						0	2	16:45	2	6	3	6					5	12
5:00	0		0						0		17:00	1		2						3	
5:15	1		1						2		17:15	3		4						7	
5:30	0		0						0		17:30	0		1						1	
5:45	0	1	0	1					0	2	17:45	2	6	3	10					5	16
6:00	0		0						0		18:00	0		3						3	
6:15	0		0						0		18:15	1		5						6	
6:30	0		0						0		18:30	2		1						3	
6:45	0		0						0		18:45	0	3	1	10					1	13
7:00	0		0						0		19:00	0		1						1	
7:15	0		0						0		19:15	0		0						0	
7:30	0		1						1		19:30	0		0						0	
7:45	1	1	1	2					2	3	19:45	1	1	1	2					2	3
8:00	1		0						1		20:00	0		2						2	
8:15	0		1						1		20:15	0		0						0	
8:30	2		1						3		20:30	0		1						1	
8:45	0	3	2	4					2	7	20:45	2	2	1	4					3	6
9:00	1		0						1		21:00	0		1						1	
9:15	0		0						0		21:15	0		0						0	
9:30	0		0						0		21:30	0		1						1	
9:45	1	2	0						1	2	21:45	0		0	2					0	2
10:00	1		1						2		22:00	0		0						0	
10:15	0		2						2		22:15	0		1						1	
10:30	1		0						1		22:30	0		0						0	
10:45	3	5	2	5					5	10	22:45	0		0	1					0	1
11:00	0		2						2		23:00	0		0						0	
11:15	1		2						3		23:15	0		1						1	
11:30	3		0						3		23:30	0		3						3	
11:45	0	4	0	4					0	8	23:45	0		1	5					1	5
TOTALS	18		30							48	TOTALS	33		60							93
SPLIT %	37.5%		62.5%							34.0%	SPLIT %	35.5%		64.5%							66.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	51	90	0	0	141

AM Peak Hour	10:45	1:30			10:45	PM Peak Hour	15:30	16:30			16:30
AM Pk Volume	7	9			13	PM Pk Volume	9	12			19
Pk Hr Factor	0.583	0.375			0.650	Pk Hr Factor	0.563	0.750			0.679
7 - 9 Volume	4	6	0	0	10	4 - 6 Volume	12	16	0	0	28
7 - 9 Peak Hour	7:45	8:00			7:45	4 - 6 Peak Hour	16:30	16:30			16:30
7 - 9 Pk Volume	4	4	0	0	7	4 - 6 Pk Volume	7	12	0	0	19
Pk Hr Factor	0.500	0.500	0.000	0.000	0.583	Pk Hr Factor	0.583	0.750	0.000	0.000	0.679

Prepared by National Data & Surveying Services

VOLUME

Glamis Flats Rd S/O SR-78

Day: Saturday
Date: 11/2/2019

City: Brawley
Project #: CA19_4407_003

DAILY TOTALS	NB	SB	EB	WB	Total
	157	202	0	0	359

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
0:00	0		1						1		12:00	1		10						11	
0:15	0		0						0		12:15	1		3						4	
0:30	0		4						4		12:30	1		3						4	
0:45	2	2	3	8					5	10	12:45	4	7	2	18					6	25
1:00	0		1						1		13:00	4		5						9	
1:15	1		2						3		13:15	1		10						11	
1:30	2		0						2		13:30	8		6						14	
1:45	0	3	0	3					0	6	13:45	2	15	2	23					4	38
2:00	0		0						0		14:00	3		7						10	
2:15	0		0						0		14:15	7		5						12	
2:30	1		2						3		14:30	4		5						9	
2:45	0	1	0	2					0	3	14:45	2	16	2	19					4	35
3:00	0		0						0		15:00	2		2						4	
3:15	0		0						0		15:15	7		10						17	
3:30	0		0						0		15:30	4		3						7	
3:45	0		1	1					1	1	15:45	7	20	5	20					12	40
4:00	2		1						3		16:00	7		1						8	
4:15	0		0						0		16:15	3		2						5	
4:30	0		0						0		16:30	2		0						2	
4:45	0	2	0	1					0	3	16:45	2	14	3	6					5	20
5:00	0		0						0		17:00	3		0						3	
5:15	0		0						0		17:15	3		2						5	
5:30	0		0						0		17:30	5		1						6	
5:45	0		0						0		17:45	4	15	2	5					6	20
6:00	0		0						0		18:00	2		4						6	
6:15	0		0						0		18:15	2		5						7	
6:30	0		0						0		18:30	4		3						7	
6:45	1	1	0						1	1	18:45	5	13	3	15					8	28
7:00	0		0						0		19:00	3		0						3	
7:15	2		0						2		19:15	1		1						2	
7:30	0		0						0		19:30	0		1						1	
7:45	0	2	1	1					1	3	19:45	0	4	3	5					3	9
8:00	0		2						2		20:00	3		0						3	
8:15	2		2						4		20:15	2		2						4	
8:30	0		4						4		20:30	1		3						4	
8:45	1	3	5	13					6	16	20:45	1	7	3	8					4	15
9:00	4		3						7		21:00	0		1						1	
9:15	0		4						4		21:15	0		1						1	
9:30	0		1						1		21:30	1		2						3	
9:45	1	5	5	13					6	18	21:45	2	3	0	4					2	7
10:00	0		3						3		22:00	0		0						0	
10:15	1		2						3		22:15	0		0						0	
10:30	4		6						10		22:30	1		0						1	
10:45	3	8	2	13					5	21	22:45	1	2	0						1	2
11:00	2		3						5		23:00	2		0						2	
11:15	4		7						11		23:15	3		0						3	
11:30	0		5						5		23:30	0		0						0	
11:45	3	9	9	24					12	33	23:45	0	5	0						0	5
TOTALS		36		79						**115**	**TOTALS**		121		123						**244**
SPLIT %		31.3%		68.7%						**32.0%**	**SPLIT %**		49.6%		50.4%						**68.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	157	202	0	0	359

AM Peak Hour	10:30	11:15			**11:15**	**PM Peak Hour**	15:15	13:15			**15:15**
AM Pk Volume	13	31			**39**	**PM Pk Volume**	25	25			**44**
Pk Hr Factor	0.813	0.775			**0.813**	**Pk Hr Factor**	0.893	0.625			**0.647**
7 - 9 Volume	5	14	0	0	**19**	**4 - 6 Volume**	29	11	0	0	**40**
7 - 9 Peak Hour	8:00	8:00			**8:00**	**4 - 6 Peak Hour**	17:00	16:00			**16:00**
7 - 9 Pk Volume	3	13	0	0	**16**	**4 - 6 Pk Volume**	15	6	0	0	**20**
Pk Hr Factor	0.375	0.650	0.000	0.000	**0.667**	**Pk Hr Factor**	0.750	0.500	0.000	0.000	**0.625**

Prepared by National Data & Surveying Services

VOLUME

Osborne Park Rd S/O SR-78

Day: Thursday
Date: 10/31/2019

City: Brawley
Project #: CA19_4407_002

DAILY TOTALS	NB	SB	EB	WB	Total
	46	50	0	0	96

AM Period	NB		SB		EB		WB		TOTAL	
0:00	0		0						0	
0:15	0		0						0	
0:30	0		0						0	
0:45	0		1	1					1	1
1:00	1		0						1	
1:15	0		0						0	
1:30	0		0						0	
1:45	0	1	0						0	1
2:00	0		0						0	
2:15	0		0						0	
2:30	0		0						0	
2:45	0		0						0	
3:00	0		0						0	
3:15	0		0						0	
3:30	0		0						0	
3:45	0		0						0	
4:00	0		0						0	
4:15	0		0						0	
4:30	0		0						0	
4:45	0		0						0	
5:00	0		0						0	
5:15	0		0						0	
5:30	0		0						0	
5:45	0		0						0	
6:00	0		0						0	
6:15	0		0						0	
6:30	0		0						0	
6:45	0		0						0	
7:00	0		0						0	
7:15	0		0						0	
7:30	0		0						0	
7:45	0		0						0	
8:00	0		0						0	
8:15	0		0						0	
8:30	3		3						6	
8:45	0	3	1	4					1	7
9:00	1		0						1	
9:15	1		3						4	
9:30	2		1						3	
9:45	2	6	3	7					5	13
10:00	2		3						5	
10:15	2		0						2	
10:30	0		0						0	
10:45	0	4	1	4					1	8
11:00	2		1						3	
11:15	0		1						1	
11:30	3		3						6	
11:45	1	6	2	7					3	13
TOTALS		20		23						**43**
SPLIT %		46.5%		53.5%						**44.8%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00	2		1						3	
12:15	2		2						4	
12:30	1		1						2	
12:45	2	7	2	6					4	13
13:00	0		1						1	
13:15	0		1						1	
13:30	0		1						1	
13:45	2	2	3	6					5	8
14:00	3		0						3	
14:15	1		1						2	
14:30	0		1						1	
14:45	4	8	4	6					8	14
15:00	1		0						1	
15:15	0		0						0	
15:30	0		0						0	
15:45	0	1	1	1					1	2
16:00	0		2						2	
16:15	1		1						2	
16:30	2		0						2	
16:45	0	3	0	3					0	6
17:00	1		1						2	
17:15	2		1						3	
17:30	0		0						0	
17:45	1	4	1	3					2	7
18:00	0		0						0	
18:15	0		0						0	
18:30	0		0						0	
18:45	0		0						0	
19:00	0		0						0	
19:15	0		0						0	
19:30	0		0						0	
19:45	0		0						0	
20:00	0		0						0	
20:15	0		0						0	
20:30	0		0						0	
20:45	0		0						0	
21:00	0		0						0	
21:15	0		0						0	
21:30	0		0						0	
21:45	0		0						0	
22:00	1		2						3	
22:15	0		0						0	
22:30	0		0						0	
22:45	0	1	0	2					0	3
23:00	0		0						0	
23:15	0		0						0	
23:30	0		0						0	
23:45	0		0						0	
TOTALS		26		27						**53**
SPLIT %		49.1%		50.9%						**55.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	46	50	0	0	96

AM Peak Hour	9:30	9:15			**9:15**	**PM Peak Hour**	14:00	12:00			**14:00**
AM Pk Volume	8	10			**17**	**PM Pk Volume**	8	6			**14**
Pk Hr Factor	1.000	0.833			**0.850**	**Pk Hr Factor**	0.500	0.750			**0.438**
7 - 9 Volume	3	4	0	0	**7**	**4 - 6 Volume**	7	6	0	0	**13**
7 - 9 Peak Hour	7:45	8:00			**8:00**	**4 - 6 Peak Hour**	16:30	16:00			**16:30**
7 - 9 Pk Volume	3	4	0	0	**7**	**4 - 6 Pk Volume**	5	3	0	0	**7**
Pk Hr Factor	0.250	0.333	0.000	0.000	**0.292**	**Pk Hr Factor**	0.625	0.375	0.000	0.000	**0.583**

Prepared by National Data & Surveying Services

VOLUME

Osborne Park Rd S/O SR-78

Day: Saturday
Date: 11/2/2019

City: Brawley
Project #: CA19_4407_002

DAILY TOTALS	NB	SB	EB	WB	Total
	117	117	0	0	234

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
0:00	0		0						0		12:00	1		1						2	
0:15	0		0						0		12:15	3		2						5	
0:30	0		0						0		12:30	2		3						5	
0:45	0		0						0		12:45	3	9	2	8					5	17
1:00	1		2						3		13:00	1		4						5	
1:15	0		0						0		13:15	0		3						3	
1:30	1		0						1		13:30	3		2						5	
1:45	0	2	0	2					0	4	13:45	1	5	2	11					3	16
2:00	0		0						0		14:00	5		3						8	
2:15	1		0						1		14:15	5		4						9	
2:30	0		0						0		14:30	4		3						7	
2:45	0	1	0						0	1	14:45	2	16	3	13					5	29
3:00	0		0						0		15:00	0		4						4	
3:15	0		0						0		15:15	3		4						7	
3:30	0		0						0		15:30	3		2						5	
3:45	0		0						0		15:45	6	12	5	15					11	27
4:00	0		0						0		16:00	2		4						6	
4:15	0		0						0		16:15	4		5						9	
4:30	0		0						0		16:30	3		3						6	
4:45	0		0						0		16:45	0	9	4	16					4	25
5:00	0		0						0		17:00	3		3						6	
5:15	0		0						0		17:15	3		3						6	
5:30	0		0						0		17:30	0		2						2	
5:45	0		0						0		17:45	2	8	0	8					2	16
6:00	0		0						0		18:00	6		0						6	
6:15	0		1						1		18:15	5		1						6	
6:30	0		0						0		18:30	1		0						1	
6:45	1	1	1	2					2	3	18:45	0	12	1	2					1	14
7:00	0		1						1		19:00	1		1						2	
7:15	0		1						1		19:15	2		0						2	
7:30	0		0						0		19:30	0		0						0	
7:45	1	1	1	3					2	4	19:45	0	3	0	1					0	4
8:00	0		0						0		20:00	2		0						2	
8:15	0		0						0		20:15	0		0						0	
8:30	1		1						2		20:30	1		0						1	
8:45	1	2	1	2					2	4	20:45	0	3	0						0	3
9:00	1		0						1		21:00	0		0						0	
9:15	2		1						3		21:15	0		0						0	
9:30	0		1						1		21:30	0		0						0	
9:45	2	5	3	5					5	10	21:45	0		0						0	
10:00	4		15						19		22:00	0		1						1	
10:15	1		2						3		22:15	0		0						0	
10:30	17		2						19		22:30	0		0						0	
10:45	1	23	2	21					3	44	22:45	0		0	1					0	1
11:00	0		1						1		23:00	0		0						0	
11:15	0		2						2		23:15	0		0						0	
11:30	3		0						3		23:30	0		1						1	
11:45	2	5	3	6					5	11	23:45	0		0	1					0	1
TOTALS		40		41						81	TOTALS		77		76						153
SPLIT %		49.4%		50.6%						34.6%	SPLIT %		50.3%		49.7%						65.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	117	117	0	0	234

AM Peak Hour	9:45	9:45			9:45	PM Peak Hour	14:00	15:45			15:45
AM Pk Volume	24	22			46	PM Pk Volume	16	17			32
Pk Hr Factor	0.353	0.367			0.605	Pk Hr Factor	0.800	0.850			0.727
7 - 9 Volume	3	5	0	0	8	4 - 6 Volume	17	24	0	0	41
7 - 9 Peak Hour	7:45	7:00			7:00	4 - 6 Peak Hour	16:15	16:00			16:00
7 - 9 Pk Volume	2	3	0	0	4	4 - 6 Pk Volume	10	16	0	0	25
Pk Hr Factor	0.500	0.750	0.000	0.000	0.500	Pk Hr Factor	0.625	0.800	0.000	0.000	0.694

Prepared by National Data & Surveying Services

VOLUME

Wash Rd S/O SR-78

Day: Thursday
Date: 10/31/2019

City: Brawley
Project #: CA19_4407_004

DAILY TOTALS	NB	SB	EB	WB	Total
	49	197	0	0	246

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
0:00	0		9						9		12:00	3		4						7	
0:15	0		5						5		12:15	5		3						8	
0:30	2		3						5		12:30	1		2						3	
0:45	0	2	2	19					2	21	12:45	1	10	5	14					6	24
1:00	0		1						1		13:00	0		2						2	
1:15	0		0						0		13:15	1		2						3	
1:30	0		0						0		13:30	0		4						4	
1:45	0		2	3					2	3	13:45	0	1	0	8					0	9
2:00	0		2						2		14:00	2		1						3	
2:15	0		3						3		14:15	0		4						4	
2:30	0		0						0		14:30	0		3						3	
2:45	0		1	6					1	6	14:45	1	3	2	10					3	13
3:00	0		1						1		15:00	3		4						7	
3:15	0		0						0		15:15	0		1						1	
3:30	0		0						0		15:30	0		4						4	
3:45	0		1	2					1	2	15:45	0	3	0	9					0	12
4:00	0		1						1		16:00	2		2						4	
4:15	0		2						2		16:15	0		2						2	
4:30	0		1						1		16:30	1		4						5	
4:45	0		0	4					0	4	16:45	0	3	1	9					1	12
5:00	0		0						0		17:00	1		1						2	
5:15	0		0						0		17:15	0		3						3	
5:30	0		0						0		17:30	0		2						2	
5:45	0		0						0		17:45	0	1	2	8					2	9
6:00	0		0						0		18:00	1		5						6	
6:15	0		0						0		18:15	0		3						3	
6:30	0		0						0		18:30	0		3						3	
6:45	0		1	1					1	1	18:45	1	2	4	15					5	17
7:00	0		0						0		19:00	0		2						2	
7:15	0		1						1		19:15	0		2						2	
7:30	3		0						3		19:30	0		3						3	
7:45	0	3	2	3					2	6	19:45	0		0	7					0	7
8:00	0		0						0		20:00	0		1						1	
8:15	0		2						2		20:15	0		3						3	
8:30	0		0						0		20:30	0		3						3	
8:45	1	1	3	5					4	6	20:45	0		2	9					2	9
9:00	0		3						3		21:00	0		0						0	
9:15	2		1						3		21:15	1		0						1	
9:30	3		6						9		21:30	0		2						2	
9:45	0	5	1	11					1	16	21:45	0	1	2	4					2	5
10:00	2		0						2		22:00	0		2						2	
10:15	1		6						7		22:15	0		5						5	
10:30	5		3						8		22:30	0		1						1	
10:45	0	8	2	11					2	19	22:45	0		4	12					4	12
11:00	2		3						5		23:00	1		2						3	
11:15	1		4						5		23:15	0		3						3	
11:30	1		4						5		23:30	0		5						5	
11:45	1	5	3	14					4	19	23:45	0	1	3	13					3	14
TOTALS		24		79						103	TOTALS		25		118						143
SPLIT %		23.3%		76.7%						41.9%	SPLIT %		17.5%		82.5%						58.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	49	197	0	0	246

AM Peak Hour	11:30				11:30	PM Peak Hour	12:00	18:00			12:00
AM Pk Volume	10	19			24	PM Pk Volume	10	15			24
Pk Hr Factor	0.500	0.528			0.750	Pk Hr Factor	0.500	0.750			0.750
7 - 9 Volume	4	8	0	0	12	4 - 6 Volume	4	17	0	0	21
7 - 9 Peak Hour	7:00	8:00			7:30	4 - 6 Peak Hour	16:00	16:00			16:00
7 - 9 Pk Volume	3	5	0	0	7	4 - 6 Pk Volume	3	9	0	0	12
Pk Hr Factor	0.250	0.417	0.000	0.000	0.583	Pk Hr Factor	0.375	0.563	0.000	0.000	0.600

Prepared by National Data & Surveying Services

VOLUME

Wash Rd S/O SR-78

Day: Saturday
Date: 11/2/2019

City: Brawley
Project #: CA19_4407_004

DAILY TOTALS	NB	SB	EB	WB	Total
	164	155	0	0	319

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
0:00	1		0				1		12:00	2		6				8	
0:15	0		0				0		12:15	3		2				5	
0:30	1		1				2		12:30	0		0				0	
0:45	0	2	4	5			4	7	12:45	6	11	2	10			8	21
1:00	1		4				5		13:00	3		1				4	
1:15	0		0				0		13:15	1		1				2	
1:30	1		5				6		13:30	4		2				6	
1:45	0	2	0	9			0	11	13:45	0	8	1	5			1	13
2:00	0		1				1		14:00	2		4				6	
2:15	1		1				2		14:15	0		0				0	
2:30	0		1				1		14:30	4		2				6	
2:45	0	1	1	4			1	5	14:45	1	7	0	6			1	13
3:00	0		1				1		15:00	3		0				3	
3:15	0		0				0		15:15	5		3				8	
3:30	0		0				0		15:30	3		2				5	
3:45	0		2	3			2	3	15:45	8	19	0	5			8	24
4:00	0		0				0		16:00	4		2				6	
4:15	0		0				0		16:15	3		2				5	
4:30	0		0				0		16:30	5		3				8	
4:45	0		0				0		16:45	4	16	0	7			4	23
5:00	0		0				0		17:00	3		4				7	
5:15	0		0				0		17:15	11		5				16	
5:30	0		0				0		17:30	3		3				6	
5:45	0		1	1			1	1	17:45	3	20	0	12			3	32
6:00	0		0				0		18:00	0		6				6	
6:15	0		0				0		18:15	4		3				7	
6:30	1		0				1		18:30	5		6				11	
6:45	0	1	0				0	1	18:45	8	17	4	19			12	36
7:00	0		0				0		19:00	3		0				3	
7:15	0		1				1		19:15	1		4				5	
7:30	1		2				3		19:30	4		1				5	
7:45	2	3	3	6			5	9	19:45	3	11	0	5			3	16
8:00	0		2				2		20:00	1		1				2	
8:15	1		3				4		20:15	1		1				2	
8:30	1		2				3		20:30	3		2				5	
8:45	2	4	4	11			6	15	20:45	1	6	1	5			2	11
9:00	3		0				3		21:00	3		2				5	
9:15	2		2				4		21:15	1		0				1	
9:30	0		2				2		21:30	0		1				1	
9:45	2	7	4	8			6	15	21:45	0	4	1	4			1	8
10:00	3		2				5		22:00	1		4				5	
10:15	1		2				3		22:15	2		1				3	
10:30	1		2				3		22:30	0		1				1	
10:45	2	7	5	11			7	18	22:45	0	3	0	6			0	9
11:00	5		7				12		23:00	0		1				1	
11:15	2		3				5		23:15	0		0				0	
11:30	5		1				6		23:30	0		0				0	
11:45	1	13	1	12			2	25	23:45	2	2	0	1			2	3
TOTALS		40		70				**110**	**TOTALS**		124		85				**209**
SPLIT %		36.4%		63.6%				**34.5%**	**SPLIT %**		59.3%		40.7%				**65.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	164	155	0	0	319

AM Peak Hour	10:45	10:30			**10:45**	**PM Peak Hour**	16:30	18:00			**18:00**
AM Pk Volume	14	17			**30**	**PM Pk Volume**	23	19			**36**
Pk Hr Factor	0.700	0.607			**0.625**	**Pk Hr Factor**	0.523	0.792			**0.750**
7 - 9 Volume	7	17	0	0	**24**	**4 - 6 Volume**	36	19	0	0	**55**
7 - 9 Peak Hour	7:30	8:00			**8:00**	**4 - 6 Peak Hour**	16:30	16:30			**16:30**
7 - 9 Pk Volume	4	11	0	0	**15**	**4 - 6 Pk Volume**	23	12	0	0	**35**
Pk Hr Factor	0.500	0.688	0.000	0.000	**0.625**	**Pk Hr Factor**	0.523	0.600	0.000	0.000	**0.547**

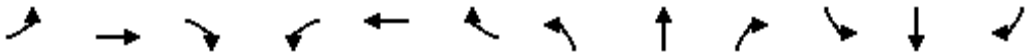
DIST	RTE	RTE	CNTY	PM_	PM	PM	DESCRIPTION	BACK_AADT	AHEAD_AADT
11	078		IMP		0.000		SAN DIEGO/IMPERIAL COUNTY LINE		810
11	078		IMP		13.169		NORTH JCT. RTE 86	810	
11	078		IMP	R	9.203		SOUTH JCT. RTE. 86		8200
11	078		IMP	R	10.809		BRANDT RD	8200	9000
11	078		IMP	R	12.891		JCT. RTE. 111- WEST	9000	9600
11	078		IMP	R	13.897		BEST ROAD	9600	9400
11	078		IMP		15.499		JCT. RTE. 111- EAST	9400	4150
11	078		IMP		18.651		WEST JCT. RTE. 115	4150	3150
11	078		IMP		21.023		EAST JCT. RTE. 115	3150	1800
11	078		IMP		25.927		GREEN ROAD	1800	1550
11	078		IMP		41.004		GLAMIS	1550	1650
11	078		IMP		52.348		OGILBY ROAD	1650	1800
11	078		IMP		80.442		PALO VERDE, FOURTH/MAIN STREET	1900	1650
11	078		IMP		80.743		PALO VERDE, IMPERIAL/RIVERSIDE COUNTY LINE	1650	
08	078		RIV		0.000		PALO VERDE, IMPERIAL/RIVERSIDE COUNTY LINE		1500
08	078		RIV		3.060		32ND AVENUE/PALO VERDE BOULEVARD	1500	1800
08	078		RIV		6.350		CRANNELLS BOULEVARD/28TH AVENUE	1800	1700
08	078		RIV		9.352		28TH AVENUE/NEIGHBORS BOULEVARD	1700	1900
08	078		RIV		10.620		RIPLEY, BROADWAY STREET	1900	2800
08	078		RIV		16.169		JCT. RTE. 10	2800	2800
08	078		RIV		16.411		HOBSON WAY F-OLD RTE 10	2800	
11	079		SD	L	0.044		JCT. RTE. 8		5600
11	079		SD	L	1.297		DESCANSO, RIVERSIDE DRIVE	5600	3200
11	079		SD	L	2.747		GUTAY AND PINE VALLEY HIGHWAY	3550	2750
11	079		SD		9.270		PASO PICACHO CAMP GROUND	1650	1650
11	079		SD		14.440		SUNRISE HIGHWAY	1650	1900
11	079		SD		20.230		JCT. RTE. 78	3150	3150
11	079		SD		27.370		JCT. RTE. 76 WEST	2650	3400
11	079		SD		31.700		SAN FELIPE ROAD	3400	1550
11	079		SD		35.070		WARNER SPRINGS, LOS TULES ROAD	1400	1400
11	079		SD		44.090		SUNSHINE SUMMIT	1250	1700
11	079		SD		49.298		OAK GROVE	1500	1900
11	079		SD		53.035		SAN DIEGO/RIVERSIDE COUNTY LINE	2000	
08	079		RIV		0.000		SAN DIEGO/RIVERSIDE COUNTY LINE		2000
08	079		RIV		2.270		JCT. RTE. 371 EAST	3200	8700
08	079		RIV		5.802		SAGE ROAD	8700	9100
08	079		RIV	R	4.777		MURRIETA HOT SPRINGS RD	34000	28000
08	079		RIV	M	7.630		BENTON RD	28000	25000
08	079		RIV	R	16.670		SIMPSON AVENUE	16000	11000
08	079		RIV	R	19.160		JCT. RTE. 74	10000	16500

APPENDIX C

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS – EXISTING

HCM 6th Signalized Intersection Summary
1: Old Hwy 111/N. Best Ave & SR 78

05/19/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	152	51	13	118	31	41	51	25	45	62	42
Future Volume (veh/h)	35	152	51	13	118	31	41	51	25	45	62	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	36	157	53	13	122	32	42	53	26	46	64	43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	59	302	316	23	203	53	67	143	70	72	129	87
Arrive On Green	0.04	0.21	0.21	0.02	0.18	0.18	0.05	0.16	0.16	0.05	0.16	0.16
Sat Flow, veh/h	1372	1441	1221	1372	1100	289	1372	912	448	1372	804	540
Grp Volume(v), veh/h	36	157	53	13	0	154	42	0	79	46	0	107
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	0	1389	1372	0	1360	1372	0	1343
Q Serve(g_s), s	0.8	3.1	1.1	0.3	0.0	3.2	1.0	0.0	1.7	1.0	0.0	2.3
Cycle Q Clear(g_c), s	0.8	3.1	1.1	0.3	0.0	3.2	1.0	0.0	1.7	1.0	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.33	1.00		0.40
Lane Grp Cap(c), veh/h	59	302	316	23	0	256	67	0	213	72	0	215
V/C Ratio(X)	0.61	0.52	0.17	0.56	0.00	0.60	0.63	0.00	0.37	0.64	0.00	0.50
Avail Cap(c_a), veh/h	817	1986	1742	817	0	1914	817	0	2130	817	0	2104
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.0	11.2	9.2	15.6	0.0	11.9	14.9	0.0	12.1	14.8	0.0	12.2
Incr Delay (d2), s/veh	9.9	1.4	0.2	19.0	0.0	2.3	9.3	0.0	1.1	9.1	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.7	0.2	0.2	0.0	0.8	0.4	0.0	0.4	0.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	12.6	9.4	34.5	0.0	14.2	24.2	0.0	13.1	23.9	0.0	14.0
LnGrp LOS	C	B	A	C	A	B	C	A	B	C	A	B
Approach Vol, veh/h		246			167			121			153	
Approach Delay, s/veh		13.7			15.8			17.0			17.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	9.5	5.0	11.2	6.1	9.6	5.9	10.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	50.0	19.0	44.0	19.0	50.0	19.0	44.0
Max Q Clear Time (g_c+I1), s	3.0	3.7	2.3	5.1	3.0	4.3	2.8	5.2
Green Ext Time (p_c), s	0.1	0.5	0.0	1.0	0.1	0.6	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	68	142	26	84	38	70	289	22	86	487	32
Future Volume (veh/h)	32	68	142	26	84	38	70	289	22	86	487	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	33	70	146	27	87	39	72	298	23	89	502	33
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	106	399	338	106	399	338	205	758	338	127	800	357
Arrive On Green	0.08	0.28	0.28	0.08	0.28	0.28	0.08	0.28	0.28	0.09	0.29	0.29
Sat Flow, veh/h	1372	1441	1221	1372	1441	1221	2662	2737	1221	1372	2737	1221
Grp Volume(v), veh/h	33	70	146	27	87	39	72	298	23	89	502	33
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	1441	1221	1331	1369	1221	1372	1369	1221
Q Serve(g_s), s	1.5	2.4	6.4	1.2	3.0	1.6	1.7	5.7	0.9	4.1	10.3	1.3
Cycle Q Clear(g_c), s	1.5	2.4	6.4	1.2	3.0	1.6	1.7	5.7	0.9	4.1	10.3	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	399	338	106	399	338	205	758	338	127	800	357
V/C Ratio(X)	0.31	0.18	0.43	0.26	0.22	0.12	0.35	0.39	0.07	0.70	0.63	0.09
Avail Cap(c_a), veh/h	106	399	338	106	399	338	205	758	338	127	800	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	17.9	19.3	28.2	18.1	17.6	28.5	19.1	17.3	28.6	19.9	16.7
Incr Delay (d2), s/veh	7.6	1.0	4.0	5.8	1.3	0.7	4.7	0.3	0.1	27.8	3.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	1.9	0.5	1.0	0.4	0.6	1.7	0.2	2.3	3.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	18.8	23.3	34.0	19.3	18.2	33.2	19.4	17.4	56.5	23.6	17.2
LnGrp LOS	D	B	C	C	B	B	C	B	B	E	C	B
Approach Vol, veh/h		249			153			393			624	
Approach Delay, s/veh		23.7			21.6			21.8			28.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	22.5	9.5	22.5	9.5	23.5	9.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.0	18.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	10.1	7.7	3.2	8.4	3.7	12.3	3.5	5.0
Green Ext Time (p_c), s	0.0	1.4	0.0	0.5	0.0	1.9	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	160	0	0	102	5	0	0	0	18	0	6
Future Vol, veh/h	6	160	0	0	102	5	0	0	0	18	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	8	203	0	0	129	6	0	0	0	23	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	129	0	0	203	0	0	352	348	203	348	348	129
Stage 1	-	-	-	-	-	-	219	219	-	129	129	-
Stage 2	-	-	-	-	-	-	133	129	-	219	219	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1296	-	-	1213	-	0	552	532	769	556	532	849
Stage 1	-	-	-	-	-	0	722	671	-	810	737	-
Stage 2	-	-	-	-	-	0	805	737	-	722	671	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1296	-	-	1213	-	-	544	528	769	553	528	849
Mov Cap-2 Maneuver	-	-	-	-	-	-	544	528	-	553	528	-
Stage 1	-	-	-	-	-	-	717	666	-	804	737	-
Stage 2	-	-	-	-	-	-	798	737	-	717	666	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	11.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1296	-	-	1213	-	553	849
HCM Lane V/C Ratio	-	-	0.006	-	-	-	-	0.041	0.009
HCM Control Delay (s)	0	0	7.8	0	-	0	-	11.8	9.3
HCM Lane LOS	A	A	A	A	-	A	-	B	A
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	0.1	0

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	70	111	48	10	21	59
Future Vol, veh/h	70	111	48	10	21	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	96	152	66	14	29	81

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	80	0	-	0	417	73
Stage 1	-	-	-	-	73	-
Stage 2	-	-	-	-	344	-
Critical Hdwy	4.41	-	-	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.479	-	-	-	3.779	3.579
Pot Cap-1 Maneuver	1353	-	-	-	541	914
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	658	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1353	-	-	-	503	914
Mov Cap-2 Maneuver	-	-	-	-	503	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	658	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1353	-	-	-	753
HCM Lane V/C Ratio	0.071	-	-	-	0.146
HCM Control Delay (s)	7.9	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	63	7	2	81	6	1
Future Vol, veh/h	63	7	2	81	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	91	10	3	117	9	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	101	0	219	96
Stage 1	-	-	-	-	96	-
Stage 2	-	-	-	-	123	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1328	-	709	887
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	835	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1328	-	708	887
Mov Cap-2 Maneuver	-	-	-	-	708	-
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	833	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	729	-	-	1328	-
HCM Lane V/C Ratio	0.014	-	-	0.002	-
HCM Control Delay (s)	10	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	63	1	2	78	3	1
Future Vol, veh/h	63	1	2	78	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	86	1	3	107	4	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	87	0	200	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	113	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1345	-	727	897
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	844	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1345	-	726	897
Mov Cap-2 Maneuver	-	-	-	-	726	-
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	842	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	762	-	-	1345	-
HCM Lane V/C Ratio	0.007	-	-	0.002	-
HCM Control Delay (s)	9.8	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	8	2	76	5	1
Future Vol, veh/h	55	8	2	76	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	76	11	3	106	7	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	87	0	194	82
Stage 1	-	-	-	-	82	-
Stage 2	-	-	-	-	112	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1345	-	733	903
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	845	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1345	-	732	903
Mov Cap-2 Maneuver	-	-	-	-	732	-
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	843	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	756	-	-	1345	-
HCM Lane V/C Ratio	0.011	-	-	0.002	-
HCM Control Delay (s)	9.8	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	56	0	0	78	0	0	0	0	0	0	0
Future Vol, veh/h	0	56	0	0	78	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	0	61	0	0	85	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	85	0	0	61	0	0	146	146	61	146	146	85
Stage 1	-	-	-	-	-	-	61	61	-	85	85	-
Stage 2	-	-	-	-	-	-	85	85	-	61	61	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1347	-	-	1376	-	-	761	695	928	761	695	900
Stage 1	-	-	-	-	-	-	882	790	-	856	771	-
Stage 2	-	-	-	-	-	-	856	771	-	882	790	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1347	-	-	1376	-	-	761	695	928	761	695	900
Mov Cap-2 Maneuver	-	-	-	-	-	-	761	695	-	761	695	-
Stage 1	-	-	-	-	-	-	882	790	-	856	771	-
Stage 2	-	-	-	-	-	-	856	771	-	882	790	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	1347	-	-	1376	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	-	0	-	-	0	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	49	6	2	77	1	0
Future Vol, veh/h	49	6	2	77	1	0
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	68	68	68	68	68	68
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	72	9	3	113	1	0

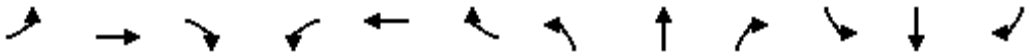
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	81	0	196	77
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	119	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1352	-	731	909
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	839	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1352	-	730	909
Mov Cap-2 Maneuver	-	-	-	-	730	-
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	837	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	730	-	-	1352	-
HCM Lane V/C Ratio	0.002	-	-	0.002	-
HCM Control Delay (s)	9.9	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th Signalized Intersection Summary
1: Old Hwy 111/N. Best Ave & SR 78

05/19/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	76	22	16	90	18	21	29	15	26	28	22
Future Volume (veh/h)	22	76	22	16	90	18	21	29	15	26	28	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	23	79	23	17	94	19	22	30	16	27	29	23
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	40	220	221	30	169	34	38	152	81	46	132	105
Arrive On Green	0.03	0.15	0.15	0.02	0.15	0.15	0.03	0.17	0.17	0.03	0.18	0.18
Sat Flow, veh/h	1372	1441	1221	1372	1163	235	1372	884	472	1372	744	590
Grp Volume(v), veh/h	23	79	23	17	0	113	22	0	46	27	0	52
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	0	1398	1372	0	1356	1372	0	1334
Q Serve(g_s), s	0.5	1.4	0.5	0.4	0.0	2.2	0.5	0.0	0.8	0.6	0.0	1.0
Cycle Q Clear(g_c), s	0.5	1.4	0.5	0.4	0.0	2.2	0.5	0.0	0.8	0.6	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.35	1.00		0.44
Lane Grp Cap(c), veh/h	40	220	221	30	0	204	38	0	233	46	0	237
V/C Ratio(X)	0.58	0.36	0.10	0.56	0.00	0.55	0.57	0.00	0.20	0.58	0.00	0.22
Avail Cap(c_a), veh/h	897	2181	1883	897	0	2117	897	0	2333	897	0	2296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.9	11.0	9.9	14.1	0.0	11.5	14.0	0.0	10.3	13.8	0.0	10.2
Incr Delay (d2), s/veh	12.4	1.0	0.2	15.3	0.0	2.4	12.7	0.0	0.4	11.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.1	0.2	0.0	0.5	0.2	0.0	0.2	0.3	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.3	12.0	10.1	29.3	0.0	13.9	26.7	0.0	10.7	25.0	0.0	10.7
LnGrp LOS	C	B	B	C	A	B	C	A	B	C	A	B
Approach Vol, veh/h		125			130			68			79	
Approach Delay, s/veh		14.3			15.9			15.9			15.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	9.5	5.1	8.9	5.3	9.7	5.3	8.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	50.0	19.0	44.0	19.0	50.0	19.0	44.0
Max Q Clear Time (g_c+I1), s	2.6	2.8	2.4	3.4	2.5	3.0	2.5	4.2
Green Ext Time (p_c), s	0.0	0.2	0.0	0.5	0.0	0.3	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	28	77	26	64	22	61	223	8	29	221	21
Future Volume (veh/h)	24	28	77	26	64	22	61	223	8	29	221	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	26	31	85	29	70	24	67	245	9	32	243	23
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	106	399	338	106	399	338	205	800	357	106	800	357
Arrive On Green	0.08	0.28	0.28	0.08	0.28	0.28	0.08	0.29	0.29	0.08	0.29	0.29
Sat Flow, veh/h	1372	1441	1221	1372	1441	1221	2662	2737	1221	1372	2737	1221
Grp Volume(v), veh/h	26	31	85	29	70	24	67	245	9	32	243	23
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	1441	1221	1331	1369	1221	1372	1369	1221
Q Serve(g_s), s	1.2	1.0	3.5	1.3	2.4	0.9	1.5	4.5	0.3	1.4	4.5	0.9
Cycle Q Clear(g_c), s	1.2	1.0	3.5	1.3	2.4	0.9	1.5	4.5	0.3	1.4	4.5	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	399	338	106	399	338	205	800	357	106	800	357
V/C Ratio(X)	0.25	0.08	0.25	0.27	0.18	0.07	0.33	0.31	0.03	0.30	0.30	0.06
Avail Cap(c_a), veh/h	106	399	338	106	399	338	205	800	357	106	800	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	17.4	18.3	28.3	17.9	17.3	28.4	17.9	16.4	28.4	17.9	16.6
Incr Delay (d2), s/veh	5.5	0.4	1.8	6.3	1.0	0.4	4.2	0.2	0.0	7.3	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.3	1.0	0.6	0.8	0.3	0.6	1.4	0.1	0.7	1.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	17.7	20.0	34.6	18.8	17.7	32.6	18.1	16.4	35.6	18.8	16.9
LnGrp LOS	C	B	C	C	B	B	C	B	B	D	B	B
Approach Vol, veh/h		142			123			321			298	
Approach Delay, s/veh		22.0			22.3			21.1			20.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	23.5	9.5	22.5	9.5	23.5	9.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	3.4	6.5	3.3	5.5	3.5	6.5	3.2	4.4
Green Ext Time (p_c), s	0.0	1.2	0.0	0.3	0.0	1.3	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	52	0	0	90	5	0	0	0	13	0	8
Future Vol, veh/h	2	52	0	0	90	5	0	0	0	13	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	2	58	0	0	100	6	0	0	0	14	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	100	0	0	58	0	0	167	162	58	162	162	100
Stage 1	-	-	-	-	-	-	62	62	-	100	100	-
Stage 2	-	-	-	-	-	-	105	100	-	62	62	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1330	-	-	1380	-	0	736	681	932	742	681	882
Stage 1	-	-	-	-	-	0	881	790	-	840	759	-
Stage 2	-	-	-	-	-	0	835	759	-	881	790	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1330	-	-	1380	-	-	727	680	932	741	680	882
Mov Cap-2 Maneuver	-	-	-	-	-	-	727	680	-	741	680	-
Stage 1	-	-	-	-	-	-	879	788	-	838	759	-
Stage 2	-	-	-	-	-	-	827	759	-	879	788	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	9.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1330	-	-	1380	-	741	882
HCM Lane V/C Ratio	-	-	0.002	-	-	-	-	0.019	0.01
HCM Control Delay (s)	0	0	7.7	0	-	0	-	10	9.1
HCM Lane LOS	A	A	A	A	-	A	-	B	A
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	0.1	0

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	39	25	24	1	12	69
Future Vol, veh/h	39	25	24	1	12	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	42	27	26	1	13	75

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	27	0	-	0	138	27
Stage 1	-	-	-	-	27	-
Stage 2	-	-	-	-	111	-
Critical Hdwy	4.41	-	-	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.479	-	-	-	3.779	3.579
Pot Cap-1 Maneuver	1418	-	-	-	791	971
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1418	-	-	-	767	971
Mov Cap-2 Maneuver	-	-	-	-	767	-
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	SB
HCM Control Delay, s	4.6	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1418	-	-	-	934
HCM Lane V/C Ratio	0.03	-	-	-	0.094
HCM Control Delay (s)	7.6	-	-	-	9.3
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	31	5	17	62	15	33
Future Vol, veh/h	31	5	17	62	15	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	39	6	21	78	19	41

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	45	0	162	42
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	120	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1396	-	766	952
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	838	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1396	-	755	952
Mov Cap-2 Maneuver	-	-	-	-	755	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	825	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	880	-	-	1396	-
HCM Lane V/C Ratio	0.068	-	-	0.015	-
HCM Control Delay (s)	9.4	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	61	1	4	78	6	5
Future Vol, veh/h	61	1	4	78	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	66	1	4	85	7	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	67	0	160	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	93	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1369	-	768	921
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1369	-	766	921
Mov Cap-2 Maneuver	-	-	-	-	766	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	860	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	829	-	-	1369	-
HCM Lane V/C Ratio	0.014	-	-	0.003	-
HCM Control Delay (s)	9.4	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	64	8	1	72	11	3
Future Vol, veh/h	64	8	1	72	11	3
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	83	83	83	83	83	83
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	77	10	1	87	13	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	87	0	171	82
Stage 1	-	-	-	-	82	-
Stage 2	-	-	-	-	89	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1345	-	757	903
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1345	-	756	903
Mov Cap-2 Maneuver	-	-	-	-	756	-
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	865	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	783	-	-	1345	-
HCM Lane V/C Ratio	0.022	-	-	0.001	-
HCM Control Delay (s)	9.7	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	67	0	0	61	0	0	0	0	0	0	0
Future Vol, veh/h	0	67	0	0	61	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	0	73	0	0	66	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	66	0	0	73	0	0	139	139	73	139	139	66
Stage 1	-	-	-	-	-	-	73	73	-	66	66	-
Stage 2	-	-	-	-	-	-	66	66	-	73	73	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1370	-	-	1362	-	-	769	702	914	769	702	922
Stage 1	-	-	-	-	-	-	869	781	-	877	786	-
Stage 2	-	-	-	-	-	-	877	786	-	869	781	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1370	-	-	1362	-	-	769	702	914	769	702	922
Mov Cap-2 Maneuver	-	-	-	-	-	-	769	702	-	769	702	-
Stage 1	-	-	-	-	-	-	869	781	-	877	786	-
Stage 2	-	-	-	-	-	-	877	786	-	869	781	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	1370	-	-	1362	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	-	0	-	-	0	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	11	3	51	10	7
Future Vol, veh/h	41	11	3	51	10	7
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	77	77	77	77	77	77
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	53	14	4	66	13	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	67	0	134	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	74	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1369	-	796	930
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	880	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1369	-	794	930
Mov Cap-2 Maneuver	-	-	-	-	794	-
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	877	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.4
HCM LOS			A

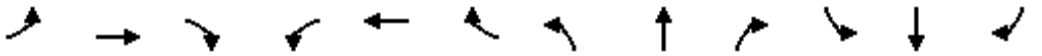
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	845	-	-	1369	-
HCM Lane V/C Ratio	0.026	-	-	0.003	-
HCM Control Delay (s)	9.4	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

APPENDIX D

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS – EXISTING + PROJECT

HCM 6th Signalized Intersection Summary
1: Old Hwy 111/N. Best Ave & SR 78

05/19/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	169	51	13	132	31	41	51	25	45	62	42
Future Volume (veh/h)	35	169	51	13	132	31	41	51	25	45	62	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	36	174	53	13	136	32	42	53	26	46	64	43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	59	319	329	23	221	52	67	141	69	72	127	85
Arrive On Green	0.04	0.22	0.22	0.02	0.20	0.20	0.05	0.15	0.15	0.05	0.16	0.16
Sat Flow, veh/h	1372	1441	1221	1372	1128	265	1372	912	448	1372	804	540
Grp Volume(v), veh/h	36	174	53	13	0	168	42	0	79	46	0	107
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	0	1393	1372	0	1360	1372	0	1343
Q Serve(g_s), s	0.8	3.5	1.1	0.3	0.0	3.6	1.0	0.0	1.7	1.1	0.0	2.4
Cycle Q Clear(g_c), s	0.8	3.5	1.1	0.3	0.0	3.6	1.0	0.0	1.7	1.1	0.0	2.4
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.33	1.00		0.40
Lane Grp Cap(c), veh/h	59	319	329	23	0	272	67	0	210	72	0	212
V/C Ratio(X)	0.61	0.55	0.16	0.56	0.00	0.62	0.63	0.00	0.38	0.64	0.00	0.50
Avail Cap(c_a), veh/h	804	1955	1716	804	0	1890	804	0	2097	804	0	2072
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.3	11.2	9.0	15.8	0.0	11.9	15.1	0.0	12.3	15.1	0.0	12.5
Incr Delay (d2), s/veh	10.0	1.5	0.2	19.0	0.0	2.3	9.4	0.0	1.1	9.2	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.8	0.2	0.2	0.0	0.9	0.4	0.0	0.4	0.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	12.6	9.3	34.8	0.0	14.2	24.6	0.0	13.4	24.2	0.0	14.3
LnGrp LOS	C	B	A	C	A	B	C	A	B	C	A	B
Approach Vol, veh/h		263			181			121			153	
Approach Delay, s/veh		13.7			15.7			17.3			17.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	9.5	5.1	11.7	6.1	9.6	5.9	10.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	50.0	19.0	44.0	19.0	50.0	19.0	44.0
Max Q Clear Time (g_c+I1), s	3.1	3.7	2.3	5.5	3.0	4.4	2.8	5.6
Green Ext Time (p_c), s	0.1	0.5	0.0	1.1	0.1	0.6	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	85	142	32	98	46	70	289	29	96	487	32
Future Volume (veh/h)	32	85	142	32	98	46	70	289	29	96	487	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	33	88	146	33	101	47	72	298	30	99	502	33
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	106	399	338	106	399	338	205	800	357	106	800	357
Arrive On Green	0.08	0.28	0.28	0.08	0.28	0.28	0.08	0.29	0.29	0.08	0.29	0.29
Sat Flow, veh/h	1372	1441	1221	1372	1441	1221	2662	2737	1221	1372	2737	1221
Grp Volume(v), veh/h	33	88	146	33	101	47	72	298	30	99	502	33
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	1441	1221	1331	1369	1221	1372	1369	1221
Q Serve(g_s), s	1.5	3.1	6.4	1.5	3.5	1.9	1.7	5.6	1.2	4.7	10.3	1.3
Cycle Q Clear(g_c), s	1.5	3.1	6.4	1.5	3.5	1.9	1.7	5.6	1.2	4.7	10.3	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	399	338	106	399	338	205	800	357	106	800	357
V/C Ratio(X)	0.31	0.22	0.43	0.31	0.25	0.14	0.35	0.37	0.08	0.94	0.63	0.09
Avail Cap(c_a), veh/h	106	399	338	106	399	338	205	800	357	106	800	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	18.1	19.3	28.4	18.3	17.7	28.5	18.3	16.7	29.8	19.9	16.7
Incr Delay (d2), s/veh	7.6	1.3	4.0	7.6	1.5	0.9	4.7	0.3	0.1	72.1	3.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.0	1.9	0.6	1.2	0.5	0.6	1.7	0.3	3.6	3.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	19.4	23.3	35.9	19.8	18.5	33.2	18.6	16.8	101.9	23.6	17.2
LnGrp LOS	D	B	C	D	B	B	C	B	B	F	C	B
Approach Vol, veh/h		267			181			400			634	
Approach Delay, s/veh		23.6			22.4			21.0			35.5	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	23.5	9.5	22.5	9.5	23.5	9.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	10.7	7.6	3.5	8.4	3.7	12.3	3.5	5.5
Green Ext Time (p_c), s	0.0	1.5	0.0	0.6	0.0	1.9	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	194	0	0	131	9	0	0	0	23	0	6
Future Vol, veh/h	6	194	0	0	131	9	0	0	0	23	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	8	246	0	0	166	11	0	0	0	29	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	166	0	0	246	0	0	432	428	246	428	428	166
Stage 1	-	-	-	-	-	-	262	262	-	166	166	-
Stage 2	-	-	-	-	-	-	170	166	-	262	262	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1254	-	-	1168	-	0	487	478	727	490	478	808
Stage 1	-	-	-	-	-	0	683	641	-	772	709	-
Stage 2	-	-	-	-	-	0	768	709	-	683	641	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1254	-	-	1168	-	-	480	475	727	488	475	808
Mov Cap-2 Maneuver	-	-	-	-	-	-	480	475	-	488	475	-
Stage 1	-	-	-	-	-	-	678	637	-	767	709	-
Stage 2	-	-	-	-	-	-	761	709	-	678	637	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	0	12.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1254	-	-	1168	-	488	808
HCM Lane V/C Ratio	-	-	0.006	-	-	-	-	0.06	0.009
HCM Control Delay (s)	0	0	7.9	0	-	0	-	12.8	9.5
HCM Lane LOS	A	A	A	A	-	A	-	B	A
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	0.2	0

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	109	111	48	15	25	92
Future Vol, veh/h	109	111	48	15	25	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	149	152	66	21	34	126

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	87	0	-	0	527	77
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	450	-
Critical Hdwy	4.41	-	-	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.479	-	-	-	3.779	3.579
Pot Cap-1 Maneuver	1345	-	-	-	464	909
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	585	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1345	-	-	-	412	909
Mov Cap-2 Maneuver	-	-	-	-	412	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	585	-

Approach	EB	WB	SB
HCM Control Delay, s	4	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1345	-	-	-	723
HCM Lane V/C Ratio	0.111	-	-	-	0.222
HCM Control Delay (s)	8	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.8

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	103	11	3	115	9	2
Future Vol, veh/h	103	11	3	115	9	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	149	16	4	167	13	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	165	0	332	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	175	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1255	-	608	818
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	790	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1255	-	606	818
Mov Cap-2 Maneuver	-	-	-	-	606	-
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	788	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	1255	-
HCM Lane V/C Ratio	0.025	-	-	0.003	-
HCM Control Delay (s)	10.8	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	100	5	2	109	7	1
Future Vol, veh/h	100	5	2	109	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	137	7	3	149	10	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	144	0	296	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	155	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1279	-	638	835
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1279	-	636	835
Mov Cap-2 Maneuver	-	-	-	-	636	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	805	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	656	-	-	1279	-
HCM Lane V/C Ratio	0.017	-	-	0.002	-
HCM Control Delay (s)	10.6	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	88	12	3	104	8	2
Future Vol, veh/h	88	12	3	104	8	2
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	72	72	72	72	72	72
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	122	17	4	144	11	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	139	0	283	131
Stage 1	-	-	-	-	131	-
Stage 2	-	-	-	-	152	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1284	-	650	847
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	810	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1284	-	648	847
Mov Cap-2 Maneuver	-	-	-	-	648	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	680	-	-	1284	-
HCM Lane V/C Ratio	0.02	-	-	0.003	-
HCM Control Delay (s)	10.4	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	62	21	4	83	0	18	0	1	0	0	6
Future Vol, veh/h	7	62	21	4	83	0	18	0	1	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	8	67	23	4	90	0	20	0	1	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	90	0	0	90	0	0	185	181	67	193	204	90
Stage 1	-	-	-	-	-	-	83	83	-	98	98	-
Stage 2	-	-	-	-	-	-	102	98	-	95	106	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1341	-	-	1341	-	-	716	664	921	707	644	894
Stage 1	-	-	-	-	-	-	858	773	-	842	761	-
Stage 2	-	-	-	-	-	-	838	761	-	845	755	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1341	-	-	1341	-	-	706	658	921	701	638	894
Mov Cap-2 Maneuver	-	-	-	-	-	-	706	658	-	701	638	-
Stage 1	-	-	-	-	-	-	853	768	-	837	759	-
Stage 2	-	-	-	-	-	-	829	759	-	839	750	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.4	10.1	9.1
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	706	921	1341	-	-	1341	-	-	-	894
HCM Lane V/C Ratio	0.028	0.001	0.006	-	-	0.003	-	-	-	0.007
HCM Control Delay (s)	10.2	8.9	7.7	-	-	7.7	-	-	0	9.1
HCM Lane LOS	B	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	52	10	3	81	4	1
Future Vol, veh/h	52	10	3	81	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	76	15	4	119	6	1

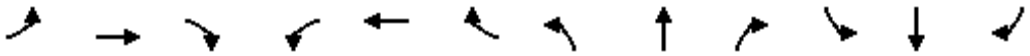
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	91	0	211	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	127	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1340	-	717	901
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1340	-	715	901
Mov Cap-2 Maneuver	-	-	-	-	715	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	830	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	746	-	-	1340	-
HCM Lane V/C Ratio	0.01	-	-	0.003	-
HCM Control Delay (s)	9.9	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th Signalized Intersection Summary
1: Old Hwy 111/N. Best Ave & SR 78

05/19/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	96	22	16	108	18	21	29	15	26	28	22
Future Volume (veh/h)	22	96	22	16	108	18	21	29	15	26	28	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	23	100	23	17	112	19	22	30	16	27	29	23
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	40	239	236	30	190	32	38	150	80	46	130	103
Arrive On Green	0.03	0.17	0.17	0.02	0.16	0.16	0.03	0.17	0.17	0.03	0.17	0.17
Sat Flow, veh/h	1372	1441	1221	1372	1200	204	1372	884	472	1372	744	590
Grp Volume(v), veh/h	23	100	23	17	0	131	22	0	46	27	0	52
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	0	1404	1372	0	1356	1372	0	1334
Q Serve(g_s), s	0.5	1.8	0.5	0.4	0.0	2.6	0.5	0.0	0.9	0.6	0.0	1.0
Cycle Q Clear(g_c), s	0.5	1.8	0.5	0.4	0.0	2.6	0.5	0.0	0.9	0.6	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.35	1.00		0.44
Lane Grp Cap(c), veh/h	40	239	236	30	0	223	38	0	229	46	0	233
V/C Ratio(X)	0.58	0.42	0.10	0.56	0.00	0.59	0.57	0.00	0.20	0.59	0.00	0.22
Avail Cap(c_a), veh/h	882	2146	1853	882	0	2091	882	0	2295	882	0	2258
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	11.0	9.8	14.3	0.0	11.5	14.2	0.0	10.6	14.1	0.0	10.5
Incr Delay (d2), s/veh	12.4	1.2	0.2	15.3	0.0	2.5	12.8	0.0	0.4	11.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	0.1	0.2	0.0	0.6	0.2	0.0	0.2	0.3	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	12.2	10.0	29.6	0.0	14.0	27.0	0.0	11.0	25.3	0.0	10.9
LnGrp LOS	C	B	A	C	A	B	C	A	B	C	A	B
Approach Vol, veh/h		146			148			68			79	
Approach Delay, s/veh		14.1			15.8			16.2			15.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	9.5	5.2	9.4	5.3	9.7	5.4	9.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	50.0	19.0	44.0	19.0	50.0	19.0	44.0
Max Q Clear Time (g_c+I1), s	2.6	2.9	2.4	3.8	2.5	3.0	2.5	4.6
Green Ext Time (p_c), s	0.0	0.2	0.0	0.6	0.0	0.3	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	48	77	34	82	32	61	223	16	40	221	21
Future Volume (veh/h)	24	48	77	34	82	32	61	223	16	40	221	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	26	53	85	37	90	35	67	245	18	44	243	23
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	106	399	338	106	399	338	205	800	357	106	800	357
Arrive On Green	0.08	0.28	0.28	0.08	0.28	0.28	0.08	0.29	0.29	0.08	0.29	0.29
Sat Flow, veh/h	1372	1441	1221	1372	1441	1221	2662	2737	1221	1372	2737	1221
Grp Volume(v), veh/h	26	53	85	37	90	35	67	245	18	44	243	23
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	1441	1221	1331	1369	1221	1372	1369	1221
Q Serve(g_s), s	1.2	1.8	3.5	1.7	3.1	1.4	1.5	4.5	0.7	2.0	4.5	0.9
Cycle Q Clear(g_c), s	1.2	1.8	3.5	1.7	3.1	1.4	1.5	4.5	0.7	2.0	4.5	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	399	338	106	399	338	205	800	357	106	800	357
V/C Ratio(X)	0.25	0.13	0.25	0.35	0.23	0.10	0.33	0.31	0.05	0.42	0.30	0.06
Avail Cap(c_a), veh/h	106	399	338	106	399	338	205	800	357	106	800	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	17.6	18.3	28.5	18.1	17.5	28.4	17.9	16.5	28.6	17.9	16.6
Incr Delay (d2), s/veh	5.5	0.7	1.8	8.9	1.3	0.6	4.2	0.2	0.1	11.7	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.6	1.0	0.7	1.0	0.4	0.6	1.4	0.2	1.0	1.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	18.3	20.0	37.4	19.4	18.1	32.6	18.1	16.6	40.3	18.8	16.9
LnGrp LOS	C	B	C	D	B	B	C	B	B	D	B	B
Approach Vol, veh/h		164			162			330			310	
Approach Delay, s/veh		21.7			23.2			21.0			21.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	23.5	9.5	22.5	9.5	23.5	9.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	4.0	6.5	3.7	5.5	3.5	6.5	3.2	5.1
Green Ext Time (p_c), s	0.0	1.2	0.0	0.3	0.0	1.3	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	91	0	0	125	10	0	0	0	19	0	8
Future Vol, veh/h	2	91	0	0	125	10	0	0	0	19	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	2	101	0	0	139	11	0	0	0	21	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	139	0	0	101	0	0	249	244	101	244	244	139
Stage 1	-	-	-	-	-	-	105	105	-	139	139	-
Stage 2	-	-	-	-	-	-	144	139	-	105	105	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1284	-	-	1328	-	0	648	611	881	653	611	838
Stage 1	-	-	-	-	-	0	835	755	-	799	729	-
Stage 2	-	-	-	-	-	0	794	729	-	835	755	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1284	-	-	1328	-	-	640	610	881	652	610	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	640	610	-	652	610	-
Stage 1	-	-	-	-	-	-	833	753	-	797	729	-
Stage 2	-	-	-	-	-	-	786	729	-	833	753	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	0	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1284	-	-	1328	-	652	838
HCM Lane V/C Ratio	-	-	0.002	-	-	-	-	0.032	0.011
HCM Control Delay (s)	0	0	7.8	0	-	0	-	10.7	9.3
HCM Lane LOS	A	A	A	A	-	A	-	B	A
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	0.1	0

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	84	25	24	7	17	109
Future Vol, veh/h	84	25	24	7	17	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	91	27	26	8	18	118

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	34	0	-	0	239	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	209	-
Critical Hdwy	4.41	-	-	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.479	-	-	-	3.779	3.579
Pot Cap-1 Maneuver	1409	-	-	-	690	967
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	762	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1409	-	-	-	645	967
Mov Cap-2 Maneuver	-	-	-	-	645	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	762	-

Approach	EB	WB	SB
HCM Control Delay, s	6	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1409	-	-	-	906
HCM Lane V/C Ratio	0.065	-	-	-	0.151
HCM Control Delay (s)	7.7	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	9	18	103	19	34
Future Vol, veh/h	77	9	18	103	19	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	96	11	23	129	24	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	107	0	277	102
Stage 1	-	-	-	-	102	-
Stage 2	-	-	-	-	175	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1321	-	655	880
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	790	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1321	-	644	880
Mov Cap-2 Maneuver	-	-	-	-	644	-
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	777	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	778	-	-	1321	-
HCM Lane V/C Ratio	0.085	-	-	0.017	-
HCM Control Delay (s)	10.1	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	103	6	5	115	11	6
Future Vol, veh/h	103	6	5	115	11	6
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, %	31	31	31	31	31	31
Mvmt Flow	112	7	5	125	12	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	119	0	251	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	135	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1307	-	679	863
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	825	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1307	-	676	863
Mov Cap-2 Maneuver	-	-	-	-	676	-
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	732	-	-	1307	-
HCM Lane V/C Ratio	0.025	-	-	0.004	-
HCM Control Delay (s)	10	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	102	12	2	106	15	4
Future Vol, veh/h	102	12	2	106	15	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	123	14	2	128	18	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	137	0	262	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	132	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1287	-	669	848
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1287	-	668	848
Mov Cap-2 Maneuver	-	-	-	-	668	-
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	825	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	699	-	-	1287	-
HCM Lane V/C Ratio	0.033	-	-	0.002	-
HCM Control Delay (s)	10.3	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	74	24	1	67	1	22	0	1	1	0	7
Future Vol, veh/h	8	74	24	1	67	1	22	0	1	1	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	9	80	26	1	73	1	24	0	1	1	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	74	0	0	106	0	0	178	174	80	187	199	73
Stage 1	-	-	-	-	-	-	98	98	-	75	75	-
Stage 2	-	-	-	-	-	-	80	76	-	112	124	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1360	-	-	1322	-	-	724	670	905	714	648	914
Stage 1	-	-	-	-	-	-	842	761	-	867	779	-
Stage 2	-	-	-	-	-	-	861	778	-	827	741	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1360	-	-	1322	-	-	714	665	905	709	643	914
Mov Cap-2 Maneuver	-	-	-	-	-	-	714	665	-	709	643	-
Stage 1	-	-	-	-	-	-	836	756	-	861	778	-
Stage 2	-	-	-	-	-	-	853	777	-	821	736	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	10.1	9.1
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	714	905	1360	-	-	1322	-	-	709	914
HCM Lane V/C Ratio	0.033	0.001	0.006	-	-	0.001	-	-	0.002	0.008
HCM Control Delay (s)	10.2	9	7.7	-	-	7.7	-	-	10.1	9
HCM Lane LOS	B	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0	0

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	15	4	55	14	8
Future Vol, veh/h	46	15	4	55	14	8
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	77	77	77	77	77	77
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	60	19	5	71	18	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	79	0	151	70
Stage 1	-	-	-	-	70	-
Stage 2	-	-	-	-	81	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1354	-	777	917
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	874	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	774	917
Mov Cap-2 Maneuver	-	-	-	-	774	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	871	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.5
HCM LOS			A

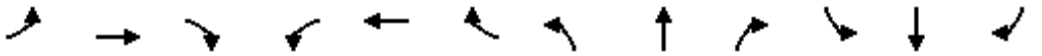
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	821	-	-	1354	-
HCM Lane V/C Ratio	0.035	-	-	0.004	-
HCM Control Delay (s)	9.5	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

APPENDIX E

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS – EXISTING + PROJECT + CUMULATIVE PROJECTS

HCM 6th Signalized Intersection Summary
1: Old Hwy 111/N. Best Ave & SR 78

05/19/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	187	57	15	146	35	46	57	28	50	69	47
Future Volume (veh/h)	39	187	57	15	146	35	46	57	28	50	69	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	40	193	59	15	151	36	47	59	29	52	71	48
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	63	340	353	27	235	56	72	144	71	78	130	88
Arrive On Green	0.05	0.24	0.24	0.02	0.21	0.21	0.05	0.16	0.16	0.06	0.16	0.16
Sat Flow, veh/h	1372	1441	1221	1372	1124	268	1372	912	448	1372	801	542
Grp Volume(v), veh/h	40	193	59	15	0	187	47	0	88	52	0	119
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	0	1392	1372	0	1360	1372	0	1343
Q Serve(g_s), s	1.0	4.0	1.2	0.4	0.0	4.2	1.1	0.0	2.0	1.3	0.0	2.8
Cycle Q Clear(g_c), s	1.0	4.0	1.2	0.4	0.0	4.2	1.1	0.0	2.0	1.3	0.0	2.8
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.33	1.00		0.40
Lane Grp Cap(c), veh/h	63	340	353	27	0	292	72	0	214	78	0	217
V/C Ratio(X)	0.63	0.57	0.17	0.56	0.00	0.64	0.65	0.00	0.41	0.66	0.00	0.55
Avail Cap(c_a), veh/h	767	1866	1645	767	0	1803	767	0	2001	767	0	1976
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.9	11.4	9.0	16.5	0.0	12.3	15.8	0.0	12.9	15.7	0.0	13.1
Incr Delay (d2), s/veh	9.9	1.5	0.2	17.3	0.0	2.4	9.4	0.0	1.3	9.3	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.0	0.2	0.2	0.0	1.0	0.5	0.0	0.5	0.5	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	12.9	9.2	33.8	0.0	14.6	25.2	0.0	14.2	25.0	0.0	15.2
LnGrp LOS	C	B	A	C	A	B	C	A	B	C	A	B
Approach Vol, veh/h		292			202			135			171	
Approach Delay, s/veh		13.9			16.0			18.0			18.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	9.9	5.2	12.5	6.3	10.0	6.1	11.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	50.0	19.0	44.0	19.0	50.0	19.0	44.0
Max Q Clear Time (g_c+I1), s	3.3	4.0	2.4	6.0	3.1	4.8	3.0	6.2
Green Ext Time (p_c), s	0.1	0.5	0.0	1.3	0.1	0.7	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	93	159	35	108	51	78	324	32	106	545	36
Future Volume (veh/h)	36	93	159	35	108	51	78	324	32	106	545	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	37	96	164	36	111	53	80	334	33	109	562	37
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	106	399	338	106	399	338	205	800	357	106	800	357
Arrive On Green	0.08	0.28	0.28	0.08	0.28	0.28	0.08	0.29	0.29	0.08	0.29	0.29
Sat Flow, veh/h	1372	1441	1221	1372	1441	1221	2662	2737	1221	1372	2737	1221
Grp Volume(v), veh/h	37	96	164	36	111	53	80	334	33	109	562	37
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	1441	1221	1331	1369	1221	1372	1369	1221
Q Serve(g_s), s	1.7	3.4	7.3	1.6	3.9	2.1	1.9	6.4	1.3	5.0	11.9	1.4
Cycle Q Clear(g_c), s	1.7	3.4	7.3	1.6	3.9	2.1	1.9	6.4	1.3	5.0	11.9	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	399	338	106	399	338	205	800	357	106	800	357
V/C Ratio(X)	0.35	0.24	0.49	0.34	0.28	0.16	0.39	0.42	0.09	1.03	0.70	0.10
Avail Cap(c_a), veh/h	106	399	338	106	399	338	205	800	357	106	800	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	18.2	19.6	28.4	18.4	17.8	28.6	18.5	16.7	30.0	20.5	16.8
Incr Delay (d2), s/veh	8.9	1.4	4.9	8.6	1.7	1.0	5.5	0.3	0.1	96.7	5.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.1	2.2	0.7	1.3	0.6	0.7	1.9	0.3	4.4	4.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	19.6	24.5	37.0	20.1	18.8	34.1	18.9	16.8	126.7	25.6	17.4
LnGrp LOS	D	B	C	D	C	B	C	B	B	F	C	B
Approach Vol, veh/h		297			200			447			708	
Approach Delay, s/veh		24.6			22.8			21.5			40.7	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	23.5	9.5	22.5	9.5	23.5	9.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	7.0	8.4	3.6	9.3	3.9	13.9	3.7	5.9
Green Ext Time (p_c), s	0.0	1.7	0.0	0.6	0.0	1.8	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	30.4
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	213	0	0	143	10	0	0	0	25	0	7
Future Vol, veh/h	7	213	0	0	143	10	0	0	0	25	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	9	270	0	0	181	13	0	0	0	32	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	181	0	0	270	0	0	474	469	270	469	469	181
Stage 1	-	-	-	-	-	-	288	288	-	181	181	-
Stage 2	-	-	-	-	-	-	186	181	-	288	288	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1237	-	-	1143	-	0	456	452	704	459	452	792
Stage 1	-	-	-	-	-	0	661	624	-	758	698	-
Stage 2	-	-	-	-	-	0	753	698	-	661	624	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1237	-	-	1143	-	-	448	448	704	456	448	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	448	448	-	456	448	-
Stage 1	-	-	-	-	-	-	655	618	-	751	698	-
Stage 2	-	-	-	-	-	-	745	698	-	655	618	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	12.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1237	-	-	1143	-	456	792
HCM Lane V/C Ratio	-	-	0.007	-	-	-	-	0.069	0.011
HCM Control Delay (s)	0	0	7.9	0	-	0	-	13.5	9.6
HCM Lane LOS	A	A	A	A	-	A	-	B	A
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	0.2	0

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	117	124	54	16	28	99
Future Vol, veh/h	117	124	54	16	28	99
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	160	170	74	22	38	136

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	96	0	-	0	575	85
Stage 1	-	-	-	-	85	-
Stage 2	-	-	-	-	490	-
Critical Hdwy	4.41	-	-	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.479	-	-	-	3.779	3.579
Pot Cap-1 Maneuver	1334	-	-	-	434	900
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	560	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1334	-	-	-	382	900
Mov Cap-2 Maneuver	-	-	-	-	382	-
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	560	-

Approach	EB	WB	SB
HCM Control Delay, s	3.9	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1334	-	-	-	693
HCM Lane V/C Ratio	0.12	-	-	-	0.251
HCM Control Delay (s)	8.1	-	-	-	11.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	111	12	3	125	10	2
Future Vol, veh/h	111	12	3	125	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	161	17	4	181	14	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	178	0	359	170
Stage 1	-	-	-	-	170	-
Stage 2	-	-	-	-	189	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1241	-	586	804
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	778	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1241	-	584	804
Mov Cap-2 Maneuver	-	-	-	-	584	-
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	776	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	612	-	-	1241	-
HCM Lane V/C Ratio	0.028	-	-	0.004	-
HCM Control Delay (s)	11.1	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	108	5	2	118	7	1
Future Vol, veh/h	108	5	2	118	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	148	7	3	162	10	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	155	0	320	152
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1266	-	618	823
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	796	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1266	-	616	823
Mov Cap-2 Maneuver	-	-	-	-	616	-
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	794	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	1266	-
HCM Lane V/C Ratio	0.017	-	-	0.002	-
HCM Control Delay (s)	10.8	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	13	3	113	9	2
Future Vol, veh/h	95	13	3	113	9	2
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	72	72	72	72	72	72
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	132	18	4	157	13	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	150	0	306	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	165	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1272	-	630	835
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	799	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1272	-	628	835
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	797	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	658	-	-	1272	-
HCM Lane V/C Ratio	0.023	-	-	0.003	-
HCM Control Delay (s)	10.6	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	69	21	4	92	0	18	0	1	0	0	6
Future Vol, veh/h	7	69	21	4	92	0	18	0	1	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	8	75	23	4	100	0	20	0	1	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	100	0	0	98	0	0	203	199	75	211	222	100
Stage 1	-	-	-	-	-	-	91	91	-	108	108	-
Stage 2	-	-	-	-	-	-	112	108	-	103	114	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1330	-	-	1332	-	-	696	648	911	688	629	882
Stage 1	-	-	-	-	-	-	849	766	-	831	753	-
Stage 2	-	-	-	-	-	-	827	753	-	837	748	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1330	-	-	1332	-	-	686	642	911	682	623	882
Mov Cap-2 Maneuver	-	-	-	-	-	-	686	642	-	682	623	-
Stage 1	-	-	-	-	-	-	844	761	-	826	751	-
Stage 2	-	-	-	-	-	-	818	751	-	831	744	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	10.3	9.1
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	686	911	1330	-	-	1332	-	-	-	882
HCM Lane V/C Ratio	0.029	0.001	0.006	-	-	0.003	-	-	-	0.007
HCM Control Delay (s)	10.4	9	7.7	-	-	7.7	-	-	0	9.1
HCM Lane LOS	B	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	11	3	90	4	1
Future Vol, veh/h	58	11	3	90	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	85	16	4	132	6	1

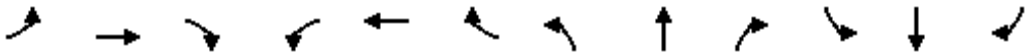
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	101	0	233	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	140	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1328	-	696	890
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	820	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1328	-	694	890
Mov Cap-2 Maneuver	-	-	-	-	694	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	818	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	726	-	-	1328	-
HCM Lane V/C Ratio	0.01	-	-	0.003	-
HCM Control Delay (s)	10	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th Signalized Intersection Summary
1: Old Hwy 111/N. Best Ave & SR 78

05/19/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	105	25	18	119	20	24	32	17	29	31	25
Future Volume (veh/h)	25	105	25	18	119	20	24	32	17	29	31	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	26	109	26	19	124	21	25	33	18	30	32	26
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	44	259	258	33	207	35	43	145	79	51	125	102
Arrive On Green	0.03	0.18	0.18	0.02	0.17	0.17	0.03	0.16	0.16	0.04	0.17	0.17
Sat Flow, veh/h	1372	1441	1221	1372	1201	203	1372	876	478	1372	735	598
Grp Volume(v), veh/h	26	109	26	19	0	145	25	0	51	30	0	58
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	0	1404	1372	0	1355	1372	0	1333
Q Serve(g_s), s	0.6	2.0	0.5	0.4	0.0	2.9	0.5	0.0	1.0	0.7	0.0	1.1
Cycle Q Clear(g_c), s	0.6	2.0	0.5	0.4	0.0	2.9	0.5	0.0	1.0	0.7	0.0	1.1
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.35	1.00		0.45
Lane Grp Cap(c), veh/h	44	259	258	33	0	242	43	0	223	51	0	227
V/C Ratio(X)	0.58	0.42	0.10	0.57	0.00	0.60	0.58	0.00	0.23	0.59	0.00	0.26
Avail Cap(c_a), veh/h	860	2091	1810	860	0	2038	860	0	2234	860	0	2199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	11.0	9.6	14.6	0.0	11.6	14.5	0.0	11.0	14.4	0.0	10.9
Incr Delay (d2), s/veh	11.6	1.1	0.2	14.2	0.0	2.4	11.9	0.0	0.5	10.6	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.5	0.1	0.2	0.0	0.7	0.3	0.0	0.2	0.3	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	12.1	9.8	28.9	0.0	14.0	26.3	0.0	11.5	25.0	0.0	11.5
LnGrp LOS	C	B	A	C	A	B	C	A	B	C	A	B
Approach Vol, veh/h		161			164			76			88	
Approach Delay, s/veh		14.0			15.7			16.4			16.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	9.5	5.2	10.0	5.4	9.7	5.5	9.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	50.0	19.0	44.0	19.0	50.0	19.0	44.0
Max Q Clear Time (g_c+I1), s	2.7	3.0	2.4	4.0	2.5	3.1	2.6	4.9
Green Ext Time (p_c), s	0.0	0.3	0.0	0.6	0.0	0.3	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	51	86	37	90	35	68	250	17	43	248	24
Future Volume (veh/h)	27	51	86	37	90	35	68	250	17	43	248	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441	1441
Adj Flow Rate, veh/h	30	56	95	41	99	38	75	275	19	47	273	26
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	31	31	31	31	31	31	31	31	31	31	31	31
Cap, veh/h	106	399	338	106	399	338	205	800	357	106	800	357
Arrive On Green	0.08	0.28	0.28	0.08	0.28	0.28	0.08	0.29	0.29	0.08	0.29	0.29
Sat Flow, veh/h	1372	1441	1221	1372	1441	1221	2662	2737	1221	1372	2737	1221
Grp Volume(v), veh/h	30	56	95	41	99	38	75	275	19	47	273	26
Grp Sat Flow(s),veh/h/ln	1372	1441	1221	1372	1441	1221	1331	1369	1221	1372	1369	1221
Q Serve(g_s), s	1.3	1.9	4.0	1.8	3.5	1.5	1.7	5.1	0.7	2.1	5.1	1.0
Cycle Q Clear(g_c), s	1.3	1.9	4.0	1.8	3.5	1.5	1.7	5.1	0.7	2.1	5.1	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	399	338	106	399	338	205	800	357	106	800	357
V/C Ratio(X)	0.28	0.14	0.28	0.39	0.25	0.11	0.37	0.34	0.05	0.45	0.34	0.07
Avail Cap(c_a), veh/h	106	399	338	106	399	338	205	800	357	106	800	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	17.7	18.4	28.5	18.2	17.5	28.5	18.1	16.5	28.7	18.1	16.6
Incr Delay (d2), s/veh	6.6	0.7	2.1	10.4	1.5	0.7	5.0	0.3	0.1	13.0	1.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	1.1	0.8	1.1	0.4	0.7	1.5	0.2	1.1	1.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	18.4	20.5	39.0	19.7	18.2	33.5	18.3	16.6	41.7	19.2	17.0
LnGrp LOS	C	B	C	D	B	B	C	B	B	D	B	B
Approach Vol, veh/h		181			178			369			346	
Approach Delay, s/veh		22.2			23.8			21.3			22.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	23.5	9.5	22.5	9.5	23.5	9.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	4.1	7.1	3.8	6.0	3.7	7.1	3.3	5.5
Green Ext Time (p_c), s	0.0	1.4	0.0	0.4	0.0	1.4	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	97	0	0	136	11	0	0	0	21	0	9
Future Vol, veh/h	2	97	0	0	136	11	0	0	0	21	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	2	108	0	0	151	12	0	0	0	23	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	151	0	0	108	0	0	268	263	108	263	263	151
Stage 1	-	-	-	-	-	-	112	112	-	151	151	-
Stage 2	-	-	-	-	-	-	156	151	-	112	112	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1271	-	-	1320	-	0	630	596	873	634	596	824
Stage 1	-	-	-	-	-	0	827	750	-	787	720	-
Stage 2	-	-	-	-	-	0	782	720	-	827	750	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1271	-	-	1320	-	-	621	595	873	633	595	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	621	595	-	633	595	-
Stage 1	-	-	-	-	-	-	825	749	-	785	720	-
Stage 2	-	-	-	-	-	-	773	720	-	825	749	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	0	10.5
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1271	-	-	1320	-	633	824
HCM Lane V/C Ratio	-	-	0.002	-	-	-	-	0.037	0.012
HCM Control Delay (s)	0	0	7.8	0	-	0	-	10.9	9.4
HCM Lane LOS	A	A	A	A	-	A	-	B	A
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	0.1	0

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	28	27	7	18	117
Future Vol, veh/h	89	28	27	7	18	117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	97	30	29	8	20	127

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	37	0	-	0	257	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	224	-
Critical Hdwy	4.41	-	-	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.479	-	-	-	3.779	3.579
Pot Cap-1 Maneuver	1406	-	-	-	673	963
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	749	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1406	-	-	-	627	963
Mov Cap-2 Maneuver	-	-	-	-	627	-
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	749	-

Approach	EB	WB	SB
HCM Control Delay, s	5.9	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1406	-	-	-	899
HCM Lane V/C Ratio	0.069	-	-	-	0.163
HCM Control Delay (s)	7.8	-	-	-	9.8
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	81	10	20	110	21	38
Future Vol, veh/h	81	10	20	110	21	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	101	13	25	138	26	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	114	0	296	108
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	188	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1313	-	638	873
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1313	-	626	873
Mov Cap-2 Maneuver	-	-	-	-	626	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	764	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	765	-	-	1313	-
HCM Lane V/C Ratio	0.096	-	-	0.019	-
HCM Control Delay (s)	10.2	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	6	5	124	12	7
Future Vol, veh/h	110	6	5	124	12	7
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, %	31	31	31	31	31	31
Mvmt Flow	120	7	5	135	13	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	127	0	269	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	145	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1298	-	662	854
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	816	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1298	-	659	854
Mov Cap-2 Maneuver	-	-	-	-	659	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	813	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	720	-	-	1298	-
HCM Lane V/C Ratio	0.029	-	-	0.004	-
HCM Control Delay (s)	10.1	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	13	2	115	16	4
Future Vol, veh/h	110	13	2	115	16	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	133	16	2	139	19	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	149	0	284	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	143	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1273	-	649	835
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	818	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1273	-	648	835
Mov Cap-2 Maneuver	-	-	-	-	648	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	816	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	678	-	-	1273	-
HCM Lane V/C Ratio	0.036	-	-	0.002	-
HCM Control Delay (s)	10.5	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	82	24	1	74	1	22	0	1	1	0	7
Future Vol, veh/h	8	82	24	1	74	1	22	0	1	1	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	0	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	31	31	31	31	31	31	31	31	31	31	31	31
Mvmt Flow	9	89	26	1	80	1	24	0	1	1	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	81	0	0	115	0	0	194	190	89	203	215	80
Stage 1	-	-	-	-	-	-	107	107	-	82	82	-
Stage 2	-	-	-	-	-	-	87	83	-	121	133	-
Critical Hdwy	4.41	-	-	4.41	-	-	7.41	6.81	6.51	7.41	6.81	6.51
Critical Hdwy Stg 1	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.41	5.81	-	6.41	5.81	-
Follow-up Hdwy	2.479	-	-	2.479	-	-	3.779	4.279	3.579	3.779	4.279	3.579
Pot Cap-1 Maneuver	1352	-	-	1312	-	-	706	656	895	696	635	905
Stage 1	-	-	-	-	-	-	832	754	-	859	774	-
Stage 2	-	-	-	-	-	-	854	773	-	818	734	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1352	-	-	1312	-	-	696	651	895	691	630	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	696	651	-	691	630	-
Stage 1	-	-	-	-	-	-	826	749	-	853	773	-
Stage 2	-	-	-	-	-	-	846	772	-	812	729	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	10.3	9.2
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	696	895	1352	-	-	1312	-	-	691	905
HCM Lane V/C Ratio	0.034	0.001	0.006	-	-	0.001	-	-	0.002	0.008
HCM Control Delay (s)	10.4	9	7.7	-	-	7.7	-	-	10.2	9
HCM Lane LOS	B	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0	0

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	51	16	4	61	15	9
Future Vol, veh/h	51	16	4	61	15	9
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	77	77	77	77	77	77
Heavy Vehicles, %	31	31	31	31	31	31
Mvmt Flow	66	21	5	79	19	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	87	0	166	77
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	89	-
Critical Hdwy	-	-	4.41	-	6.71	6.51
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	-	-	2.479	-	3.779	3.579
Pot Cap-1 Maneuver	-	-	1345	-	762	909
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1345	-	759	909
Mov Cap-2 Maneuver	-	-	-	-	759	-
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	863	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	809	-	-	1345	-
HCM Lane V/C Ratio	0.039	-	-	0.004	-
HCM Control Delay (s)	9.6	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

APPENDIX **F**

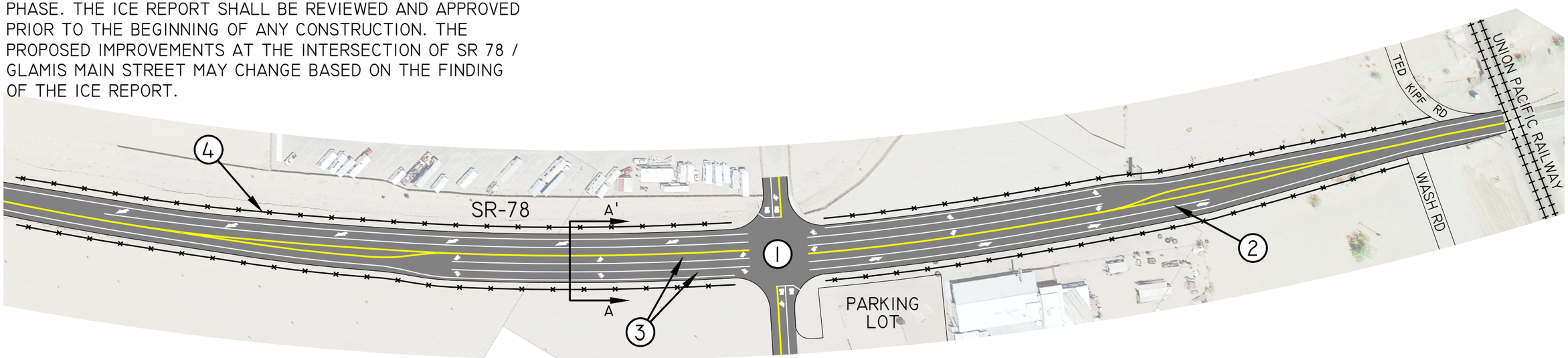
CONCEPTUAL SR 78 / GLAMIS MAINSTREET DESIGN

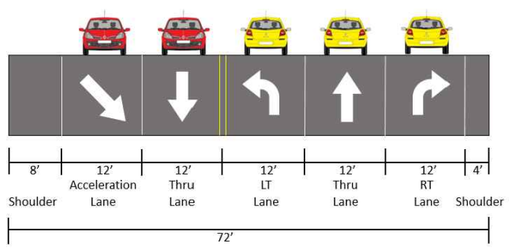
GENERAL NOTES:

- A TRAFFIC STUDY IS NEEDED TO DETERMINE SEVERAL DESIGN ELEMENTS
- EXTENSIVE COORDINATION WITH CALTRANS AND THE COUNTY IS NEEDED TO DETERMINE THE FINAL DESIGN ELEMENTS
- ANY DEVIATIONS TO DESIGN STANDARDS REQUIRE PROCESSING AND APPROVAL BY CALTRANS HEADQUATERS
- TRAFFIC MANAGEMENT PLAN IS NEEDED DURING LARGE SPECIAL EVENTS (I.E. CAMP RZR)
- ALL DRIVEWAYS CONNECTED TO SR 78 SHALL BE RECONSTRUCTED TO CURRENT CALTRANS STANDARDS.
- A FORMAL INTERSECTION CONTROL EVALUATION (ICE) REPORT SHOULD BE CONDUCTED AT A SUBSEQUENT ENGINEERING PHASE. THE ICE REPORT SHALL BE REVIEWED AND APPROVED PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE PROPOSED IMPROVEMENTS AT THE INTERSECTION OF SR 78 / GLAMIS MAIN STREET MAY CHANGE BASED ON THE FINDING OF THE ICE REPORT.

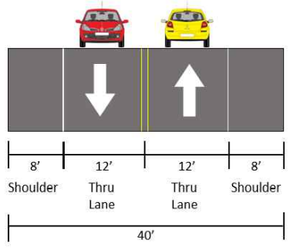
NOTES:

1. PROVIDE A TRAFFIC SIGNAL IF WARRANTED. IF A TRAFFIC SIGNAL IS WARRANTED, ACCELERATION LANES MAY NOT BE NEEDED.
2. 600 FEET OF ACCELERATION LANE LENGTH IS DEPICTED. TO PROVIDE THE RECOMMENDED 960 FEET OF ACCELERATION LANE LENGTH, COORDINATION IS NEEDED WITH THE UNION PACIFIC.
3. 100 FEET OF LEFT AND RIGHT TURN LANE STORAGE IS ASSUMED. THE ASSUMED STORAGE LENGTH PLUS 485 FEET OF DECELERATION LENGTH IS DEPICTED.
4. PHYSICAL BARRIER ALONG PROJECT FRONTAGE.





PROPOSED A'-A



EXISTING A'-A

NORTH

1" = 150'

CONCEPTUAL ONLY

LINSCOTT LAW & GREENSPAN engineers

REV. 2/4/2022
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Figure 1

Concept Plan

GLAMIS SP

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