

APPENDIX C

DRAFT TRAFFIC IMPACT ANALYSIS

Drew Solar Farm
County of Imperial (SR-98 at Drew Road)
August 9, 2018

Draft Traffic Impact Analysis

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1.0 Introduction

The purpose of this study is to determine and analyze potential traffic impacts for the proposed Drew Solar Project. The project is a solar photovoltaic energy-generating and energy storage facility of approximately 100 megawatts of electricity on approximately 855 gross acres and 762.8 net acres of lands that have been used for agriculture. The project is located approximately 6.5 miles southwest of the city of El Centro and approximately 7.5 miles west of Calexico, California. The location of the project is shown in **Figure 1**. A site plan is included in **Figure 2**.

This report describes the existing roadway network in the vicinity of the project site. It includes a review of the existing and proposed traffic activities for weekday peak AM and PM periods and daily traffic conditions. The format of this study includes the following chapters:

- 1.0 Introduction
- 2.0 Study Methodology
- 3.0 Existing Conditions
- 4.0 Project Description
- 5.0 Cumulative Projects
- 6.0 Existing Year 2017 + Project Conditions
- 7.0 Existing Year 2017 + Project Construction + Cumulative Conditions
- 8.0 Near-Term 2019 Conditions
- 9.0 Near-Term Year 2019 + Project Conditions
- 10.0 Near-Term Year 2019 + Project + Cumulative Conditions
- 11.0 Long-Term Year 2027 Conditions
- 12.0 Long-Term Year 2027 + Project Conditions
- 13.0 Long-Term Year 2027 Cumulative Projects
- 14.0 Long-Term Year 2027 + Project + Cumulative Conditions
- 15.0 Horizon Year 2060 Conditions
- 16.0 Conclusions and Recommendations
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Figure 1: Project Location

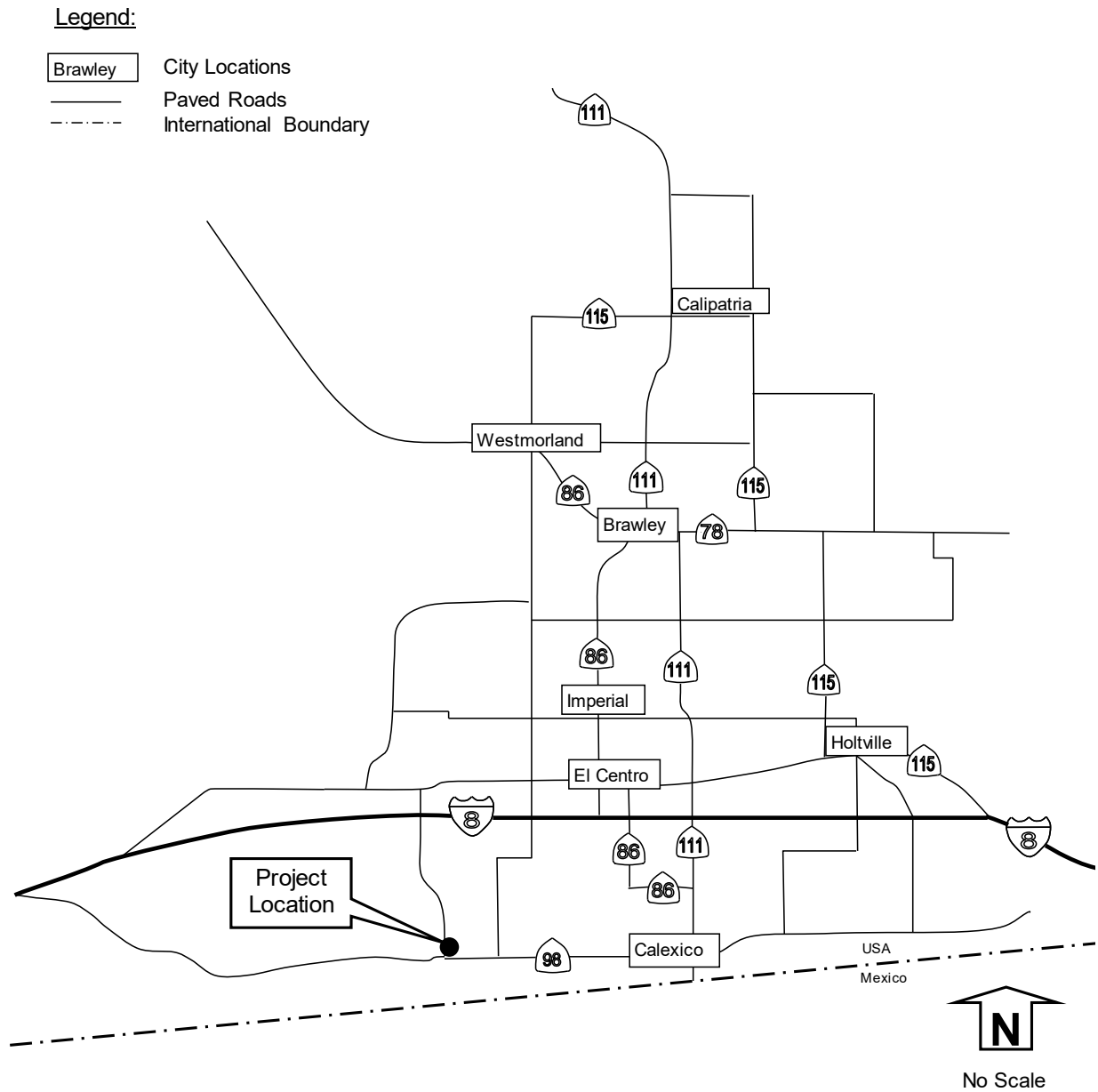
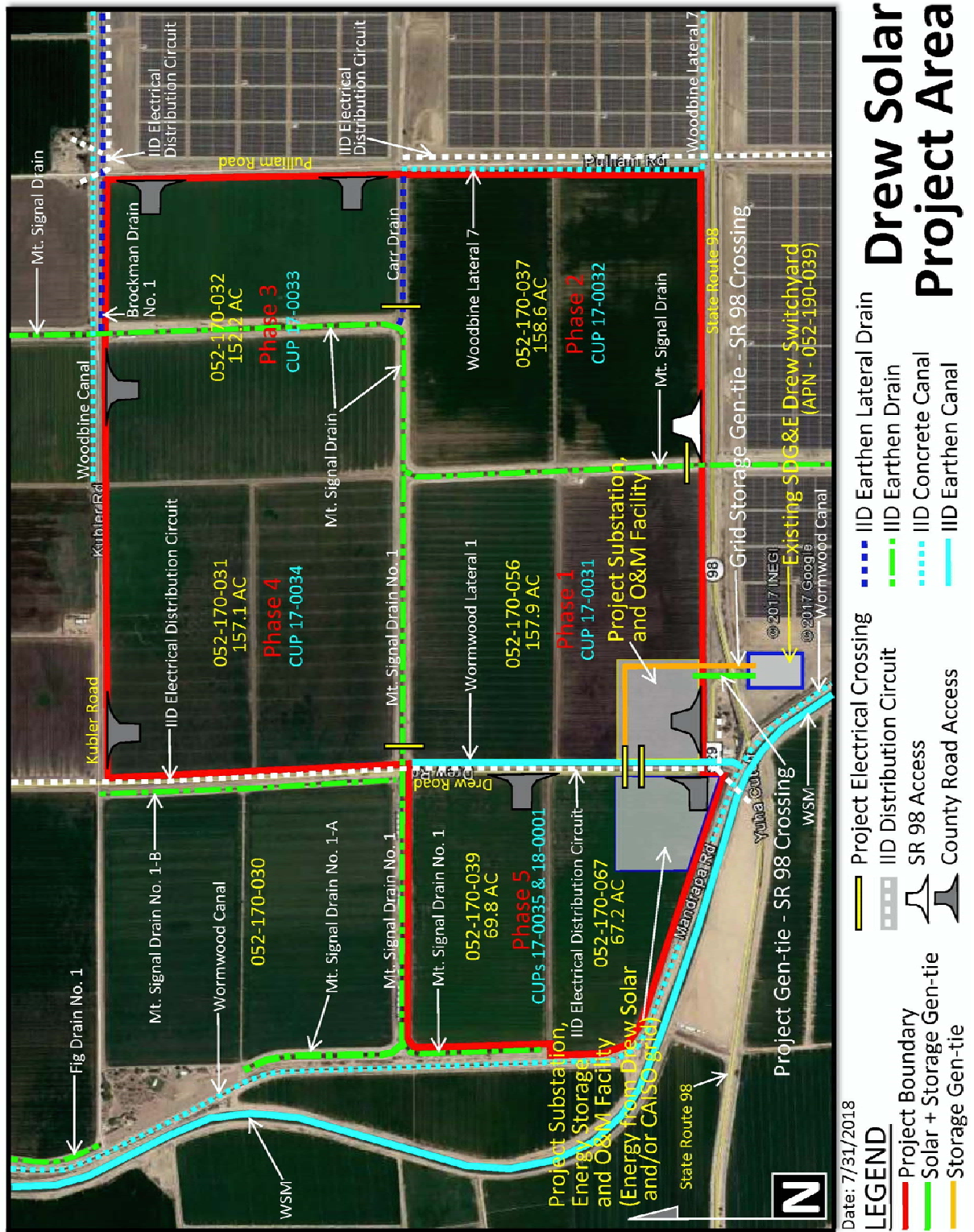


Figure 2: Site Plan



2.0 Traffic Analysis Methodology and Significance Criteria

The parameters by which this traffic study was prepared included the determination of what intersections and roadways are to be analyzed, the scenarios to be analyzed and the methods required for analysis. The criteria for each of these parameters are included herein.

2.1 Study Area Criteria

The study area is determined based on the County of Imperial Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007, revised June 29, 2007 and approved by the Board of Supervisors of the County of Imperial on August 7, 2007 (“Traffic Study and Report Policy”). “Any project that has the potential to degrade an existing road section, an existing signalized intersection, or an existing unsignalized intersection to below the existing level of service or to cause it to be lower than a level of service (LOS) “C” during any peak hour, using the HCM Methods of analysis on any individual, existing traffic movement.” Traffic Study and Report Policy, 4-5. The project study area was determined based on similar solar projects in the same general area. The following intersections and project driveways on SR-98 were analyzed as part of this study:

- 1) Forrester Road/I-8 WB Ramp (un-signalized)
- 2) Forrester Road/I-8 EB Ramp (un-signalized)
- 3) Forrester Road/McCabe Road (un-signalized)
- 4) Kubler Road/Pulliam Road (un-signalized)
- 5) Kubler Road/Brockman Road (un-signalized)
- 6) SR-98/Drew Road (un-signalized)
- 7) SR-98/Pulliam Road (un-signalized)
- 8) SR-98/Project Driveway (currently does not exist)

Along with the following roadway and State Route segments:

- 1) Brockman Road from McCabe Road to Kubler Road
- 2) Forrester Road from I-8 to McCabe Road
- 3) Kubler Road from Pulliam Road to Brockman Road
- 4) McCabe Road from Brockman Road to Forrester Road
- 5) Pulliam Road from Kubler Road to SR-98
- 6) SR-98 between Drew Road and Pulliam Road
- 7) SR-98 between Pulliam Road and Brockman Road

And, the following Freeway (also referred to as Interstate) segments:

- 1) I-8 between Dunaway Road and Drew Road
- 2) I-8 between Forrester Road and Imperial Avenue

2.2 Scenario Criteria

The number of scenarios to be analyzed is based on the methodology outlined in the County's Traffic Study and Report Policy. Excerpts from the Traffic Study and Report Policy showing the scenario criteria are included in **Appendix A**. Based on the aforementioned methodology source and to account for the possibility that the project may be phased, the following scenarios were analyzed:

- 1) Existing 2017 Conditions
- 2) Existing 2017 + Project Conditions
- 3) Existing 2017 + Project + Cumulative Conditions
- 4) Near-Term Year 2019 Conditions
- 5) Near-Term Year 2019 + Project Conditions
- 6) Near-Term Year 2019 + Project + Cumulative Conditions
- 7) Long-Term Year 2027 Conditions
- 8) Long-Term Year 2027 + Project Conditions
- 9) Long-Term Year 2027 + Project + Cumulative Conditions
- 10) Horizon Year 2060 Conditions

Please note that there is not a separate analysis of phased construction of the project because such phasing is captured within the bookend analysis provided by near- and long-term project forecasts.

2.3 Traffic Analysis Criteria

The traffic analyses herein utilize the *2010 Highway Capacity Manual* (HCM) published by the Transportation Research Board National Research Council. Specifically, the operations analysis is based on Level of Service (LOS) evaluation criteria. The operating conditions of the study intersections are measured using the HCM LOS designations ranging from A through F where LOS A represents the best operating condition and LOS F denotes the worst operating condition. The individual LOS criteria for each roadway component are described below.

2.3.1 Intersections

The study intersections were analyzed based on the **operational analysis** outlined in the HCM. This process defines LOS in terms of **average control delay** per vehicle, which is measured in seconds. LOS at the intersections were calculated using the computer software program Synchro 10 (Trafficware Corporation). The HCM LOS for the range of delay by seconds for un-signalized and signalized intersections is described in **Table 1**.

TABLE 1: INTERSECTION LEVEL OF SERVICE DEFINITIONS (HCM 2010)

Level of Service	Un-Signalized (TWSC and AWSC) Control Delay (seconds/vehicle)	Signalized Control Delay (seconds/vehicle)
A	0-10	≤ 10
B	> 10-15	> 10-20
C	> 15-25	> 20-35
D	> 25-35	> 35-55
E	> 35-50	> 55-80
F	> 50	> 80

TWSC: Two Way Stop Control. AWSC: All Way Stop Control. Source: Highway Capacity Manual 2010 (exhibit 19-1 for two way stop control, exhibit 20-2 for all way stop control, and exhibit 18-4 for signalized intersections).

According to the California Department of Transportation's (Caltrans) *Guide for the Preparation of Traffic Impact Studies*, December 2002 ("Caltrans Guide"), the accepted methodology for un-signalized intersections is that contained in the most current edition of the HCM (excerpts included in **Appendix B**). Therefore, all of the study interchanges with un-signalized intersections were analyzed using the most currently used edition of the HCM.

2.3.2 Roadway and State Route Segments

The roadway and State Route segments were analyzed based on the functional classification of the roadway using the Imperial County Standard Street Classification capacity lookup table (copy included in **Appendix C**). The capacity for State Route 98 in the project vicinity is based on a "Local Collector" as noted in the Imperial County *Circulation and Scenic Highways Element* dated January 29, 2008 ("Circulation Element"). The roadway segment capacity and LOS standards used to analyze roadway segments are summarized in **Table 2**.

TABLE 2: ROADWAY SEGMENT DAILY CAPACITY AND LOS (IMPERIAL COUNTY)

Circulation Element Road Classification	CROSS SECTION	LOS A	LOS B	LOS C	LOS D	LOS E
Expressway	154/210	<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
Local County (Residential)	40/60	*	*	<1,500	*	*
Local County (Residential Cul-de-Sac or Loop Street)	40/60	*	*	<200	*	*
Major Industrial Collector – (Industrial)	76/96	<5,000	<10,000	<14,000	<17,000	<20,000
Industrial Local	44/64	<2,500	<5,000	<7,000	<8,500	<10,000

Source: Imperial County Department of Planning & Development Services *Circulation and Scenic Highways Element* January 29, 2008. Notes: *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.

2.3.3 Freeway Segments

The freeway segments, covering Interstate 8, were analyzed based on a multilane highway LOS criteria using a Volume to Capacity (V/C) ratio as outlined in the HCM. The V/C ratio is the ratio of traffic to the roadway capacity that provides a measure of how much roadway capacity is being used. The methodology accepted by Caltrans for the analysis of freeway sections is to use the most current edition of the HCM as noted on page 5 of the Caltrans Guide. The freeway LOS operations are based on the Caltrans Guide V/C ratios summarized below in **Table 3**. Relevant excerpts from the Caltrans Guide are included in **Appendix D**.

TABLE 3: FREEWAY LEVEL OF SERVICE

Measure of Effectiveness	LOS A	LOS B	LOS C	LOS D	LOS E
Max Volume/Capacity Ratio	0.30	0.50	0.71	0.89	1.00

Source: Caltrans' *Guide for the Preparation of Traffic Impact Studies*, December 2002.

2.4 Significance Criteria

The significance criteria for traffic impacts are based on the Imperial County Planning & Development Services Department LOS standard as outlined in the "Circulation Element". "The County's goal for an acceptable traffic service standard on an Average Daily Traffic (ADT) basis and during AM and PM peak periods for all County-Maintained Roads shall be LOS C for all street segment links and intersections." Circulation Element, 55. Excerpts from the *Circulation and Scenic Highways Element* are included in **Appendix E**. The determination of direct or cumulative traffic impacts is defined by the significance criteria outlined in **Table 4**, which was obtained from several EIRs for projects located in Imperial County. Copies of traffic significance criteria from these project EIRs are included in **Appendix F**.

TABLE 4: SIGNIFICANCE CRITERIA

Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
Intersections			
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	NA	Direct
LOS D	LOS D and adds 2.0 seconds or more of delay	LOS D or worse	Cumulative
LOS D	LOS E or F	NA	Direct
LOS E	LOS F	NA	Direct
LOS F	LOS F and delay increases by ≥ 10.0 seconds	LOS F	Direct
Any LOS	Project does not degrade LOS and adds < 2.0 seconds of delay	Any LOS	None
Any LOS	Project does not degrade LOS but adds 2.0 to 9.9 seconds of delay	LOS E or worse	Cumulative
Segments			
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS C or better and $v/c > 0.02$	LOS D or worse	Cumulative
LOS C or better	LOS D or worse	NA	Direct (1)
LOS D	LOS D and $v/c > 0.02$	LOS D or worse	Cumulative
LOS D	LOS E or F	NA	Direct
LOS E	LOS F	NA	Direct
LOS F	LOS F and v/c increases by > 0.09	LOS F	Direct
Any LOS	LOS E or worse & $v/c 0.02$ to 0.09	LOS E or worse	Cumulative
Any LOS	LOS E or worse and $v/c < 0.02$	Any LOS	None

Notes: LOS: Level of Service. (1) Exception: post-project segment operation is LOS D and intersections along segment are LOS D or better resulting in no significant impact. NA: Not Applicable.

2.5 Study Limitations

The findings and recommendations of this report were prepared in accordance with generally accepted professional traffic and transportation engineering principles and practice, and California Environmental Quality Act (CEQA) based on substantial evidence. No other warranty, express or implied, is made.

3.0 Existing Conditions

This section describes the study area street system, peak hour intersection volumes, daily roadway volumes, and existing LOS.

3.1 Existing Street System

The existing roadway system and classifications are described below. The classifications are based on the Imperial County's Circulation Element and valid as of the date of the Project's Notice of Preparation of the EIR. Excerpts are included in **Appendix G**.

Brockman Road between McCabe Road and Kubler Road has a classification of Major Collector in the Circulation Element. This roadway is currently constructed as a 2 lane undivided roadway.

Forrester Road between I-8 and McCabe Road has a classification of Prime Arterial in the Circulation Element. This roadway is currently constructed as a 2 lane undivided roadway.

Interstate 8 (I-8) between Drew Road and Imperial Avenue is constructed as a 4 lane divided interstate highway with 2 lanes in each direction.

Kubler Road between Pulliam Road and Brockman Road has a classification of Minor Collector in the Circulation Element. This roadway is currently constructed as a 2 lane undivided roadway.

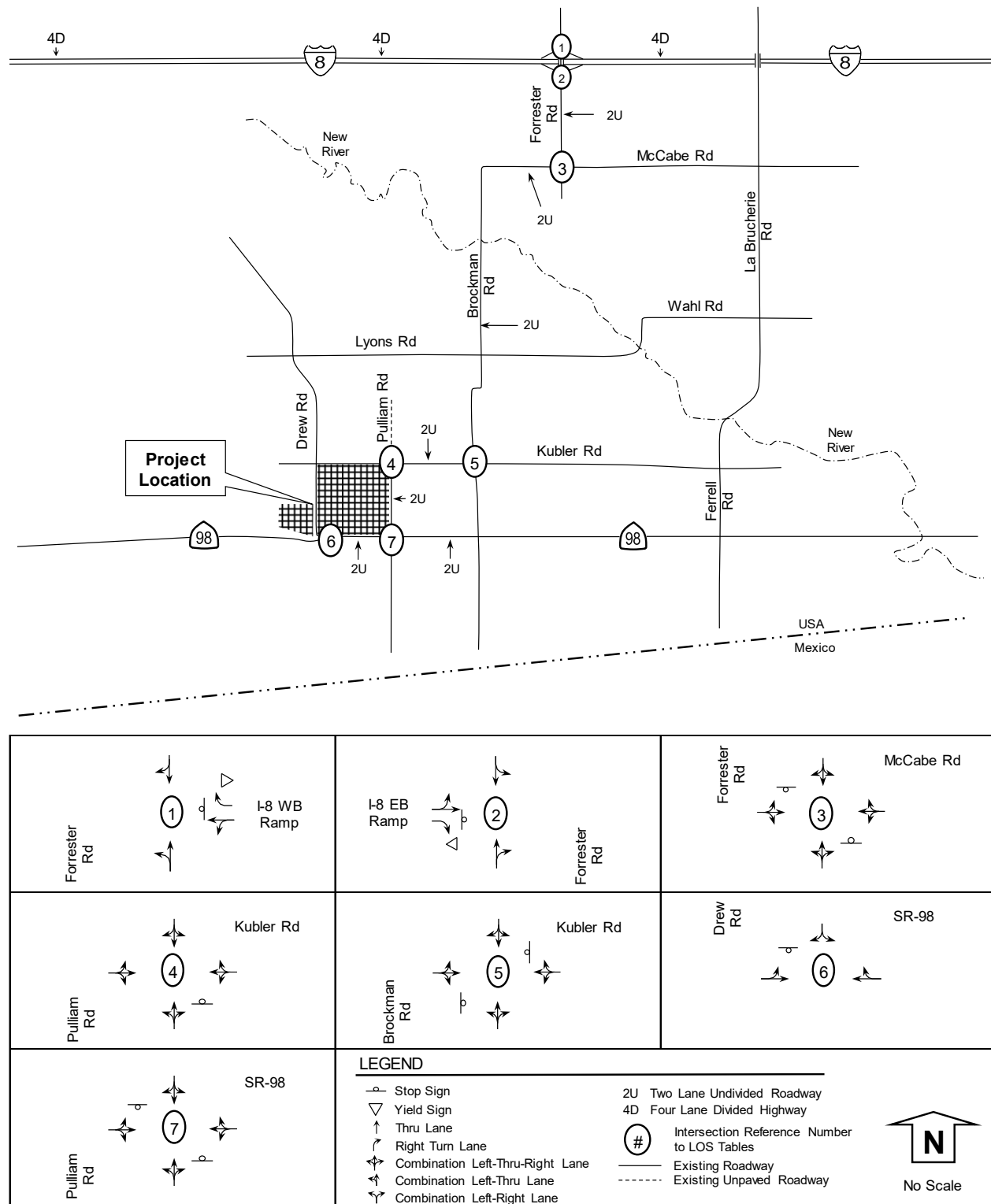
McCabe Road between Brockman Road and Forrester Road has a classification of Major Collector in the Circulation Element. This roadway is currently constructed as a 2 lane undivided roadway.

Pulliam Road between Kubler Road and SR-98 has a classification of Minor Collector in the Circulation Element. This roadway is currently constructed as a 2 lane undivided roadway.

State Route (SR-98) between Drew Road and Clark Road has a classification of State Highway in the Circulation Element. This roadway is currently constructed as a 2 lane undivided roadway.

The existing roadway conditions are shown in **Figure 3**.

Figure 3: Existing Roadway Conditions



3.2 Existing Traffic Volumes and LOS Analyses

Existing peak hour intersection volumes (with count dates) were collected from 6:00 to 8:00 AM and from 4:00 to 6:00 PM for this study:

- 1) Forrester Road/I-8 WB Ramp (Tuesday 11/4/2017)
- 2) Forrester Road/I-8 EB Ramp (Tuesday 11/4/2017)
- 3) Forrester Road/McCabe Road (Tuesday 11/4/2017)
- 4) Kubler Road/Pulliam Road (Tuesday 11/4/2017)
- 5) Kubler Road/Brockman Road (Tuesday 11/4/2017)
- 6) SR-98/Drew Road (Tuesday 11/4/2017)
- 7) SR-98/Pulliam Road (Tuesday 11/4/2017)
- 8) SR-98/Project Driveway (currently does not exist)

Twenty-four hours of data were collected for the following roadway segments:

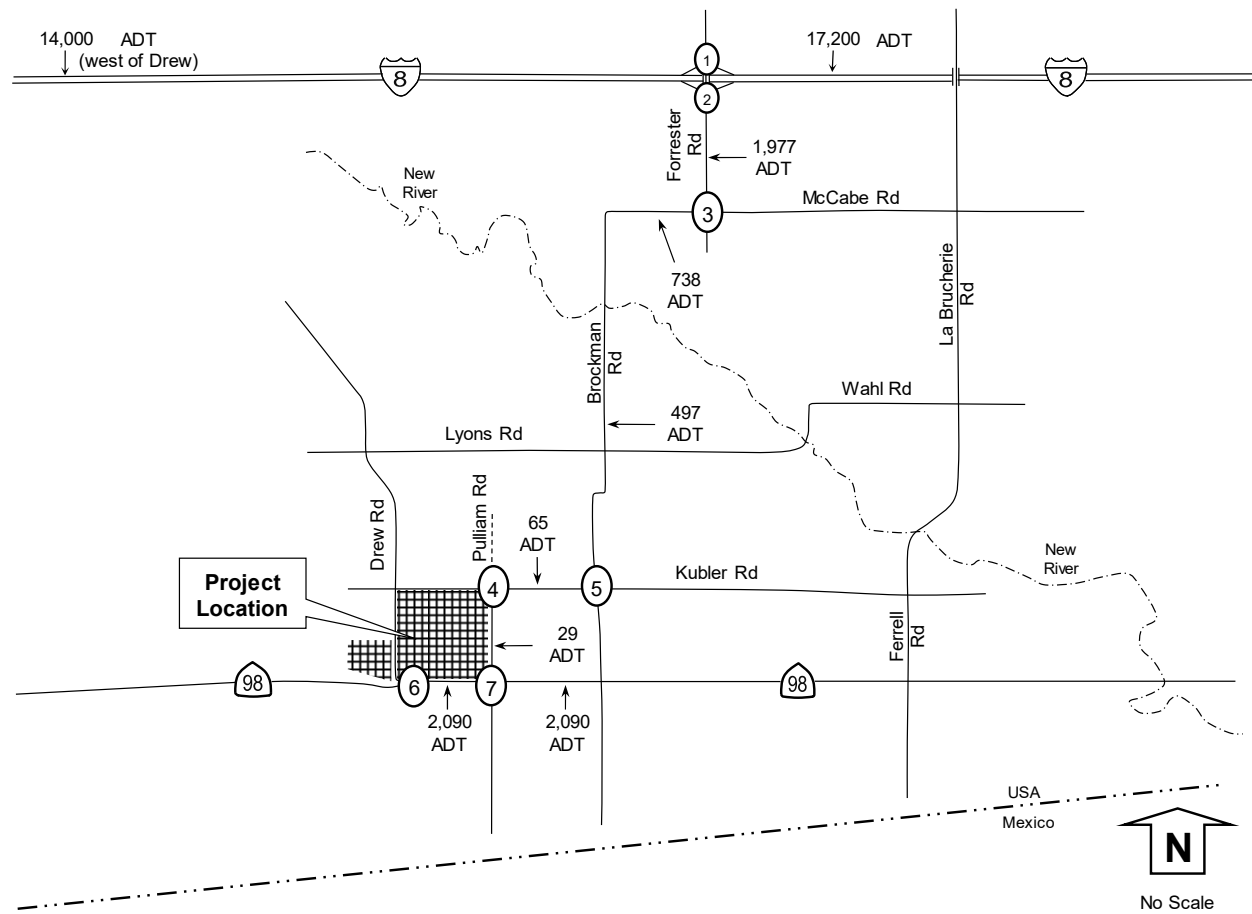
- 1) Brockman Road from McCabe Road to Kubler Road (Tuesday 11/4/2017)
- 2) Forrester Road from I-8 to McCabe Road (Tuesday 11/4/2017)
- 3) Kubler Road from Pulliam Road to Brockman Road (Tuesday 11/4/2017)
- 4) McCabe Road from Brockman Road to Forrester Road (Tuesday 11/4/2017)
- 5) Pulliam Road from Kubler Road to SR-98 (Tuesday 11/4/2017)

In addition, the data was obtained from Caltrans for the Freeway (Interstate) and State Route segments below. Please note that the latest available Caltrans data from 2016 was factored up to a year 2017 volume using a 1.8% annual growth factor [details included in Section 8.0 of this TIA].

- 1) I-8 between Dunaway Road and Drew Road
- 2) I-8 between Forrester Road and Imperial Avenue
- 3) SR-98 between Drew Road and Pulliam Road
- 4) SR-98 between Pulliam Road and Brockman Road

Existing AM, PM, and daily volumes are shown on **Figure 4**. Count data are included in **Appendix H**. The intersection, segment, and freeway LOS are shown in **Tables 5, 6, and 7** respectively. Intersections LOS calculations are included in **Appendix I**.

Figure 4: Existing Volumes



67 (54) 126 (193) I-8 WB Ramp 83 (71) 0 (0) 40 (16) 1 12 (8) 98 (125) Forrester Rd				86 (42) 75 (168) I-8 EB Ramp 57 (84) 1 (0) 9 (4) 2 56 (47) 20 (21) Forrester Rd				12 (4) 7 (1) 77 (51) McCabe Rd 33 (37) 15 (7) 1 (0) 3 4 (5) 3 (5) 1 (1) Forrester Rd			
0 (0) 1 (3) 1 (0) 0 (0) 1 (1) 0 (0) 0 (0) 1 (1) 0 (1) Kubler Rd 4 5 4 (10) 43 (27) 6 Drew Rd				3 (0) 33 (55) 0 (0) 1 (1) 0 (0) 0 (0) 1 (1) 0 (0) Brockman Rd 3 (3) 1 (1) 0 (0) 5 11 (7) 0 (0) 1 (1) 0 (0) 7 37 (36) 1 (0) Pulliam Rd				14 (23) 13 (29) 2 (1) 12 (4) 7 (1) 77 (51) 33 (37) 15 (7) 1 (0) McCabe Rd 4 (5) 3 (5) 1 (1) 3 4 (5) 3 (5) 1 (1) 1 (1) Forrester Rd			
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LEGEND

XX AM peak hour volumes at intersections

(YY) PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume

Z,ZZZ ADT volumes shown along segments

Intersection Reference Number to LOS Tables

#

Existing Roadways

Existing Unpaved Roadway

TABLE 5: EXISTING INTERSECTION LOS

Intersection & (Control) ¹	Movement	Peak Hour	Year 2017	
			Delay ²	LOS ³
1) Forrester Rd at I-8 WB Ramp (U)	Minor Leg	AM PM	9.7 9.6	A A
2) Forrester Rd at I-8 EB Ramp (U)	Minor Leg	AM PM	11.1 13.6	B B
3) Forrester Rd at McCabe Rd (U)	Minor Leg	AM PM	9.5 9.5	A A
4) Pulliam Rd at Kubler Rd (U)	Minor Leg	AM PM	8.6 8.6	A A
5) Brockman Rd at Kubler Rd (U)	Minor Leg	AM PM	8.9 9.0	A A
6) Drew Rd at SR-98 (U)	Minor Leg	AM PM	8.7 8.9	A A
7) Pulliam Rd at SR-98 (U)	Minor Leg	AM PM	9.0 8.6	A A

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.

3) LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

TABLE 6: EXISTING ROADWAY AND STATE ROUTE LOS

Segment	Classification (as built)	Year 2017				
		Daily Volume	# of lanes	LOS C Capacity	V/C	LOS
<u>Brockman Road</u>						
McCabe Rd to Kubler Rd	Major (2U)	497	2	7,100	0.07	A
<u>Forrester Road</u>						
I-8 to McCabe Rd	Prime (2U)	1,977	2	7,100	0.28	B
<u>Kubler Road</u>						
Brockman Rd to Ferrell Rd	Minor (2U)	65	2	7,100	0.01	A
<u>McCabe Road</u>						
Brockman Rd to Forrester Rd	Major (2U)	738	2	7,100	0.10	A
<u>Pulliam Road</u>						
Kubler Rd to SR-98	Minor (2U)	29	2	7,100	0.00	A
<u>SR-98</u>						
Drew Rd to Pulliam Rd	State Highway (2U)	2,090	2	7,100	0.29	B
Pulliam Rd to Brockman Rd	State Highway (2U)	2,090	2	7,100	0.29	B

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element. 2U = 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio.

TABLE 7: EXISTING FREEWAY LOS

Freeway Segment	I-8 Dunaway Rd to Drew Rd				I-8 Forrester Rd to Imperial Ave			
	Forecasted Year 2017 ADT				Forecasted Year 2017 ADT			
Peak Hour	14,000				17,200			
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor (2)	0.1346	0.1346	0.1631	0.1631	0.1346	0.1346	0.1631	0.1631
D Factor (3)	0.4770	0.5230	0.4958	0.5042	0.4770	0.5230	0.4958	0.5042
Truck Factor (4)	0.8712	0.8712	0.8712	0.8712	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	1,032	1,131	1,299	1,321	1,318	1,446	1,661	1,689
Volume to Capacity	0.220	0.241	0.276	0.281	0.281	0.308	0.353	0.359
LOS	A	A	A	A	A	B	B	B

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2015 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2015 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2016 report).

Under existing conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS B or better.

4.0 Project Description

The project is a solar photovoltaic energy-generating and energy storage facility of approximately 100 megawatts of electricity on approximately 855 gross acres and 762.8 net acres of lands that have been used for agriculture. The project site is located approximately 6.5 miles southwest of the city of El Centro and approximately 7.5 miles west of Calexico, California.

4.1 Project Trip Generation and Phases/Phasing

The project trip generation consists of a construction phase and operations phase. The construction phase will have the highest number of trips followed by an operations phase with significantly fewer trips. This section describes the construction and operations trip generation. Traffic details for the project are included in **Appendix J**.

The project may be constructed at one time taking approximately 18 months or it may be completed over a ten-year period. Under the development agreement, the Conditional Use Permit (CUP) will be valid for 40 years with up to 10 years to commence construction. If construction is to commence immediately after approvals, the project could have the highest concentration of workers in year 2019. If delayed due to market forces, the project could have the highest concentration of construction workers in year 2027. The project may also be phased (e.g., 20 MW constructed at a time or 1/5 of the overall project) that would result in a lower concentration of construction workers and less trip generation. However, to be conservative, the entire project (100 MW) was analyzed under year 2019 and year 2027 conditions assuming an 18-month construction period.

4.1.1 Project Construction Trip Generation

Construction of the project includes site preparation, foundation construction, delivery of equipment and supplies, erection of major equipment and structures, installation of control systems, and start-up/testing. These construction activities are expected to require approximately 18 months.

According to the applicant, the construction workforce may reach the highest concentration in late 2019 (for the near-term scenario) with an average of 250 workers per day. Based on the applicant's experience, about 75% of the workers follow a 4 day at 10 hours per day (4-10 shift) schedule, about 25% follow a 5 day at 8 hours per day (5-8 shift) schedule, and roughly 25% of the workers carpool. The workers also have different start and end times between the 4-10 and 5-8 shift schedules. The 4-10 shift workers typically arrive between 6am and 7am (work starts at 7am) and depart sometime between 5pm and 6pm while the 8-5 shift workers typically arrive between 7 and 8am and depart between 4pm and 5pm.

Deliveries of equipment and supplies are anticipated to average about 10 daily truck trips per day. The HCM adjustment for heavy vehicles, such as trucks is through the application of a Passenger Car Equivalent (PCE) factor. Applying a PCE factor of 3 to the 10 daily truck trips, the PCE is 60

ADT with 6 AM peak hour trips (3 inbound and 3 outbound) and 6 PM peak hour trips (3 inbound and 3 outbound).

This analysis is based on the higher concentration (75%) of 4-10 shift workers that arrive between 6am and 7am and depart sometime between 5pm and 6pm. The combined worker and construction truck traffic is calculated at 436 ADT with 147 AM peak hour trips (144 inbound and 3 outbound) and 147 PM peak hour trips (3 inbound and 144 outbound) as shown in **Table 8**.

TABLE 8: PROJECT CONSTRUCTION TRIP GENERATION

Proposed Construction Related Traffic	ADT	6-7 AM		7-8 AM		4-5 PM		5-6 PM	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT
Construction Workers on 4-10 Shift (75% of 250) ¹	282	141	0	0	0	0	0	0	141
Construction Workers on 5-8 Shift (25% of 250) ²	94	0	0	47	0	0	47	0	0
Equipment and Construction Trucks (with PCE) ³	60	3	3	3	3	3	3	3	3
Total Traffic During Peak Construction Period	436	144	3	50	3	3	50	3	144
Daily and Higher Peak Hour Used For Analysis	436	144	3					3	144

Notes: 1) Applicant estimates the 4 days at 10 hrs/day (4-10s) shift to include about 188 workers (75% of the total 250 peak work force) with about 25% carpooling (47) and riding with the 75% (141), thus the inbound is 141 trips and the ADT is 282. 2) Applicant estimates the 5 days at 8 hrs/day (5-8) shift to include about 62 workers (25% of the total 250 peak work force) with about 25% carpooling (15) and riding with the 75% (47), thus the inbound is 47 and the ADT is 94. 3) Approx. 10 daily trucks with a Passenger Car Equivalent (PCE) factor of 3 applied to each truck equals 60 ADT (10 trucks x 2 x 3 PCE = 60 ADT) that are anticipated to have a frequency of about 1 in and 1 out per hour for a peak period volume of 6 (with PCE).

4.1.2 Project Operations and Maintenance Trip Generation

According to the applicant, the operations phase is expected to generate approximately 4 to 10 trips per day from maintenance and security personnel. Based on this information, the operations and maintenance personnel are estimated to generate up to 20 ADT with approximately 2 AM and 2 PM peak hour trips. Therefore, the higher and more conservative construction trip generation is used to determine potential project impacts.

4.2 Construction Trip Distribution and Assignment

The Applicant estimates that approximately 80% of the labor pool for the construction workforce is anticipated to come from a combination of existing residents and workers that will temporarily reside within Imperial County (“Local Workforce”). The Local Workforce is anticipated to travel from Calipatria, Westmorland, Brawley, Imperial, El Centro, Holtville, and Calexico. The distribution of the construction workforce by cities/communities was based on the concentration of populations per the Census 2010 from the U.S. Census Bureau (<http://2010.census.gov/2010census>). The percentage of the Local Workforce by city/community and county is shown in **Table 9**.

TABLE 9: CONSTRUCTION WORKFORCE SOURCES BASED ON CENSUS 2010 POPULATIONS (80% LOCAL)

80% LOCAL WORKFORCE	2010 Census Population	Percentage of Total	Percentage of Construction Employees (80% from within Imperial County)
Calipatria	7,705	5%	4%
Westmorland	2,225	2%	1%
Brawley	24,953	18%	15%
Imperial	14,758	11%	9%
El Centro	42,598	31%	25%
Holtville	5,939	4%	3%
Calexico	38,572	28%	23%
Total	136,750	100%	80%

Source: Population data from U.S. Census Bureau (<http://2010.census.gov/2010census>).

The remaining construction workforce and deliveries will come from outside Imperial County (“Non-Local Workforce”) and is estimated to be from San Diego County (15%) and Riverside County (5%). Based on the aforementioned Census information, the regional construction distribution is shown in **Figure 5**. The local distribution accounted for the project driveways throughout the project site. The local area distribution is shown in **Figure 6**. The peak (year 2019) construction trip assignment based on the aforementioned distribution is shown in **Figure 7**.

Figure 5: Regional Construction Distribution

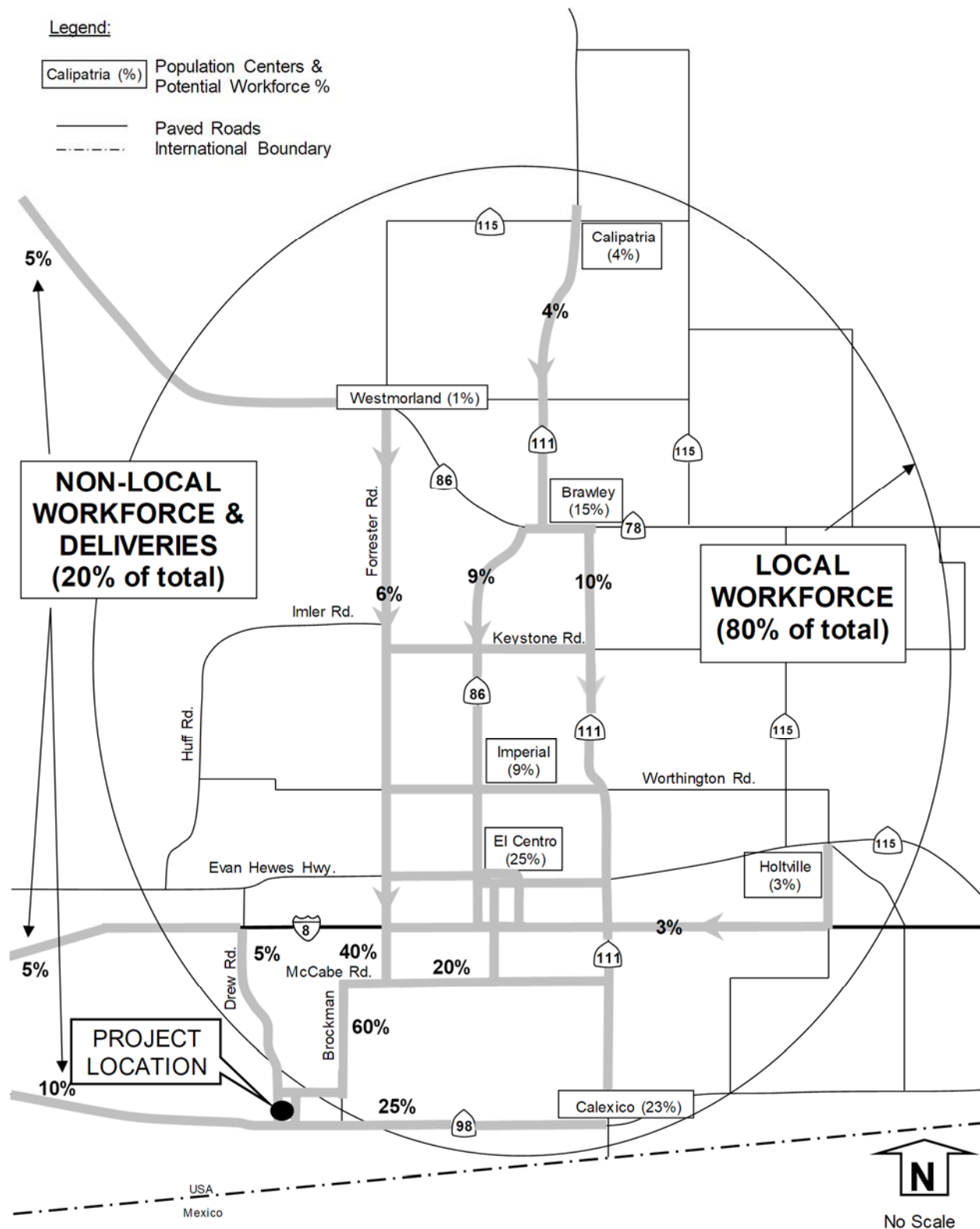
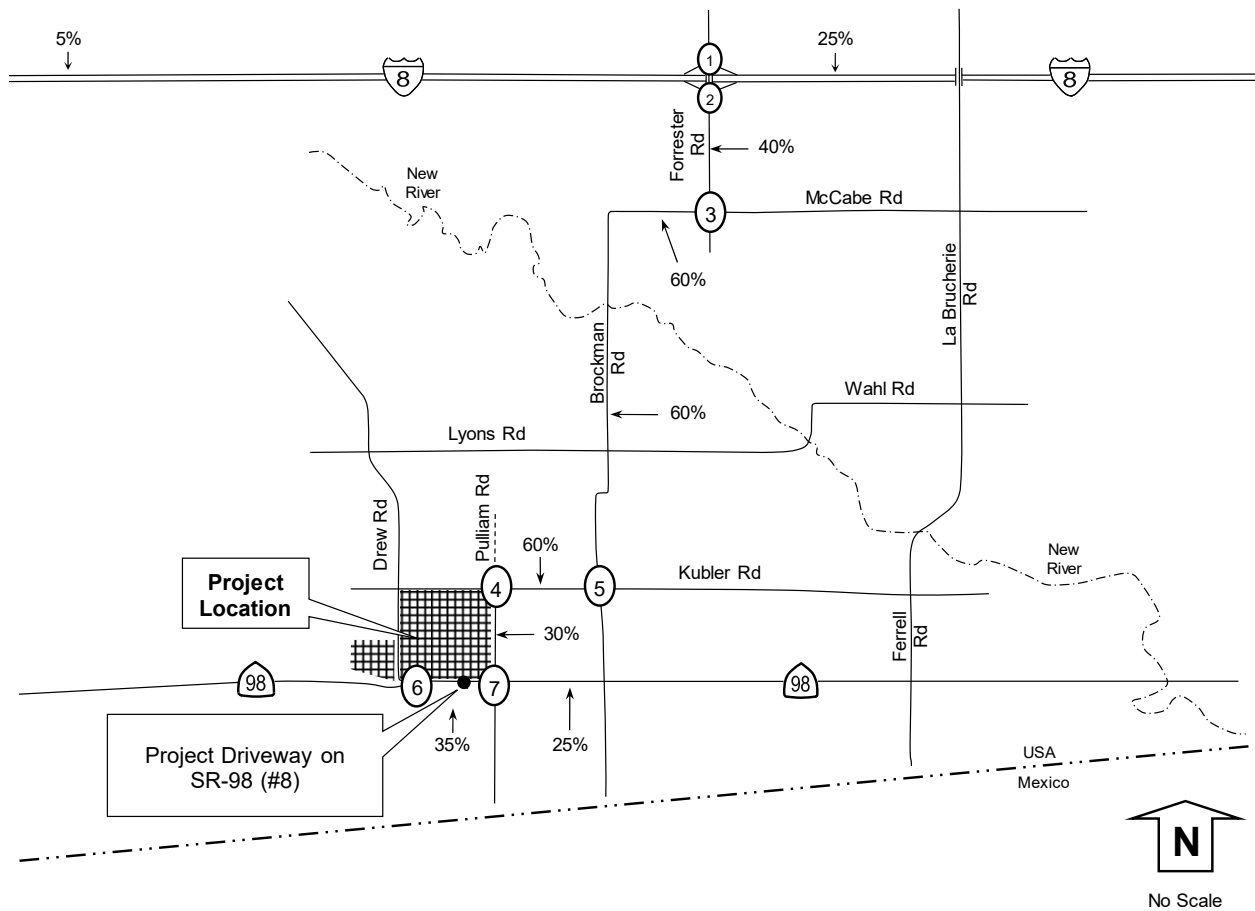


Figure 6: Local Project Construction Distribution



Forrester Rd 15% ↓ 15% ↑ 25% I-8 WB Ramp 1	I-8 EB Ramp 40% 15% ↑ 25% Forrester Rd 2	McCabe Rd 40% 20% 20% Forrester Rd 3
Pulliam Rd 30% 30% 30% Kubler Rd 4	Brockman Rd 60% 60% Kubler Rd 5	LEGEND % Project Distribution # Intersection Reference Number to LOS Tables — Existing Roadways - - - Existing Unpaved Roadway
Drew Rd in 5% out 5% out 20% SR-98 20% 5% in out 6	Intersection numbering sequence out of order to match location on map above Project Dwy in out 5% out 20% SR-98 15% 20% in 8	Pulliam Rd in 15% out 5% 15% 20% SR-98 5% 20% in 7

The map shows the project location in the Fort Worth area, centered around the intersection of SR-98 (#8) and SR-114. The project driveway is located on SR-98 (#8) between SR-114 and SR-112. The map includes the following details:

- Major Roads:** SR-98 (#8) (North-South), SR-114 (East-West), SR-112 (East-West), SR-110 (East-West), SR-118 (East-West), SR-116 (East-West), SR-114 (East-West), SR-112 (East-West), SR-110 (East-West), SR-118 (East-West), SR-116 (East-West).
- ADT Values:**
 - SR-98 (#8) Northbound: 109 ADT
 - SR-98 (#8) Southbound: 153 ADT
 - SR-114 Eastbound: 262 ADT
 - SR-114 Westbound: 174 ADT
 - SR-112 Eastbound: 262 ADT
 - SR-112 Westbound: 131 ADT
 - SR-110 Eastbound: 109 ADT
 - SR-110 Westbound: 109 ADT
 - SR-118 Eastbound: 109 ADT
 - SR-118 Westbound: 109 ADT
 - SR-116 Eastbound: 109 ADT
 - SR-116 Westbound: 109 ADT
- Project Location:** Indicated by a black dot on SR-98 (#8) between SR-114 and SR-112.
- Project Driveway on SR-98 (#8):** Indicated by a black line segment on SR-98 (#8) between SR-114 and SR-112.
- Other Features:**
 - New River (dashed line)
 - La Brucherie Rd (vertical road)
 - Wahl Rd (horizontal road)
 - Kubler Rd (horizontal road)
 - Lyons Rd (horizontal road)
 - Brockman Rd (vertical road)
 - Forrester Rd (vertical road)
 - McCabe Rd (horizontal road)
 - Drew Rd (vertical road)
 - Pulliam Rd (vertical road)
 - Ferrell Rd (vertical road)
 - USA/Mexico border (dashed line)
 - North arrow (N)
 - No Scale

I-8 WB Ramp Forrester Rd (1) (22)	I-8 EB Ramp Forrester Rd (2) (36)	McCabe Rd Forrester Rd (3) (29)
Kubler Rd Pulliam Rd (4) (43)	Kubler Rd Brockman Rd (5) (86)	LEGEND - XX AM peak hour volumes at intersections (YY) PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume - Z,ZZZ ADT volumes shown along segments # Intersection Reference Number to LOS Tables - Existing Roadways ----- Existing Unpaved Roadway
SR-98 Drew Rd (6) (29)	Intersection numbering sequence out of order to match location on map above SR-98 Project Dwy (8) (29)	SR-98 Pulliam Rd (7) (22)

5.0 Cumulative Projects (Past, Existing & Reasonably Foreseeable New Development)

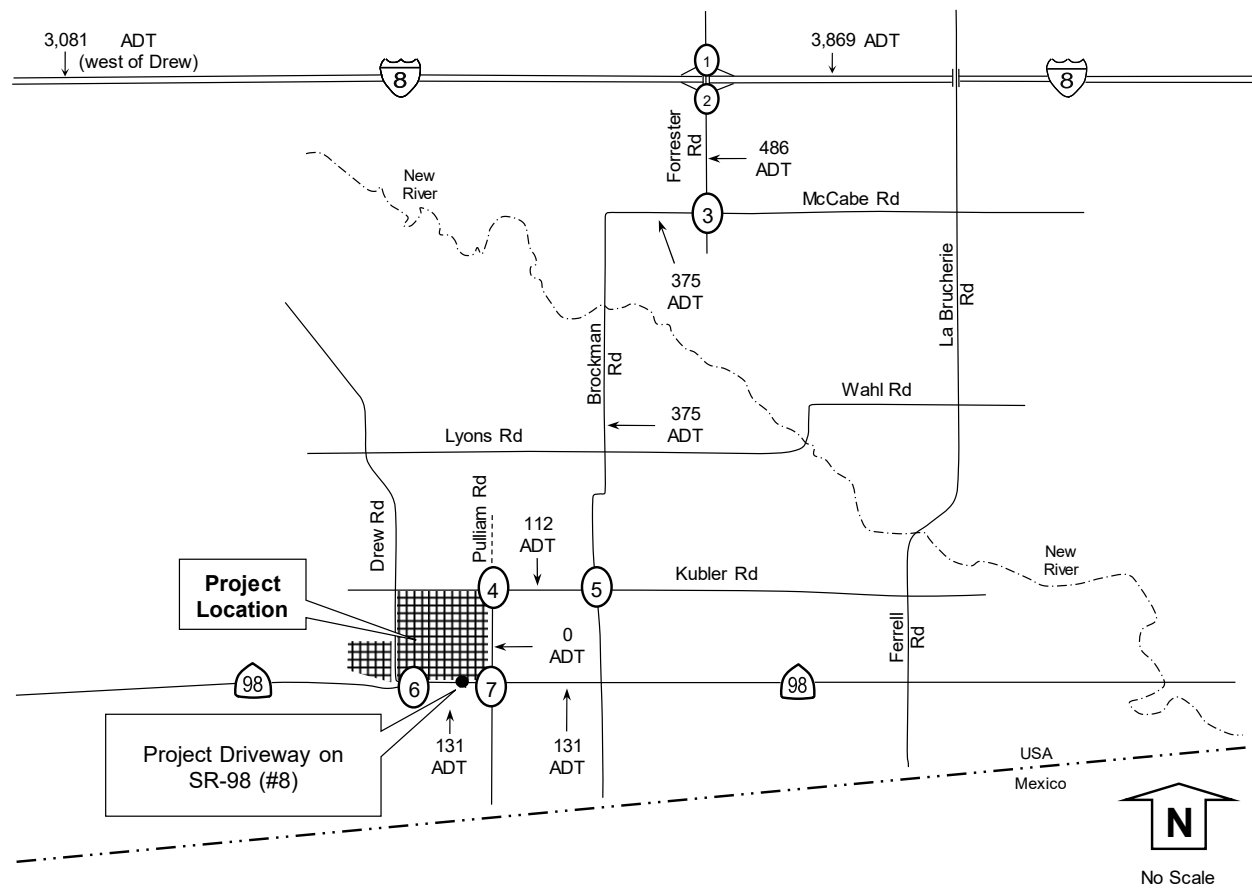
Information on cumulative projects was obtained from the County of Imperial staff in November 2017. A County of Imperial map showing planned solar farm projects is included in **Appendix K**. Please note that the Acorn solar project has been identified by County staff as being withdrawn at the time of this analysis. The cumulative list below describes the cumulative projects in the immediate area around the project site (i.e. projects that are generally located south of I-8 and west of Clark Road). Some of the cumulative projects have completed technical studies including traffic generation information; however, several have not. For the projects that do not have detailed traffic generation information, an estimate was calculated based on traffic generation information for similar projects and are noted below with an asterisk “*”. Traffic generation calculations and copies of the cumulative project descriptions, locations, traffic generation, and assignments are also included in **Appendix L**. Information for each cumulative project is included below:

- 1) Big Rock Solar* and Laurel Solar* - a photovoltaic solar facility capable of producing approximately 200 megawatts of electricity generally located west of Drew Road and south of I-8. The construction phase is calculated to generate 566 daily trips with 221 AM peak hour trips and 225 PM peak hour trips.
- 2) *Calexico 1-A** - a photovoltaic solar facility capable of producing approximately 100 megawatts of electricity generally located 6 miles west of the City of Calexico. The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.
- 3) *Calexico 1-B** - a photovoltaic solar facility capable of producing approximately 100 megawatts of electricity generally located 6 miles west of the City of Calexico. The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.
- 4) *Calexico 2-A** - a photovoltaic solar facility capable of producing approximately 100 megawatts of electricity generally located 6 miles west of the City of Calexico. The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.
- 5) *Campo Verde Battery Energy Storage System* – a battery storage system for the Campo Verde solar facility generally located west of Drew Road and south of I-8. The construction phase is calculated to generate 126 daily trips with 63 AM peak hour trips and 57 PM peak hour trips.
- 6) *Centinela Solar Phase 2** - a photovoltaic solar facility capable of producing approximately 100 megawatts of electricity generally located east of Drew Road and south of I-8. The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.
- 7) *Coyne Ranch Specific Plan* – a residential project with up to 546 residential units located at 1642 Ross Road. The residential project is calculated to generate 5,198 ADT with 410 AM peak hour trips and 546 PM peak hour trips.

- 8) *County Center II Expansion* – a mixed use project of a commercial center, expansion of the Imperial County Office of Education, a Joint-Use Teacher Training and Conference Center, Judicial Center, County Park, Jail expansion, County Administrative Complex, Public Works Administration, and a County Administrative Complex located on the southwest corner of McCabe Road and Clark Road. The total project is calculated to generate 24,069 ADT with 2,581 AM peak hour trips and 2,242 PM peak hour trips.
- 9) *IV Substation and SDG&E Ocotillo Solar** – a project connecting the Imperial Irrigation District’s “S” line from the Imperial Irrigation District substation to the Imperial Valley substation and a photovoltaic solar facility capable of producing approximately 14 megawatts of electricity generally located adjacent to the SDG&E Imperial Valley Substation. The combined projects are estimated at 240 ADT with 45 AM peak hour trips and 45 PM peak hour trips.
- 10) *IRIS Solar Farm Cluster (Ferrell, Rockwood, Iris, and Lyons)** – photovoltaic solar facilities capable of producing approximately 360 megawatts of electricity generally located north of SR-98 between Brockman Road and Weed Road. The traffic generation for this cumulative project is calculated at 1,020 ADT with 398 AM and 405 PM peak hour trips.
- 11) *Wistaria* - a photovoltaic solar facility capable of producing approximately 250 megawatts of electricity generally located 8 miles west of the city of Calexico. The construction phase is calculated to generate 664 daily trips with 209 AM peak hour trips and 209 PM peak hour trips.
- 12) *Vega Solar** - a photovoltaic solar facility capable of producing approximately 100 megawatts of electricity generally located west of Drew Road and south of I-8. The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.
- 13) *Cumulative on I-8* – some of the remaining cumulative projects within Imperial County may add traffic to I-8. Many of the cumulative projects do not have traffic assignments for I-8 (because they are too far away) and some cumulative projects are too small to require a traffic study; therefore, they do not have reported cumulative traffic volumes for I-8. To account for the possibility of cumulative traffic being added to I-8, five percent of the existing I-8 peak hour volume was used as cumulative background peak hour traffic on I-8.

It was assumed that the cumulative projects listed above will be generating construction traffic during the construction phase of the Drew Solar project. Presently, however, some of the cumulative projects are still in the environmental review process and, thus, may add construction traffic after the completion of the Drew Solar project. Alternatively, some of the cumulative projects may add traffic before the construction phase of Drew Solar. Furthermore, most if not all of the cumulative solar projects will have a peak construction period that may or may not coincide with the Drew Solar peak construction period. Finally, there is a chance that some of the cumulative projects will not proceed; however, this study is made with the conservative assumption that all of the peak cumulative construction volumes were used in the cumulative analysis. Realistically, however, there is high likelihood that all construction peaks will not coincide. The cumulative project (new development) volumes are shown in **Figure 8**.

Figure 8: Near-Term Cumulative Project (New Development) Volumes



11 (0) 120 (23) I-8 WB Ramp 10 (34) 0 (0) 131 (5) Forrester Rd 12 (89) (48) 1	200 (7) 31 (20) I-8 EB Ramp 0 (11) 0 (0) 48 (2) 2 1 (137) 3 (131) Forrester Rd	146 (4) 0 (0) 122 (6) McCabe Rd 2 (146) 0 (32) 0 (0) 3 2 (122) 32 (0) 0 (0)
0 (0) 0 (88) 0 (0) Kubler Rd 0 (0) 88 (0) 0 (0) 4 0 (0) 0 (0) 0 (0) Pulliam Rd	44 (0) 20 (1) 24 (0) Kubler Rd 0 (44) 2 (0) 0 (44) 5 4 (20) 0 (2) 0 (10) Brockman Rd 44 (0) 1 (20) 0 (0)	LEGEND XX (YY) AM peak hour volumes at intersections PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume ZZZZ ADT volumes shown along segments # Intersection Reference Number to LOS Tables Existing Roadways Existing Unpaved Roadway
0 (0) 22 (5) Drew Rd 2 (27) SR-98 27 (1) 4 (22) 6	Intersection numbering sequence out of order to match location on map above 0 (0) 0 (0) 0 (0) SR-98 0 (32) 24 (0) 8 0 (0) 31 (23)	0 (0) 0 (0) 0 (0) SR-98 0 (0) 24 (32) 0 (0) 7 0 (0) 31 (23) 0 (0) Pulliam Rd

6.0 Existing Year 2017 + Project Construction Conditions

This section documents the addition of construction traffic onto year 2017 conditions to document the scenario if the project was constructed immediately over 18 months. Year 2017 plus project construction traffic volumes are shown in **Figure 9**. Intersection, segment, and freeway LOS are shown in **Tables 10, 11 and 12**. Intersection LOS calculations are included in **Appendix M**.

TABLE 10: EXISTING YEAR 2017 WITHOUT AND WITH PROJECT CONSTRUCTION INTERSECTION LOS

Intersection & (Control) ¹	Movement	Year 2017		Year 2017 + Project			
		Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Impact ⁵
1) Forrester Rd at I-8 WB Ramp (U)	Minor	9.7	A	10.2	B	0.5	None
	Leg	9.6	A	9.8	A	0.2	None
2) Forrester Rd at I-8 EB Ramp (U)	Minor	11.1	B	11.6	B	0.5	None
	Leg	13.6	B	14.7	B	1.1	None
3) Forrester Rd at McCabe Rd (U)	Minor	9.5	A	9.9	A	0.4	None
	Leg	9.5	A	11.0	B	1.5	None
4) Pulliam Rd at Kubler Rd (U)	Minor	8.6	A	9.0	A	0.4	None
	Leg	8.6	A	9.2	A	0.6	None
5) Brockman Rd at Kubler Rd (U)	Minor	8.9	A	9.1	A	0.2	None
	Leg	9.0	A	9.1	A	0.1	None
6) Drew Rd at SR-98 (U)	Minor	8.7	A	8.9	A	0.2	None
	Leg	8.9	A	9.1	A	0.2	None
7) Pulliam Rd at SR-98 (U)	Minor	9.0	A	9.4	A	0.4	None
	Leg	8.6	A	8.8	A	0.2	None
8) SR-98 at Project Driveway (U)	Minor	DNE	NA	1.2	A	NA	None
	Leg	DNE	NA	9.2	A	NA	None

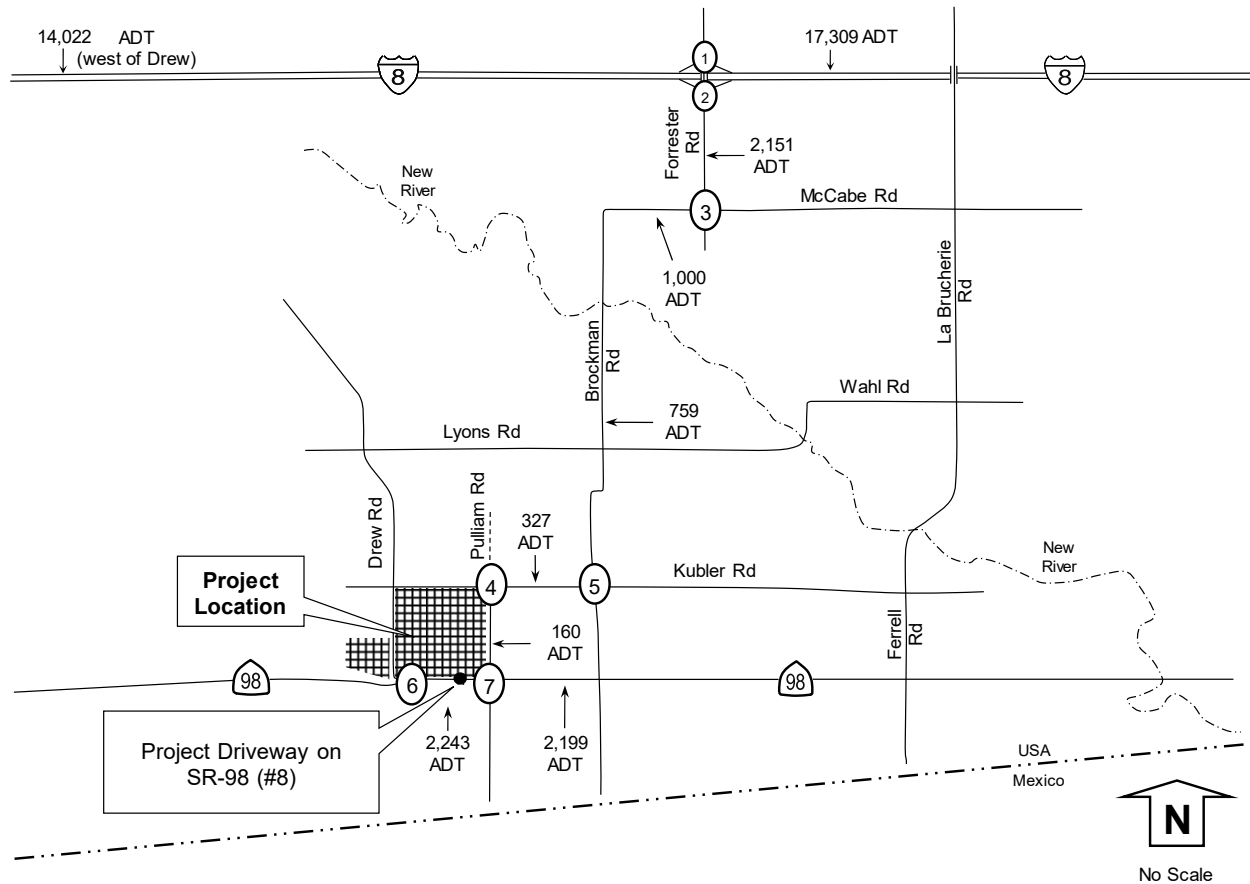
Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.

3) LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

4) Delta is the increase in delay from project. 5) Type of impact: none, direct, or cumulative. DNE: Does not Exist.

NA: Not Applicable.

Figure 9: Existing Year 2017 + Project Construction Volumes



Forrester Rd 67 (54) ← 148 (193) ↓ 83 (71) → 0 (0) → 76 (17) → 12 (8) ↓ 98 (147) ↑ 1	I-8 WB Ramp 57 (84) → 1 (0) → 9 (4) → 144 (43) ↓ 75 (168) ↓ 56 (69) ↑ 21 (57) ↑ 2 Forrester Rd	McCabe Rd 70 (5) ↓ 7 (1) ↓ 77 (51) ↓ 15 (81) → 14 (58) → 2 (1) → 33 (37) → 44 (8) → 1 (0) → 4 (5) ↓ 3 (5) ↓ 1 (1) ↓ 3 Forrester Rd
Pulliam Rd 0 (0) → 2 (46) → 1 (0) → 0 (0) ↓ 1 (1) ↓ 0 (0) ↓ 0 (0) ↓ 0 (0) ↓ 4 Kubler Rd	Brockman Rd 88 (2) ↓ 13 (10) ↓ 4 (3) ↓ 5 (86) → 1 (3) → 0 (1) → 0 (0) ↓ 11 (7) ↓ 0 (0) ↓ 5 Kubler Rd	LEGEND XX AM peak hour volumes at intersections (YY) PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume Z,ZZZ ADT volumes shown along segments # Intersection Reference Number to LOS Tables — Existing Roadways - - - Existing Unpaved Roadway
Drew Rd 10 (0) → 40 (55) → 5 (9) ↓ 3 (35) ↓ 33 (11) → 43 (34) → 6 SR-98	Intersection numbering sequence out of order to match location on map above Project Dwy 7 (0) → 36 (91) → 0 (22) ↓ 22 (38) ↓ 8 SR-98	Pulliam Rd 0 (22) → 36 (91) → 0 (0) ↓ 12 (1) ↓ 0 (0) ↓ 1 (1) ↓ 7 (0) → 66 (37) → 1 (0) → 7 SR-98

TABLE 11: EXISTING YEAR 2017 WITHOUT AND WITH PROJECT CONSTRUCTION ROADWAY AND STATE ROUTE LOS

Segment	Classification (as built)	Year 2017				Project Daily Volume	Year 2017 + Project					
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Impact?
<u>Brockman Road</u>												
McCabe Rd to Kubler Rd	Major (2U)	497	7,100	0.07	A	262	759	7,100	0.11	A	0.04	None
<u>Forrester Road</u>												
I-8 to McCabe Rd	Prime (2U)	1,977	7,100	0.28	B	174	2,151	7,100	0.30	B	0.02	None
<u>Kubler Road</u>												
Brockman Rd to Ferrell Rd	Minor (2U)	65	7,100	0.01	A	262	327	7,100	0.05	A	0.04	None
<u>McCabe Road</u>												
Brockman Rd to Forrester Rd	Major (2U)	738	7,100	0.10	A	262	1,000	7,100	0.14	A	0.04	None
<u>Pulliam Road</u>												
Kubler Rd to SR-98	Minor (2U)	29	7,100	0.00	A	131	160	7,100	0.02	A	0.02	None
<u>SR-98</u>												
Drew Rd to Pulliam Rd	State Highway (2U)	2,090	7,100	0.29	B	153	2,243	7,100	0.32	B	0.02	None
Pulliam Rd to Brockman Rd	State Highway (2U)	2,090	7,100	0.29	B	109	2,199	7,100	0.31	B	0.02	None

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element. 2U = 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Impact? = type of impact (none, cumulative, or direct).

TABLE 12: EXISTING YEAR 2017 WITHOUT AND WITH PROJECT CONSTRUCTION FREEWAY LOS

Freeway Segment	I-8 Dunaway Rd to Drew Rd				I-8 Forrester Rd to Imperial Ave			
<u>Forecasted Year 2017</u>								
ADT	14,000				17,200			
Peak Hour	A M		P M		A M		P M	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor (2)	0.1346	0.1346	0.1631	0.1631	0.1346	0.1346	0.1631	0.1631
D Factor (3)	0.4770	0.5230	0.4958	0.5042	0.4770	0.5230	0.4958	0.5042
Truck Factor (4)	0.8712	0.8712	0.8712	0.8712	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	1,032	1,131	1,299	1,321	1,318	1,446	1,661	1,689
Volume to Capacity	0.220	0.241	0.276	0.281	0.281	0.308	0.353	0.359
LOS	A	A	A	A	A	B	B	B
<u>Project Pk Hr Vol</u>	7	0	0	7	1	36	36	1
<u>Year 2017 + Project</u>								
Peak Hour Volume	1,039	1,131	1,299	1,328	1,319	1,482	1,697	1,690
Volume to Capacity	0.221	0.241	0.276	0.283	0.281	0.315	0.361	0.360
LOS	A	A	A	A	A	B	B	B
Increase in V/C	0.001	0.000	0.000	0.001	0.000	0.008	0.008	0.000
Impact?	None	None	None	None	None	None	None	None

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2017 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2017 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2015 report). Impact? = Direct, Cumulative, or None.

Under existing year 2017 + project construction conditions, the study intersections, roadways, State Route and freeway were calculated to operate at LOS B or better with no significant direct project impacts.

7.0 Existing Year 2017 + Project Construction + Cumulative Conditions

This section documents the addition of project construction traffic onto year 2017 with cumulative conditions. Year 2017 plus project construction + cumulative traffic volumes are shown in **Figure 10**. Intersection, segment, and freeway LOS are shown in **Tables 13, 14 and 15**. Intersection LOS calculations are included in **Appendix N**.

TABLE 13: EXISTING YEAR 2017 WITH PROJECT CONSTRUCTION WITH CUMULATIVE INTERSECTION LOS

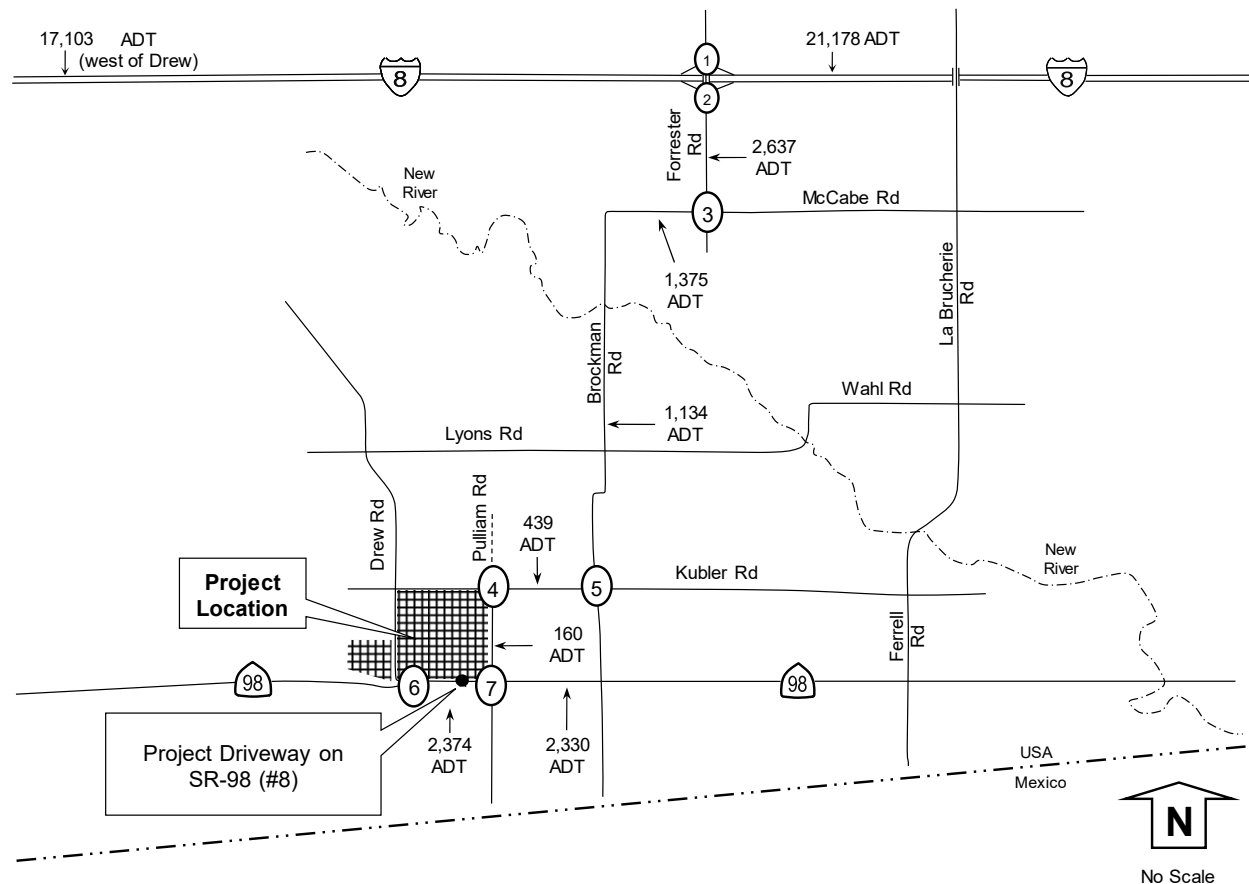
Intersection & (Control) ¹	Movement	Peak Hour	Year 2017 + Cumulative		Year 2017 + Cumulative + Project			
			Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Impact ⁵
1) Forrester Rd at I-8 WB Ramp (U)	Minor Leg	AM PM	12.8 10.8	B B	14.2 11.1	B B	1.4 0.3	None None
2) Forrester Rd at I-8 EB Ramp (U)	Minor Leg	AM PM	12.9 21.1	B C	13.7 22.9	B C	0.8 1.8	None None
3) Forrester Rd at McCabe Rd (U)	Minor Leg	AM PM	12.1 14.9	B B	13.7 18.9	B C	1.6 4.0	None None
4) Pulliam Rd at Kubler Rd (U)	Minor Leg	AM PM	9.0 9.1	A A	9.4 9.8	A A	0.4 0.7	None None
5) Brockman Rd at Kubler Rd (U)	Minor Leg	AM PM	10.5 9.1	B A	10.9 9.8	B A	0.4 0.7	None None
6) Drew Rd at SR-98 (U)	Minor Leg	AM PM	8.9 9.3	A A	9.1 9.5	A A	0.2 0.2	None None
7) Pulliam Rd at SR-98 (U)	Minor Leg	AM PM	9.4 8.8	A A	9.8 10.0	A B	0.4 1.2	None None
8) SR-98 at Project Driveway (U)	Minor Leg	AM PM	0.0 0.0	A A	0.8 9.5	A A	0.8 9.5	None None

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.

3) LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

4) Delta is the increase in delay from project. 5) Type of impact: none, direct, or cumulative.

Figure 10: Existing Year 2017 + Project Construction + Cumulative Volumes



Forrester Rd 78 (54) ← 268 (216) ↓ 93 (105) → 0 (0) → 207 (22) ↓ 12 (56) ↓ 110 (236) ↑ 1 (1)	I-8 WB Ramp 57 (95) → 1 (0) → 57 (6) → 344 (50) ↓ 106 (188) ↓ 2 (2) 33 (11) ↓ 28 (3) ↓ 6 (20) ↓ 0 (4) ↓ 1 (12) ↓	McCabe Rd 216 (9) ↓ 7 (1) ↓ 199 (57) ↓ 35 (159) ↓ 76 (8) ↓ 1 (0) ↓ 17 (227) ↓ 14 (90) ↓ 2 (1) ↓ 4 (5) ↓ 3 (5) ↓ 1 (1) ↓
Pulliam Rd 0 (0) → 2 (134) → 1 (0) → 1 (1) → 0 (0) → 5 (9) → 60 (12) → 47 (56) → 6 (6)	Kubler Rd 132 (2) ↓ 33 (11) ↓ 28 (3) ↓ 6 (20) ↓ 0 (4) ↓ 1 (12) ↓ 5 (130) ↓ 3 (3) ↓ 0 (45) ↓ 44 (27) ↓ 12 (27) ↓ 0 (0) ↓	SR-98 22 (1) ↓ 0 (0) ↓ 0 (7) ↓ 7 (0) ↓ 60 (123) ↓ 0 (0) ↓ 12 (1) ↓ 0 (0) ↓ 1 (1) ↓ 7 (0) ↓ 97 (60) ↓ 1 (0) ↓

TABLE 14: EXISTING YEAR 2017 WITH PROJECT CONSTRUCTION WITH CUMULATIVE ROADWAY AND STATE ROUTE LOS

Segment	Classification (as built)	Year 2017 + Cumulative				Project Daily Volumes	Year 2017 + Cumulative + Project				
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Impact?
Brockman Road											
McCabe Rd to Kubler Rd	Major (2U)	872	7,100	0.12	A	262	1,134	7,100	0.16	A	None
Forrester Road											
I-8 to McCabe Rd	Prime (2U)	2,463	7,100	0.35	B	174	2,637	7,100	0.37	B	None
Kubler Road											
Brockman Rd to Ferrell Rd	Minor (2U)	177	7,100	0.02	A	262	439	7,100	0.06	A	None
McCabe Road											
Brockman Rd to Forrester Rd	Major (2U)	1,113	7,100	0.16	A	262	1,375	7,100	0.19	A	None
Pulliam Road											
Kubler Rd to SR-98	Minor (2U)	29	7,100	0.00	A	131	160	7,100	0.02	A	None
SR-98											
Drew Rd to Pulliam Rd	State Highway (2U)	2,221	7,100	0.31	B	153	2,374	7,100	0.33	B	None
Pulliam Rd to Brockman Rd	State Highway (2U)	2,221	7,100	0.31	B	109	2,330	7,100	0.33	B	None

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element. 2U = 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Impact? = type of impact (none, cumulative, or direct).

TABLE 15: EXISTING YEAR 2017 WITH PROJECT CONSTRUCTION WITH CUMULATIVE FREEWAY LOS

Freeway Segment	I-8 Dunaway Rd to Drew Rd				I-8 Forrester Rd to Imperial Ave			
	Forecasted Year 2017				Forecasted Year 2017			
ADT	14,000				17,200			
Peak Hour	A M				P M			
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4700	4700	4700	4700	4700	4700	4700	4700
K Factor (2)	0.1346	0.1346	0.1631	0.1631	0.1346	0.1346	0.1631	0.1631
D Factor (3)	0.4770	0.5230	0.4958	0.5042	0.4770	0.5230	0.4958	0.5042
Truck Factor (4)	0.8712	0.8712	0.8712	0.8712	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	1032	1131	1299	1321	1318	1446	1661	1689
Volume to Capacity	0.220	0.241	0.276	0.281	0.281	0.308	0.353	0.359
LOS	A	A	A	A	A	B	B	B
Cumulative + Project	248	385	435	282	237	582	643	280
Year 2017 + Cumulative + Project								
Peak Hour Volume	1280	1516	1734	1603	1555	2028	2304	1969
Volume to Capacity	0.272	0.323	0.369	0.341	0.331	0.431	0.490	0.419
LOS	A	B	B	B	B	B	C	B
Increase in V/C	0.053	0.082	0.093	0.060	0.050	0.124	0.137	0.060
Impact?	None	None	None	None	None	None	None	None

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2017 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2017 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2015 report). Impact? = Direct, Cumulative, or None.

Under existing year 2017 + project construction + cumulative conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better with no cumulatively considerable impacts.

8.0 Near-Term Year 2019 Conditions

This section documents near-term year 2019 conditions when the project is anticipated to be at the peak of construction activities. The year 2019 background volumes are based on increasing the existing year 2017 volumes by an annual growth rate. The following documents and data were reviewed to determine a growth rate:

- 1) The California Economic Forecast *California County-Level Economic Forecast 2015-2040*, dated September 2015 documents an average annual growth factor of 1.8 percent from 2015 to 2020 for Imperial County.
- 2) The U.S. Census Bureau population data from year 2010 to year 2016 for Imperial County was used to calculate an average growth factor of 0.6 percent.

For the purpose of this traffic study, the more conservative average growth rate of **1.8 percent** was selected for the annual population growth rate. Excerpts from the California Economic Forecast and Census data are included in **Appendix O**. Year 2019 traffic data was factored up from existing data through the application of a 1.8% annual growth rate (3.6% total).

Year 2019 volumes for the construction peak period were calculated by increasing existing volumes year 2017 by 1.8% annually (3.6% total) as shown in **Figure 11**. Intersection, segment, and freeway LOS are shown in **Tables 16, 17 and 18**. Intersection LOS calculations are included in **Appendix P**.

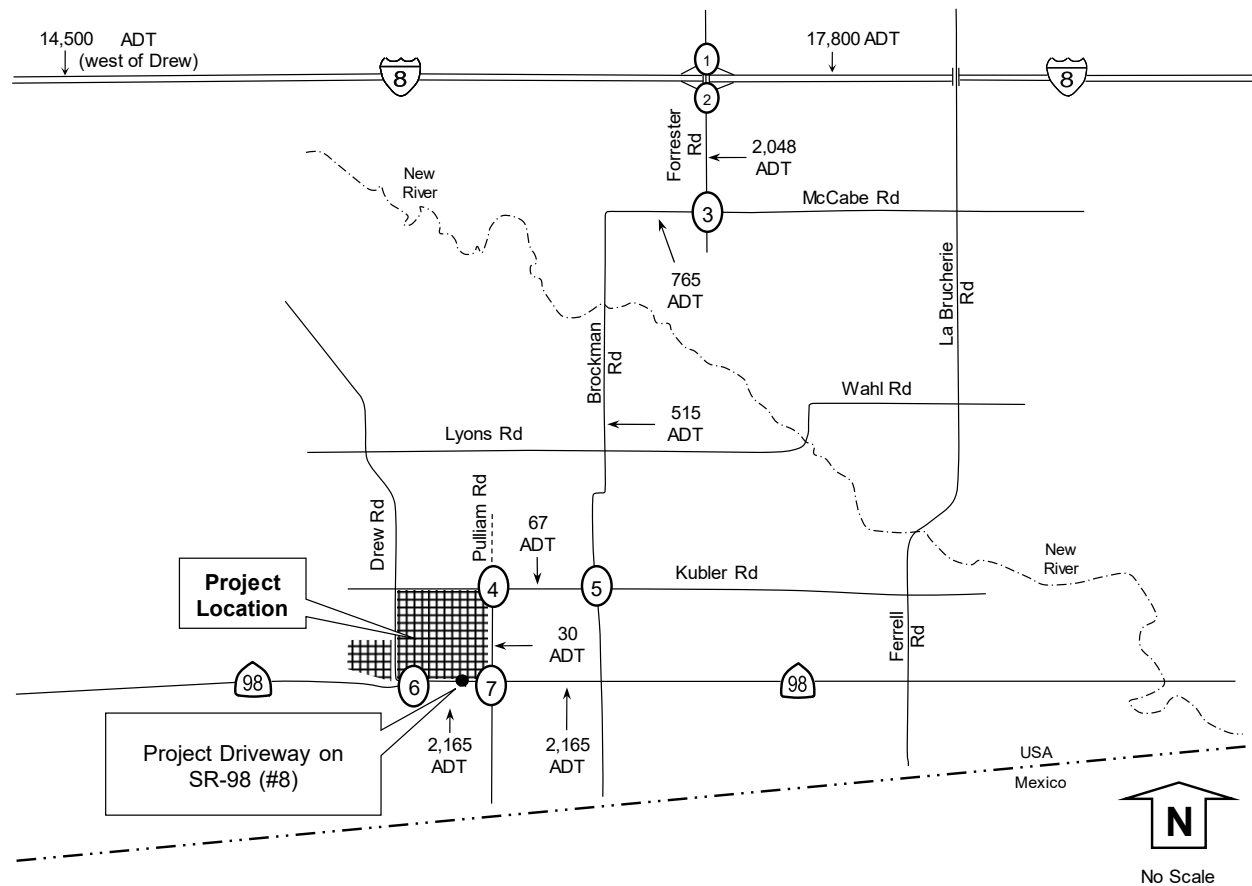
TABLE 16: NEAR-TERM YEAR 2019 INTERSECTION LOS

Intersection & (Control) ¹	Movement	Peak Hour	Year 2019	
			Delay ²	LOS ³
1) Forrester Rd at I-8 WB Ramp (U)	Minor Leg	AM PM	9.7 9.7	A A
2) Forrester Rd at I-8 EB Ramp (U)	Minor Leg	AM PM	11.1 14.3	B B
3) Forrester Rd at McCabe Rd (U)	Minor Leg	AM PM	9.6 9.6	A A
4) Pulliam Rd at Kubler Rd (U)	Minor Leg	AM PM	8.6 8.6	A A
5) Brockman Rd at Kubler Rd (U)	Minor Leg	AM PM	8.9 8.9	A A
6) Drew Rd at SR-98 (U)	Minor Leg	AM PM	8.7 8.9	A A
7) Pulliam Rd at SR-98 (U)	Minor Leg	AM PM	9.1 8.6	A A

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.

3) LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

Figure 11: Near-Term Year 2019 Volumes



Forrester Rd 69 (56) 131 (200) 1 102 (130) 12 (8) 86 (74) 0 (0) 41 (17) I-8 WB Ramp	I-8 EB Ramp 59 (87) 1 (0) 9 (4) 89 (44) 2 58 (49) 78 (174) 21 (22) Forrester Rd	Forrester Rd 15 (24) 13 (30) 2 (1) 12 (4) 7 (1) 80 (53) 34 (38) 16 (7) 1 (0) 3 4 (5) 3 (5) 1 (1) McCabe Rd
Pulliam Rd 0 (0) 1 (3) 1 (0) 0 (0) 1 (1) 0 (0) 4 0 (0) 1 (1) 0 (1) Kubler Rd	Brookman Rd 3 (0) 1 (3) 0 (1) 0 (0) 2 (0) 13 (10) 4 (3) 2 (0) 0 (2) 1 (2) Kubler Rd	LEGEND XX (YY) Z,ZZZ # — ----- AM peak hour volumes at intersections PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume ADT volumes shown along segments Intersection Reference Number to LOS Tables Existing Roadways Existing Unpaved Roadway
Drew Rd 3 (0) 34 (57) 5 (2) 2 (6) 4 (10) 45 (28) 6 SR-98	Project Dwy 0 (0) 36 (64) 0 (0) 0 (0) 0 (0) 0 (0) 8 0 (0) 51 (38) SR-98 Intersection numbering sequence out of order to match location on map above	Pulliam Rd 0 (0) 36 (64) 0 (0) 0 (0) 12 (1) 1 (0) 1 (1) 0 (0) 7 0 (0) 38 (37) 1 (0) SR-98

TABLE 17: NEAR-TERM YEAR 2019 ROADWAY AND STATE ROUTE LOS

Segment	Classification (as built)	Year 2019					
		Daily Volume	# of lanes	LOS C Capacity	V/C	LOS	
<u>Brockman Road</u>							
	McCabe Rd to Kubler Rd	Major (2U)	515	2	7,100	0.07	A
<u>Forrester Road</u>							
	I-8 to McCabe Rd	Prime (2U)	2,048	2	7,100	0.29	B
<u>Kubler Road</u>							
	Brockman Rd to Ferrell Rd	Minor (2U)	67	2	7,100	0.01	A
<u>McCabe Road</u>							
	Brockman Rd to Forrester Rd	Major (2U)	765	2	7,100	0.11	A
<u>Pulliam Road</u>							
	Kubler Rd to SR-98	Minor (2U)	30	2	7,100	0.00	A
<u>SR-98</u>							
	Drew Rd to Pulliam Rd	State Highway (2U)	2,165	2	7,100	0.30	B
	Pulliam Rd to Brockman Rd	State Highway (2U)	2,165	2	7,100	0.30	B

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element. 2U = 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio.

TABLE 18: NEAR-TERM YEAR 2019 FREEWAY LOS

Freeway Segment	I-8 Dunaway Rd to Drew Rd				I-8 Forrester Rd to Imperial Ave			
	14,500				17,800			
Forecasted Year 2019								
ADT								
Peak Hour								
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor (2)	0.1346	0.1346	0.1631	0.1631	0.1346	0.1346	0.1631	0.1631
D Factor (3)	0.4770	0.5230	0.4958	0.5042	0.4770	0.5230	0.4958	0.5042
Truck Factor (4)	0.8712	0.8712	0.8712	0.8712	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	1,069	1,172	1,346	1,369	1,364	1,496	1,718	1,748
Volume to Capacity	0.227	0.249	0.286	0.291	0.290	0.318	0.366	0.372
LOS	A	A	A	A	A	B	B	B

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2017 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2017 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2015 report).

Under near-term year 2019 conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS B or better.

9.0 Near-Term Year 2019 + Project Construction Conditions

This section documents the addition of construction traffic onto near-term year 2019 conditions for the anticipated construction peak. Year 2019 plus project construction traffic volumes are shown in **Figure 12**. Intersection, segment, and freeway LOS are shown in **Tables 19, 20 and 21**. Intersection LOS calculations are included in **Appendix Q**.

TABLE 19: NEAR-TERM YEAR 2019 WITHOUT AND WITH PROJECT CONSTRUCTION INTERSECTION LOS

Intersection & (Control) ¹	Movement	Year 2019		Year 2019 + Project			
		Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Impact ⁵
1) Forrester Rd at I-8 WB Ramp (U)	Minor	9.7	A	10.2	B	0.5	None
	Leg	9.7	A	9.9	A	0.2	None
2) Forrester Rd at I-8 EB Ramp (U)	Minor	11.1	B	11.8	B	0.7	None
	Leg	14.3	B	15.2	C	0.9	None
3) Forrester Rd at McCabe Rd (U)	Minor	9.6	A	9.9	A	0.3	None
	Leg	9.6	A	11.0	B	1.4	None
4) Pulliam Rd at Kubler Rd (U)	Minor	8.6	A	9.0	A	0.4	None
	Leg	8.6	A	9.2	A	0.6	None
5) Brockman Rd at Kubler Rd (U)	Minor	8.9	A	9.1	A	0.2	None
	Leg	8.9	A	9.1	A	0.2	None
6) Drew Rd at SR-98 (U)	Minor	8.7	A	8.9	A	0.2	None
	Leg	8.9	A	9.1	A	0.2	None
7) Pulliam Rd at SR-98 (U)	Minor	9.1	A	9.4	A	0.3	None
	Leg	8.6	A	8.8	A	0.2	None
8) SR-98 at Project Driveway (U)	Minor	DNE	NA	1.2	A	NA	None
	Leg	DNE	NA	9.2	A	NA	None

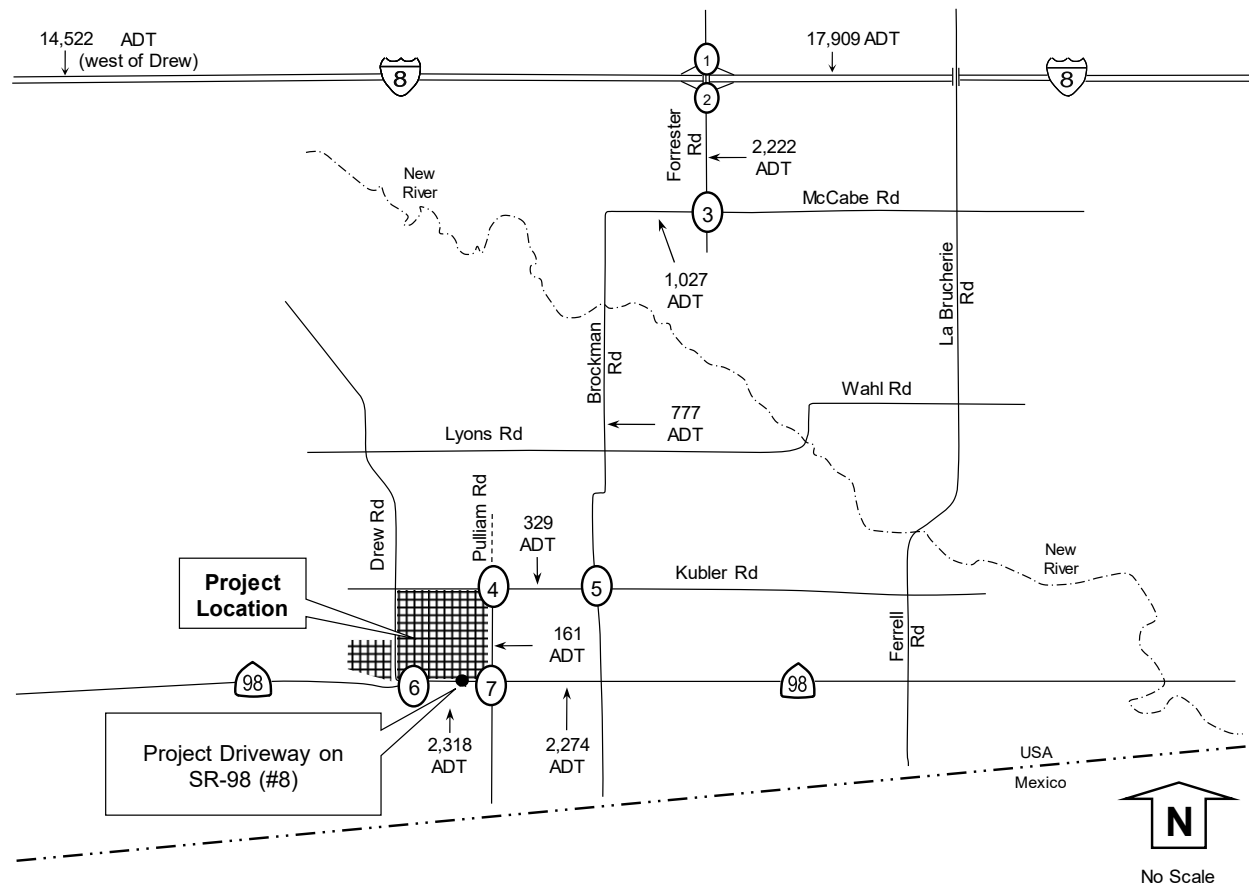
Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.

3) LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

4) Delta is the increase in delay from project. 5) Type of impact: none, direct, or cumulative. DNE: Does not Exist.

NA: Not Applicable.

Figure 12: Near-Term Year 2019 + Project Construction Volumes



69 (56) 153 (200) I-8 WB Ramp Forrester Rd 1 86 (74) 0 (0) 77 (18) 12 (8) 102 (152)	147 (45) 78 (174) I-8 EB Ramp Forrester Rd 2 59 (87) 1 (0) 9 (4) 58 (71) 22 (58)	70 (5) 7 (1) 80 (53) McCabe Rd Forrester Rd 3 16 (82) 14 (59) 2 (1) 4 (5) 3 (5) 1 (1) 34 (38) 45 (8) 1 (0)
0 (0) 0 (0) 0 (1) Kubler Rd Pulliam Rd 4 0 (0) 44 (2) 43 (2) 1 (1) 1 (1) 2 (43)	88 (2) 13 (10) 4 (3) Kubler Rd Brockman Rd 5 5 (86) 1 (3) 0 (1) 0 (0) 11 (7) 0 (0)	LEGEND XX AM peak hour volumes at intersections YY PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume Z,ZZZ ADT volumes shown along segments Intersection Reference Number to LOS Tables Existing Roadways Existing Unpaved Roadway
5 (9) 3 (35) SR-98 Drew Rd 6 10 (0) 41 (57) 33 (11) 45 (35)	Intersection numbering sequence out of order to match location on map above Project Dwy 8 7 (0) 37 (93) 0 (22) 22 (39)	22 (1) 0 (0) 0 (7) SR-98 Pulliam Rd 7 0 (22) 37 (93) 0 (0) 12 (1) 1 (1) 1 (1) 7 (0) 67 (38) 1 (0)

TABLE 20: NEAR-TERM YEAR 2019 WITHOUT AND WITH PROJECT CONSTRUCTION ROADWAY AND STATE ROUTE LOS

Segment	Classification (as built)	Year 2019				Project Daily Volume	Year 2019 + Project						
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Impact?	
<u>Brockman Road</u>													
McCabe Rd to Kubler Rd	Major (2U)	515	7,100	0.07	A	262	777	7,100	0.11	A	0.04	None	
<u>Forrester Road</u>													
I-8 to McCabe Rd	Prime (2U)	2,048	7,100	0.29	B	174	2,222	7,100	0.31	B	0.02	None	
<u>Kubler Road</u>													
Brockman Rd to Ferrell Rd	Minor (2U)	67	7,100	0.01	A	262	329	7,100	0.05	A	0.04	None	
<u>McCabe Road</u>													
Brockman Rd to Forrester Rd	Major (2U)	765	7,100	0.11	A	262	1,027	7,100	0.14	A	0.04	None	
<u>Pulliam Road</u>													
Kubler Rd to SR-98	Minor (2U)	30	7,100	0.00	A	131	161	7,100	0.02	A	0.02	None	
<u>SR-98</u>													
Drew Rd to Pulliam Rd	State Highway (2U)	2,165	7,100	0.30	B	153	2,318	7,100	0.33	B	0.02	None	
Pulliam Rd to Brockman Rd	State Highway (2U)	2,165	7,100	0.30	B	109	2,274	7,100	0.32	B	0.02	None	

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element. 2U = 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Impact? = type of impact (none, cumulative, or direct).

TABLE 21: NEAR-TERM YEAR 2019 WITHOUT AND WITH PROJECT CONSTRUCTION FREEWAY LOS

Freeway Segment	I-8 Dunaway Rd to Drew Rd				I-8 Forrester Rd to Imperial Ave			
Forecasted Year 2019								
ADT	14,500				17,800			
Peak Hour	A M		P M		A M		P M	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor (2)	0.1346	0.1346	0.1631	0.1631	0.1346	0.1346	0.1631	0.1631
D Factor (3)	0.4770	0.5230	0.4958	0.5042	0.4770	0.5230	0.4958	0.5042
Truck Factor (4)	0.8712	0.8712	0.8712	0.8712	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	1,069	1,172	1,346	1,369	1,364	1,496	1,718	1,748
Volume to Capacity	0.227	0.249	0.286	0.291	0.290	0.318	0.366	0.372
LOS	A	A	A	A	A	B	B	B
Project Pk Hr Vol	7	0	0	7	1	36	36	1
Year 2019 + Project								
Peak Hour Volume	1,076	1,172	1,346	1,376	1,365	1,532	1,754	1,749
Volume to Capacity	0.229	0.249	0.286	0.293	0.291	0.326	0.373	0.372
LOS	A	A	A	A	A	B	B	B
Increase in V/C	0.001	0.000	0.000	0.001	0.000	0.008	0.008	0.000
Impact?	None	None	None	None	None	None	None	None

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2017 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2017 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2015 report). Impact? = Direct, Cumulative, or None.

Under near-term year 2019 + project construction conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better with no significant direct project impacts.

10.0 Near-Term Year 2019 + Project Construction + Cumulative Conditions

This section documents the addition of cumulative traffic onto near-term year 2019 with project construction conditions. Year 2019 plus project construction + cumulative traffic volumes are shown in **Figure 13**. Intersection, segment, and freeway LOS are shown in **Tables 22, 23 and 24**. Intersection LOS calculations are included in **Appendix R**.

TABLE 22: NEAR-TERM YEAR 2019 WITH PROJECT CONSTRUCTION WITH CUMULATIVE INTERSECTION LOS

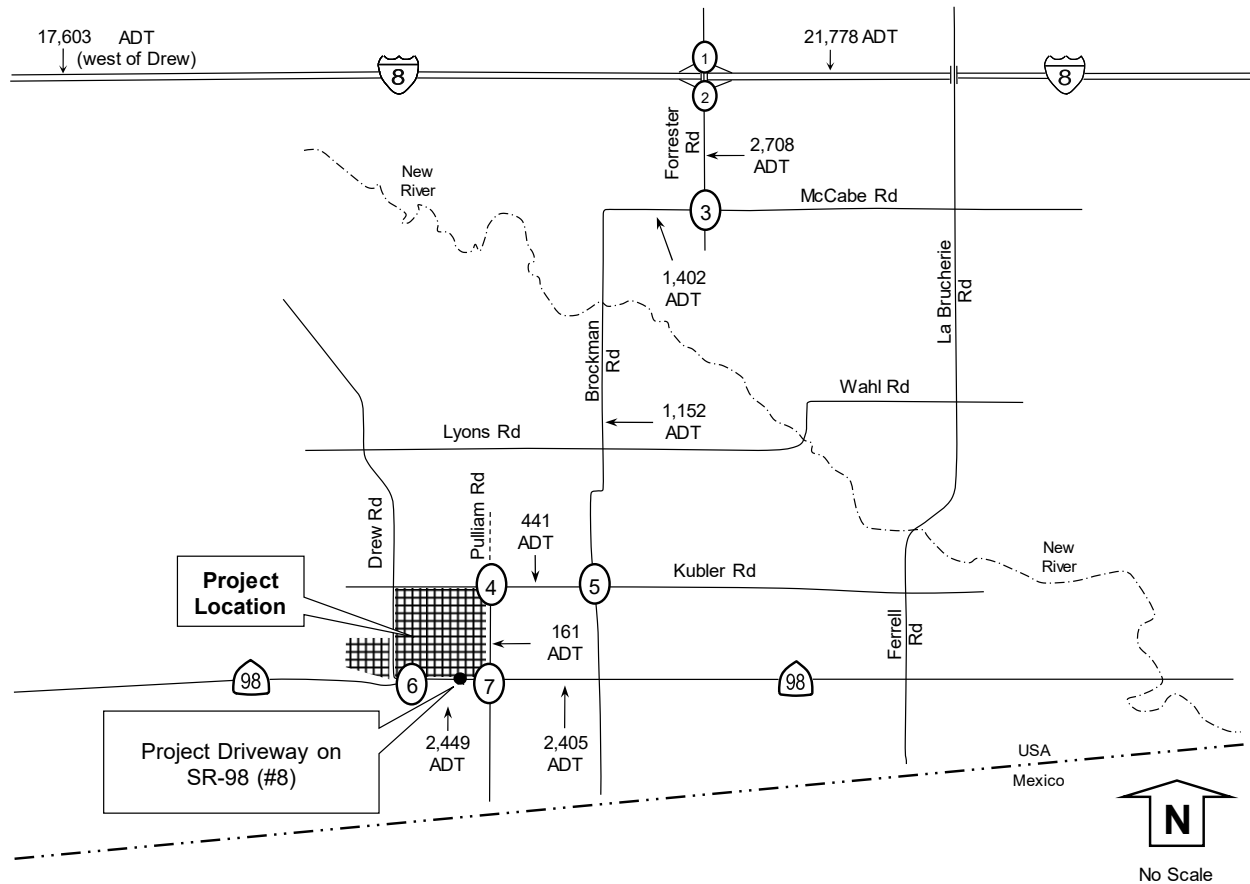
Intersection & (Control) ¹	Movement	Peak Hour	Year 2019 + Cumulative		Year 2019 + Cumulative + Project			
			Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Impact ⁵
1) Forrester Rd at I-8 WB Ramp (U)	Minor Leg	AM PM	13.0 10.9	B B	14.4 11.2	B B	1.4 0.3	None None
2) Forrester Rd at I-8 EB Ramp (U)	Minor Leg	AM PM	13.1 22.2	B C	13.9 24.3	B C	0.8 2.1	None None
3) Forrester Rd at McCabe Rd (U)	Minor Leg	AM PM	12.2 15.1	B C	13.9 19.1	B C	1.7 4.0	None None
4) Pulliam Rd at Kubler Rd (U)	Minor Leg	AM PM	9.0 9.1	A A	9.4 9.8	A A	0.4 0.7	None None
5) Brockman Rd at Kubler Rd (U)	Minor Leg	AM PM	10.5 9.1	B A	10.9 9.8	B A	0.4 0.7	None None
6) Drew Rd at SR-98 (U)	Minor Leg	AM PM	8.9 9.3	A A	9.1 9.5	A A	0.2 0.2	None None
7) Pulliam Rd at SR-98 (U)	Minor Leg	AM PM	9.4 8.8	A A	9.8 10.1	A B	0.4 1.3	None None
8) SR-98 at Project Driveway (U)	Minor Leg	AM PM	0.0 0.0	A A	0.8 9.5	A A	0.8 9.5	None None

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.

3) LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

4) Delta is the increase in delay from project. 5) Type of impact: none, direct, or cumulative.

Figure 13: Near-Term Year 2019 + Project Construction + Cumulative Volumes



80 (56) 273 (223) I-8 WB Ramp Forrester Rd 12 (56) 114 (241) 96 (108) 0 (0) 208 (23) 1	347 (52) 109 (194) I-8 EB Ramp Forrester Rd 59 (98) 1 (0) 57 (6) 2 59 (208) 25 (189)	216 (9) 7 (1) 202 (59) McCabe Rd Forrester Rd 18 (228) 14 (91) 2 (1) 3 36 (160) 77 (8) 1 (0)
0 (0) 0 (0) 0 (1) Kubler Rd 0 (134) 1 (0) 4 132 (2) 43 (2)	132 (2) 33 (11) 28 (3) Kubler Rd 5 (130) 3 (3) 0 (45) 5 6 (20) 0 (4) 1 (12)	LEGEND XX AM peak hour volumes at intersections (YY) PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume Z,ZZZ ADT volumes shown along segments # Intersection Reference Number to LOS Tables Existing Roadways Existing Unpaved Roadway
5 (9) 5 (62) SR-98 10 (0) 63 (62) 6 60 (12) 49 (57)	Intersection numbering sequence out of order to match location on map above Project Dwy 7 (0) 61 (125) 8 22 (0) 111 (62)	22 (1) 0 (0) 0 (7) SR-98 0 (22) 61 (125) 0 (0) 7 7 (0) 98 (61) 1 (0)

TABLE 23: NEAR-TERM YEAR 2019 WITH PROJECT CONSTRUCTION WITH CUMULATIVE ROADWAY AND STATE ROUTE LOS

Segment	Classification (as built)	Year 2019 + Cumulative				Project Daily Volumes	Year 2019 + Cumulative + Project				
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Impact?
<u>Brockman Road</u>											
McCabe Rd to Kubler Rd	Major (2U)	890	7,100	0.13	A	262	1,152	7,100	0.16	A	None
<u>Forrester Road</u>											
I-8 to McCabe Rd	Prime (2U)	2,534	7,100	0.36	B	174	2,708	7,100	0.38	B	None
<u>Kubler Road</u>											
Brockman Rd to Ferrell Rd	Minor (2U)	179	7,100	0.03	A	262	441	7,100	0.06	A	None
<u>McCabe Road</u>											
Brockman Rd to Forrester Rd	Major (2U)	1,140	7,100	0.16	A	262	1,402	7,100	0.20	A	None
<u>Pulliam Road</u>											
Kubler Rd to SR-98	Minor (2U)	30	7,100	0.00	A	131	161	7,100	0.02	A	None
<u>SR-98</u>											
Drew Rd to Pulliam Rd	State Highway (2U)	2,296	7,100	0.32	B	153	2,449	7,100	0.34	B	None
Pulliam Rd to Brockman Rd	State Highway (2U)	2,296	7,100	0.32	B	109	2,405	7,100	0.34	B	None

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element. 2U = 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Impact? = type of impact (none, cumulative, or direct).

TABLE 24: NEAR-TERM YEAR 2019 WITH PROJECT CONSTRUCTION WITH CUMULATIVE FREEWAY LOS

Freeway Segment	I-8 Dunaway Rd to Drew Rd				I-8 Forrester Rd to Imperial Ave			
Forecasted Year 2019	14,500				17,800			
ADT								
Peak Hour								
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4700	4700	4700	4700	4700	4700	4700	4700
K Factor (2)	0.1346	0.1346	0.1631	0.1631	0.1346	0.1346	0.1631	0.1631
D Factor (3)	0.4770	0.5230	0.4958	0.5042	0.4770	0.5230	0.4958	0.5042
Truck Factor (4)	0.8712	0.8712	0.8712	0.8712	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	1069	1172	1346	1369	1364	1496	1718	1748
Volume to Capacity	0.227	0.249	0.286	0.291	0.290	0.318	0.366	0.372
LOS	A	A	A	A	A	B	B	B
Cumulative + Project	248	385	435	282	237	582	643	280
Year 2019 + Cumulative + Project								
Peak Hour Volume	1317	1557	1781	1651	1601	2078	2361	2028
Volume to Capacity	0.280	0.331	0.379	0.351	0.341	0.442	0.502	0.431
LOS	A	B	B	B	B	B	C	B
Increase in V/C	0.053	0.082	0.093	0.060	0.050	0.124	0.137	0.060
Impact?	None	None	None	None	None	None	None	None

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2017 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2017 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2015 report). Impact? = Direct, Cumulative, or None.

Under near-term year 2019 + project construction + cumulative conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better with no cumulatively considerable impacts.

11.0 Long-Term Year 2027 Conditions

This section documents long-term year 2027 conditions in case the entire project (in 18 months) is constructed at the end of the period when construction must commence per the CUP. The year 2027 background volumes are based on increasing the existing year 2017 volumes by an annual growth rate of 1.8% (19.5% total due to compounding growth) as described in the Near-Term Year 2019 Conditions' Section. Year 2027 traffic volumes are shown in **Figure 14**. Intersection, segment, and freeway LOS are shown in **Tables 25, 26 & 27**. Intersection LOS calculations are included in **Appendix S**.

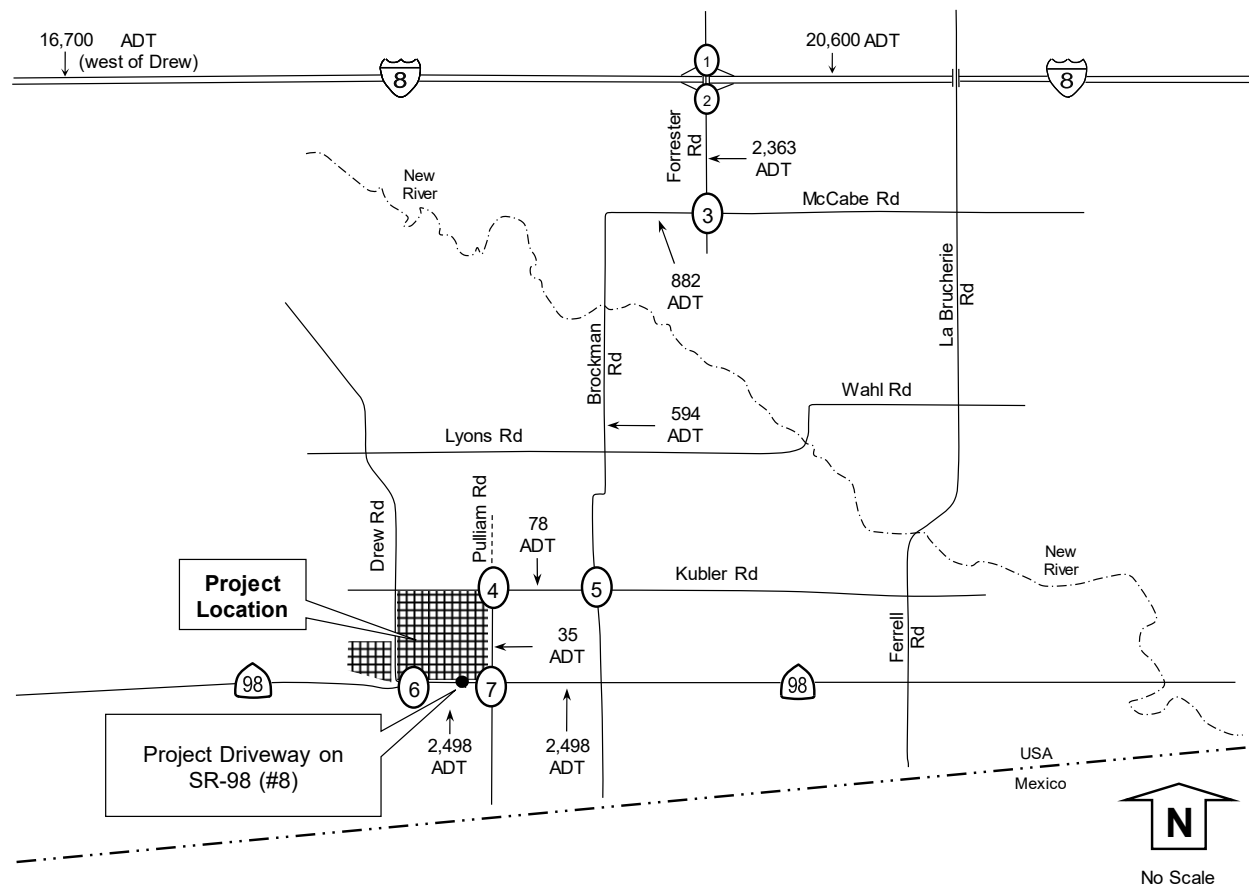
TABLE 25: LONG-TERM YEAR 2027 INTERSECTION LOS

Intersection & (Control) ¹	Movement	Peak Hour	Year 2027	
			Delay ²	LOS ³
1) Forrester Rd at I-8 WB Ramp (U)	Minor Leg	AM PM	10.0 10.0	B B
2) Forrester Rd at I-8 EB Ramp (U)	Minor Leg	AM PM	11.8 16.4	B C
3) Forrester Rd at McCabe Rd (U)	Minor Leg	AM PM	9.8 9.7	A A
4) Pulliam Rd at Kubler Rd (U)	Minor Leg	AM PM	8.6 8.6	A A
5) Brockman Rd at Kubler Rd (U)	Minor Leg	AM PM	8.9 9.0	A A
6) Drew Rd at SR-98 (U)	Minor Leg	AM PM	8.7 9.0	A A
7) Pulliam Rd at SR-98 (U)	Minor Leg	AM PM	9.1 8.7	A A

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.

3) LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

Figure 14: Long-Term Year 2027 Volumes



80 (65) 151 (231) I-8 WB Ramp 99 (85) 0 (0) 48 (19)				103 (50) 90 (201) I-8 EB Ramp 68 (100) 1 (0) 11 (5)				14 (5) 8 (1) 92 (61) McCabe Rd 39 (44) 18 (8) 1 (0)			
Forrester Rd 14 (10) 117 (149) 1 0 0				Forrester Rd 67 (56) 24 (25) 2 0 0				Forrester Rd 5 (6) 4 (6) 1 (1) 6 (2) 2 (7)			
0 1 1 Pulliam Rd 0 0 0				4 1 0 Brockman Rd 0 0 0				4 39 0 Drew Rd 0 0 0			
0 0 0 Kubler Rd 0 0 0				2 0 0 Kubler Rd 2 0 1				5 51 12 32 SR-98			
0 42 0 Pulliam Rd 0 0 0				0 42 0 Project Dwy 0 0 0				0 59 44 SR-98			

LEGEND	
XX	AM peak hour volumes at intersections
(YY)	PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume
Z,ZZZ	ADT volumes shown along segments
#	Intersection Reference Number to LOS Tables
—	Existing Roadways
- - - -	Existing Unpaved Roadway

TABLE 26: LONG-TERM YEAR 2027 ROADWAY AND STATE ROUTE LOS

Segment	Classification (as built)	Year 2027					
		Daily Volume	# of lanes	LOS C Capacity	V/C	LOS	
<u>Brockman Road</u>							
	McCabe Rd to Kubler Rd	Major (2U)	594	2	7,100	0.08	A
<u>Forrester Road</u>							
	I-8 to McCabe Rd	Prime (2U)	2,363	2	7,100	0.33	B
<u>Kubler Road</u>							
	Brockman Rd to Ferrell Rd	Minor (2U)	78	2	7,100	0.01	A
<u>McCabe Road</u>							
	Brockman Rd to Forrester Rd	Major (2U)	882	2	7,100	0.12	A
<u>Pulliam Road</u>							
	Kubler Rd to SR-98	Minor (2U)	35	2	7,100	0.00	A
<u>SR-98</u>							
	Drew Rd to Pulliam Rd	State Highway (2U)	2,498	2	7,100	0.35	B
	Pulliam Rd to Brockman Rd	State Highway (2U)	2,498	2	7,100	0.35	B

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element. 2U = 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio.

TABLE 27: LONG-TERM YEAR 2027 FREEWAY LOS

Freeway Segment	I-8 Dunaway Rd to Drew Rd				I-8 Forrester Rd to Imperial Ave			
	16,700				20,600			
Forecasted Year 2027								
ADT								
Peak Hour								
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor (2)	0.1346	0.1346	0.1631	0.1631	0.1346	0.1346	0.1631	0.1631
D Factor (3)	0.4770	0.5230	0.4958	0.5042	0.4770	0.5230	0.4958	0.5042
Truck Factor (4)	0.8712	0.8712	0.8712	0.8712	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	1,231	1,349	1,550	1,576	1,579	1,731	1,989	2,022
Volume to Capacity	0.262	0.287	0.330	0.335	0.336	0.368	0.423	0.430
LOS	A	A	B	B	B	B	B	B

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2017 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2017 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2015 report).

Under long-term year 2027 conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better.



12.0 Long-Term Year 2027 + Project Construction Conditions

This section documents the addition of construction traffic onto long-term year 2027 conditions. Year 2027 plus project construction traffic volumes are shown in **Figure 15**. Intersection, segment, and freeway LOS are shown in **Tables 28, 29 and 30**. Intersection LOS calculations are included in **Appendix T**.

TABLE 28: LONG-TERM YEAR 2027 WITH PROJECT CONSTRUCTION INTERSECTION LOS

Intersection & (Control) ¹	Movement	Year 2027		Year 2027 + Project			
		Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Impact ⁵
1) Forrester Rd at I-8 WB Ramp (U)	Minor	10.0	B	10.6	B	0.6	None
	Leg	10.0	B	10.2	B	0.2	None
2) Forrester Rd at I-8 EB Ramp (U)	Minor	11.8	B	12.6	B	0.8	None
	Leg	16.4	C	17.5	C	1.1	None
3) Forrester Rd at McCabe Rd (U)	Minor	9.8	A	10.2	B	0.4	None
	Leg	9.7	A	11.3	B	1.6	None
4) Pulliam Rd at Kubler Rd (U)	Minor	8.6	A	9.0	A	0.4	None
	Leg	8.6	A	9.2	A	0.6	None
5) Brockman Rd at Kubler Rd (U)	Minor	8.9	A	9.1	A	0.2	None
	Leg	9.0	A	9.1	A	0.1	None
6) Drew Rd at SR-98 (U)	Minor	8.7	A	8.9	A	0.2	None
	Leg	9.0	A	9.2	A	0.2	None
7) Pulliam Rd at SR-98 (U)	Minor	9.1	A	9.5	A	0.4	None
	Leg	8.7	A	8.8	A	0.1	None
8) SR-98 at Project Driveway (U)	Minor	DNE	NA	1.0	A	NA	None
	Leg	DNE	NA	9.3	A	NA	None

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.

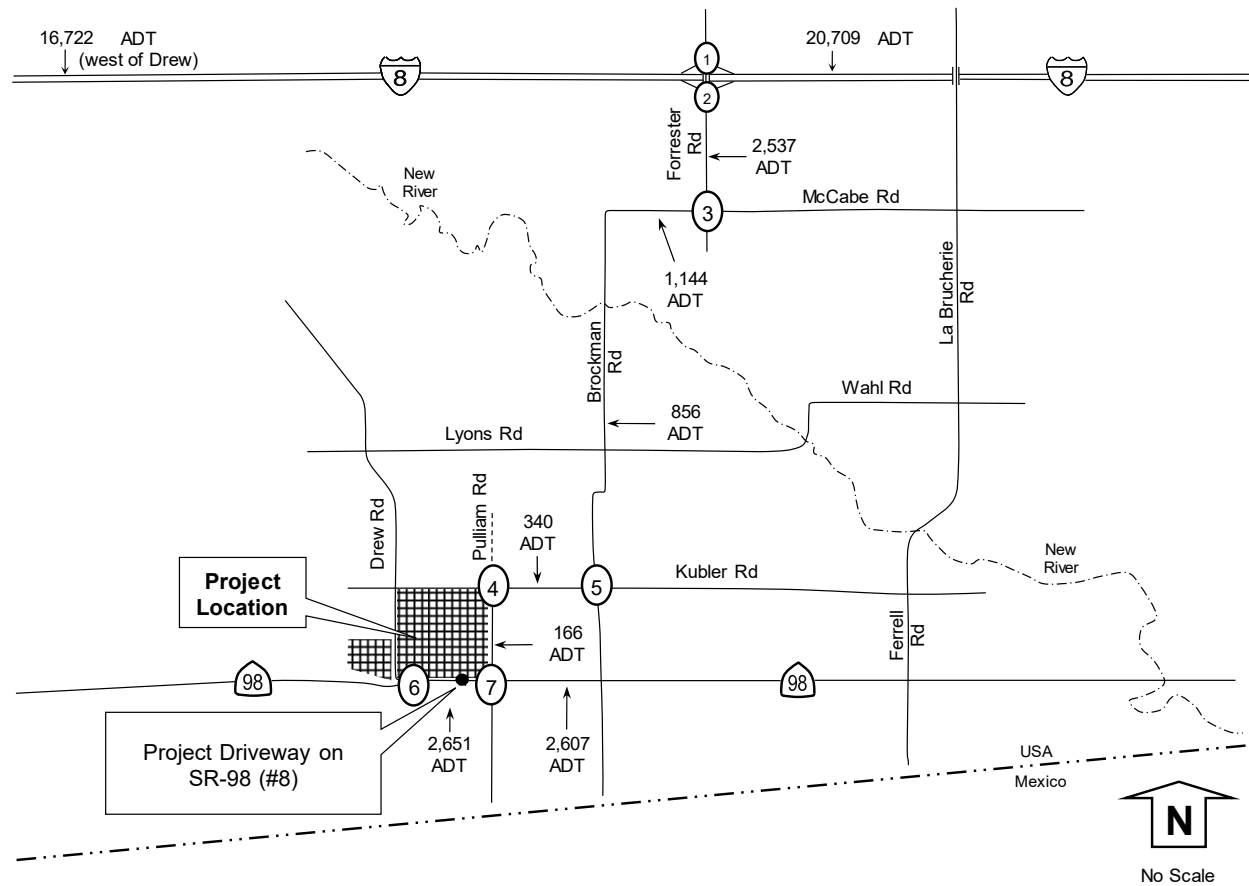
3) LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

4) Delta is the increase in delay from project. 5) Type of impact: none, direct, or cumulative. DNE: Does not Exist.

NA: Not Applicable.



Figure 15: Long-Term Year 2027 + Project Construction Volumes



Forrester Rd 80 (65) ← 173 (231) ↓ 14 (10) ← 117 (171) ↑ 1 99 (85) ↑ 0 (0) → 84 (20) ↓	I-8 WB Ramp 68 (100) ↑ 1 (0) → 11 (5) ↓ I-8 EB Ramp 161 (51) ↓ 90 (201) → 67 (78) ↑ 25 (61) ↓ Forrester Rd	McCabe Rd 72 (6) ← 8 (1) ↓ 92 (61) → 39 (44) ↑ 47 (9) ↓ 1 (0) → 3 Forrester Rd 18 (85) ← 17 (64) → 2 (1) ↓ 5 (6) ↑ 4 (6) ↓ 1 (1) →
Kubler Rd 0 (0) ↑ 2 (47) → 1 (0) ↓ 1 (1) ↑ 1 (43) ↓ 4 0 (1) ↑ 44 (2) → 43 (2) ↓ Pulliam Rd	Kubler Rd 88 (2) ↑ 16 (12) ↓ 5 (4) → 2 (0) ↑ 0 (2) ↓ 5 6 (86) ↑ 1 (4) → 0 (1) ↓ 0 (0) ↑ 0 (8) ↓ Brockman Rd	LEGEND XX (YY) AM peak hour volumes at intersections PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume Z,ZZZ ADT volumes shown along segments # Intersection Reference Number to LOS Tables — Existing Roadways - - - Existing Unpaved Roadway
Drew Rd 11 (0) ↑ 46 (66) → 6 6 (9) ↑ 3 (36) ↓ 34 (13) → 51 (39) ↓ SR-98	Intersection numbering sequence out of order to match location on map above Project Dwy 7 (0) ↑ 43 (103) → 8 0 (22) ↑ 22 (0) → 88 (45) ↓ SR-98	SR-98 22 (1) ↑ 0 (0) ↓ 0 (7) → 7 (0) ↑ 73 (44) ↓ 1 (0) → 7 0 (22) ↑ 43 (103) → 0 (0) ↓ 14 (1) ↑ 1 (1) ↓ Pulliam Rd

TABLE 29: LONG-TERM YEAR 2027 WITH PROJECT CONSTRUCTION ROADWAY AND STATE ROUTE LOS

Segment	Classification (as built)	Year 2027				Project Daily Volume	Year 2027 + Project						
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Impact?	
<u>Brockman Road</u>													
McCabe Rd to Kubler Rd	Major (2U)	594	7,100	0.08	A	262	856	7,100	0.12	A	0.04	None	
<u>Forrester Road</u>													
I-8 to McCabe Rd	Prime (2U)	2,363	7,100	0.33	B	174	2,537	7,100	0.36	B	0.02	None	
<u>Kubler Road</u>													
Brockman Rd to Ferrell Rd	Minor (2U)	78	7,100	0.01	A	262	340	7,100	0.05	A	0.04	None	
<u>McCabe Road</u>													
Brockman Rd to Forrester Rd	Major (2U)	882	7,100	0.12	A	262	1,144	7,100	0.16	A	0.04	None	
<u>Pulliam Road</u>													
Kubler Rd to SR-98	Minor (2U)	35	7,100	0.00	A	131	166	7,100	0.02	A	0.02	None	
<u>SR-98</u>													
Drew Rd to Pulliam Rd	State Highway (2U)	2,498	7,100	0.35	B	153	2,651	7,100	0.37	B	0.02	None	
Pulliam Rd to Brockman Rd	State Highway (2U)	2,498	7,100	0.35	B	109	2,607	7,100	0.37	B	0.02	None	

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element. 2U = 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Impact? = type of impact (none, cumulative, or direct).

TABLE 30: LONG-TERM YEAR 2027 WITH PROJECT CONSTRUCTION FREEWAY LOS

Freeway Segment	I-8 Dunaway Rd to Drew Rd				I-8 Forrester Rd to Imperial Ave			
	16,700				20,600			
Forecasted Year 2027								
ADT								
Peak Hour	A M		P M		A M		P M	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor (2)	0.1346	0.1346	0.1631	0.1631	0.1346	0.1346	0.1631	0.1631
D Factor (3)	0.4770	0.5230	0.4958	0.5042	0.4770	0.5230	0.4958	0.5042
Truck Factor (4)	0.8712	0.8712	0.8712	0.8712	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	1,231	1,349	1,550	1,576	1,579	1,731	1,989	2,022
Volume to Capacity	0.262	0.287	0.330	0.335	0.336	0.368	0.423	0.430
LOS	A	A	B	B	B	B	B	B
Project Pk Hr Vol	7	0	0	7	1	36	36	1
Year 2027 + Project								
Peak Hour Volume	1,238	1,349	1,550	1,583	1,580	1,767	2,025	2,023
Volume to Capacity	0.263	0.287	0.330	0.337	0.336	0.376	0.431	0.431
LOS	A	A	B	B	B	B	B	B
Increase in V/C	0.001	0.000	0.000	0.001	0.000	0.008	0.008	0.000
Impact?	None	None	None	None	None	None	None	None

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2017 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2017 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2015 report). Impact? = Direct, Cumulative, or None.

Under long-term year 2027 + project construction conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better with no significant direct project impacts.

13.0 Long-Term Year 2027 Cumulative Projects (Past, Present, & Reasonably Foreseeable New Development)

The long-term cumulative project list was based on the near-term cumulative project list; however, most of the projects on this list are solar or other renewable energy projects. For these solar/renewable energy projects, the traffic generation was updated to reflect the post construction operations phase, which has a significantly lower amount of traffic because the typical operations staff is about 10 people compared to about 200 to 250 construction workers required to construct a solar project. The timely conversion of construction to operations is supported by the fact that County Code section 90203.13 voids such project's conditional use permits unless the permittee commences the project within one year from the approval date of the conditional use permit or obtains an extension for up to two one-year periods. Therefore, if applications on file at the County in 2017 take two years to get approved, have a one year CUP life with two years of possible CUP extensions, and an 18 month construction period, then it is reasonable to assume all renewable energy projects on the cumulative list will be completed by year 2027 and would be generating operations traffic (not construction traffic) as noted below.

The long-term cumulative list below describes the cumulative projects in the immediate area around the project site (i.e. projects that are generally located south of I-8 and west of Clark Road). Most of the cumulative projects have completed technical studies including traffic generation information; however, several have not. For the projects that do not have detailed operations phase traffic generation information, an estimate was calculated based on operations traffic generation information for similar projects and are noted below with an asterisk "*". Operations traffic generation calculations are included in **Appendix U**. Information for each cumulative project is included below with text identifying if a cumulative project was observed to be under construction:

- 1) Big Rock Solar* and Laurel Solar* - a photovoltaic solar facility capable of producing approximately 200 megawatts of electricity generally located west of Drew Road and south of I-8. The operations phase is calculated to generate 16 daily trips with 5 AM peak hour trips and 5 PM peak hour trips.
- 2) *Calexico 1-A** - a photovoltaic solar facility capable of producing approximately 100 megawatts of electricity generally located 6 miles west of the City of Calexico. The operations phase is calculated to generate 8 daily trips with 3 AM peak hour trips and 3 PM peak hour trips.
- 3) *Calexico 1-B** - a photovoltaic solar facility capable of producing approximately 100 megawatts of electricity generally located 6 miles west of the City of Calexico. The operations phase is calculated to generate 8 daily trips with 3 AM peak hour trips and 3 PM peak hour trips.
- 4) *Calexico 2-A** - a photovoltaic solar facility capable of producing approximately 100 megawatts of electricity generally located 6 miles west of the City of Calexico. The operations phase is calculated to generate 8 daily trips with 3 AM peak hour trips and 3 PM peak hour trips.
- 5) *Campo Verde Battery Energy Storage System* – a battery storage system for the Campo Verde

solar facility generally located west of Drew Road and south of I-8. The operations phase is calculated to generate 8 daily trips with 2 AM peak hour trips and 2 PM peak hour trips.

- 6) *Centinela Solar Phase 2** - a photovoltaic solar facility capable of producing approximately 100 megawatts of electricity generally located east of Drew Road and south of I-8. The operations phase is calculated to generate 8 daily trips with 3 AM peak hour trips and 3 PM peak hour trips.
- 7) *Coyne Ranch Specific Plan* – a residential project with up to 546 residential units located at 1642 Ross Road. The residential project is calculated to generate 5,198 ADT with 410 AM peak hour trips and 546 PM peak hour trips.
- 8) *County Center II Expansion* – a mixed use project of a commercial center, expansion of the Imperial County Office of Education, a Joint-Use Teacher Training and Conference Center, Judicial Center, County Park, Jail expansion, County Administrative Complex, Public Works Administration, and a County Administrative Complex located on the southwest corner of McCabe Road and Clark Road. The total project is calculated to generate 24,069 ADT with 2,581 AM peak hour trips and 2,242 PM peak hour trips.
- 9) *IV Substation and SDG&E Ocotillo Solar** – a project connecting the Imperial Irrigation District’s “S” line from the Imperial Irrigation District substation to the Imperial Valley substation and a photovoltaic solar facility capable of producing approximately 14 megawatts of electricity generally located adjacent to the SDG&E Imperial Valley Substation. The operations phase is calculated to generate 8 daily trips with 3 AM peak hour trips and 3 PM peak hour trips.
- 10) *IRIS Solar Farm Cluster (Ferrell, Rockwood, Iris, and Lyons)** – photovoltaic solar facilities capable of producing approximately 360 megawatts of electricity generally located north of SR-98 between Brockman Road and Weed Road. The operations phase is calculated to generate 28 daily trips with 9 AM peak hour trips and 9 PM peak hour trips.
- 11) *Wistaria* - a photovoltaic solar facility capable of producing approximately 250 megawatts of electricity generally located 8 miles west of the city of Calexico. The operations phase is calculated to generate 19 daily trips with 6 AM peak hour trips and 6 PM peak hour trips.
- 12) *Vega Solar** - a photovoltaic solar facility capable of producing approximately 100 megawatts of electricity generally located west of Drew Road and south of I-8. The operations phase is calculated to generate 8 daily trips with 3 AM peak hour trips and 3 PM peak hour trips.
- 13) *Cumulative on I-8* – some of the remaining cumulative projects within Imperial County may add traffic to I-8. Many of the cumulative projects do not have traffic assignments for I-8 (because they are too far away) and some cumulative projects are too small to require a traffic study; therefore, they do not have reported cumulative traffic volumes for I-8. To account for the possibility of cumulative traffic being added to I-8, five percent of the existing I-8 peak hour volume was used as cumulative background peak hour traffic on I-8.

Traffic from the long-term cumulative list above was applied to the long-term year 2027 conditions. The long-term cumulative project (new development) volumes are shown in **Figure 16**.

The map shows the project location in the Fort Worth area, centered around the intersection of SR-98 (#8) and SR-114 (#360). The project location is marked with a grid of squares and labeled "Project Location". The project driveway on SR-98 (#8) is also indicated. Major roads shown include SR-8, SR-98 (#8), SR-114 (#360), SR-121 (#121), SR-122 (#122), SR-123 (#123), SR-124 (#124), SR-125 (#125), SR-126 (#126), SR-127 (#127), SR-128 (#128), SR-129 (#129), SR-130 (#130), SR-131 (#131), SR-132 (#132), SR-133 (#133), SR-134 (#134), SR-135 (#135), SR-136 (#136), SR-137 (#137), SR-138 (#138), SR-139 (#139), SR-140 (#140), SR-141 (#141), SR-142 (#142), SR-143 (#143), SR-144 (#144), SR-145 (#145), SR-146 (#146), SR-147 (#147), SR-148 (#148), SR-149 (#149), SR-150 (#150), SR-151 (#151), SR-152 (#152), SR-153 (#153), SR-154 (#154), SR-155 (#155), SR-156 (#156), SR-157 (#157), SR-158 (#158), SR-159 (#159), SR-160 (#160), SR-161 (#161), SR-162 (#162), SR-163 (#163), SR-164 (#164), SR-165 (#165), SR-166 (#166), SR-167 (#167), SR-168 (#168), SR-169 (#169), SR-170 (#170), SR-171 (#171), SR-172 (#172), SR-173 (#173), SR-174 (#174), SR-175 (#175), SR-176 (#176), SR-177 (#177), SR-178 (#178), SR-179 (#179), SR-180 (#180), SR-181 (#181), SR-182 (#182), SR-183 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SR-516 (#516), SR-517 (#517), SR-518 (#

Forrester Rd I-8 WB Ramp 1 36 (20) 10 (34) 1 (2) (5)	I-8 EB Ramp 14 (9) 31 (20) 0 (1) 0 (0) 2 (0) 0 (0) 5 (5) Forrester Rd 2 (7) (5)	Forrester Rd McCabe Rd 5 (5) 9 (9) 0 (0) 7 (0) 0 (0) 0 (0) 0 (0) 3 (7) (0) (0)
Pulliam Rd Kubler Rd 0 (0) 1 (1) 0 (0) 0 (0) 4 (1) (1) (0) (0)	Brockman Rd Kubler Rd 1 (1) 4 (5) 2 (3) 0 (0) 0 (0) 0 (0) 4 (0) 5 (0) 5 (3) (0) (0)	LEGEND XX AM peak hour volumes at intersections (YY) PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume Z,ZZZ ADT volumes shown along segments Intersection Reference Number to LOS Tables # Existing Roadways ----- Existing Unpaved Roadway
Drew Rd SR-98 0 (0) 0 (0) 1 (0) 0 (0) 6 (0) (0)	Intersection numbering sequence out of order to match location on map above Project Dwy SR-98 0 (0) 0 (0) 0 (0) 0 (1) 8 (0) (0)	Pulliam Rd SR-98 0 (0) 0 (0) 0 (0) 1 (0) 0 (0) 7 (0) (0)

14.0 Long-Term Year 2027 + Project Construction + Cumulative Conditions

This section documents the addition of project construction traffic onto year 2027 with cumulative conditions. The long-term cumulative project traffic was used for this scenario. Year 2027 plus project construction + cumulative traffic volumes are shown in **Figure 17**. Intersection, segment, and freeway LOS are shown in **Tables 31, 32 and 33**. Intersection LOS calculations are included in **Appendix V**.

TABLE 31: LONG-TERM YEAR 2027 WITH PROJECT CONSTRUCTION WITH CUMULATIVE INTERSECTION LOS

Intersection & (Control) ¹	Movement	Peak Hour	Year 2027 + Cumulative		Year 2027 + Cumulative + Project			
			Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Impact ⁵
1) Forrester Rd at I-8 WB Ramp (U)	Minor Leg	AM PM	10.3 10.3	B B	10.9 10.5	B B	0.6 0.2	None None
2) Forrester Rd at I-8 EB Ramp (U)	Minor Leg	AM PM	12.9 18.2	B C	13.9 19.6	B C	1.0 1.4	None None
3) Forrester Rd at McCabe Rd (U)	Minor Leg	AM PM	9.9 9.8	A A	10.4 11.3	B B	0.5 1.5	None None
4) Pulliam Rd at Kubler Rd (U)	Minor Leg	AM PM	8.7 8.6	A A	9.1 9.2	A A	0.4 0.6	None None
5) Brockman Rd at Kubler Rd (U)	Minor Leg	AM PM	9.0 9.1	A A	9.3 9.3	A A	0.3 0.2	None None
6) Drew Rd at SR-98 (U)	Minor Leg	AM PM	8.7 9.0	A A	8.9 9.2	A A	0.2 0.2	None None
7) Pulliam Rd at SR-98 (U)	Minor Leg	AM PM	9.1 8.7	A A	9.5 8.8	A B	0.4 0.1	None None
8) SR-98 at Project Driveway (U)	Minor Leg	AM PM	0.0 0.0	A A	1.0 9.3	A A	1.0 9.3	None None

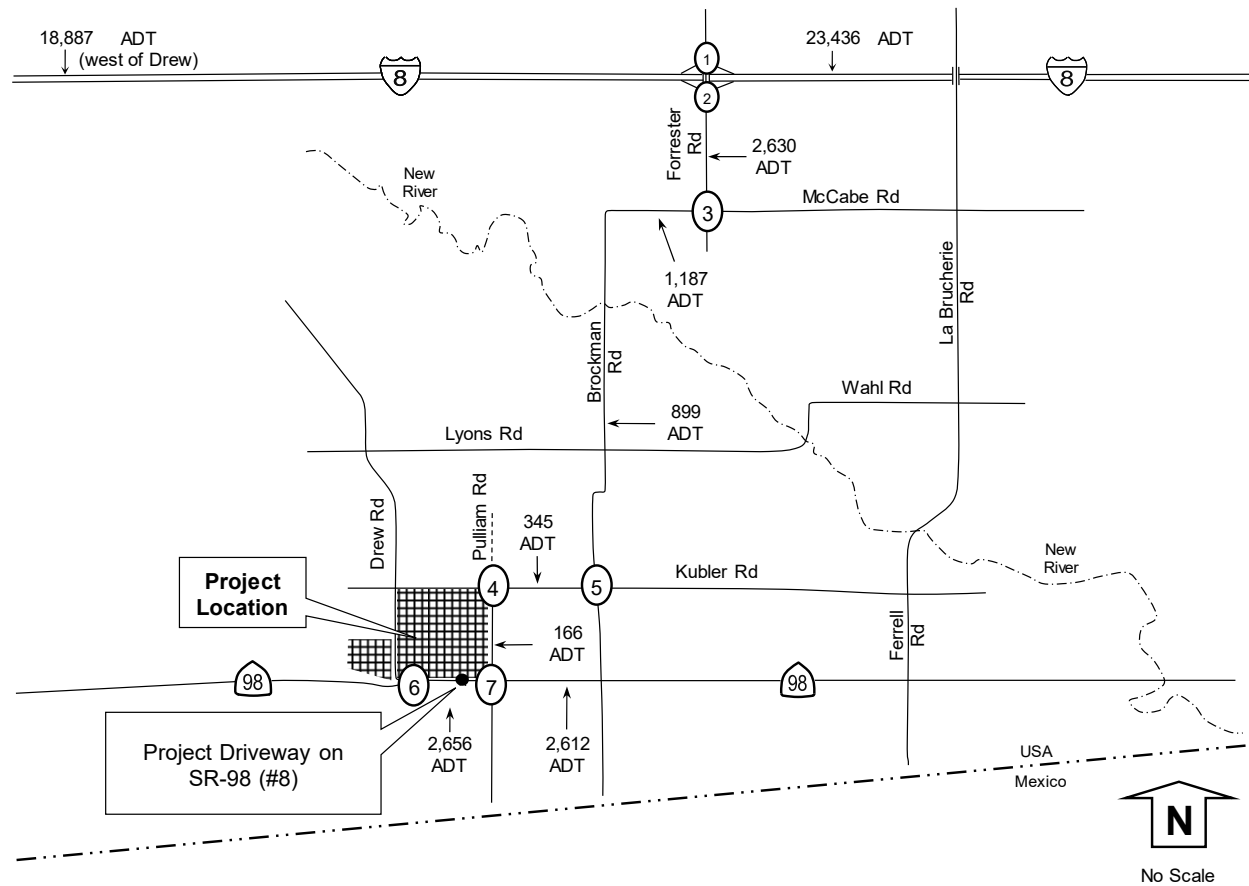
Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.

3) LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

4) Delta is the increase in delay from project. 5) Type of impact: none, direct, or cumulative.



Figure 17: Long-Term Year 2027 + Project Construction + Cumulative Volumes



Forrester Rd 81 (65) ← 209 (251) ↓ 14 (12) ← 118 (176) ↑ 1 109 (119) ↑ 0 (0) → 93 (29) ↓	I-8 WB Ramp 68 (101) ↑ 1 (0) → 13 (5) ↓ I-8 EB Ramp 175 (60) ↓ 121 (221) → 67 (85) ↑ 30 (66) ↓ Forrester Rd	McCabe Rd 81 (15) ← 8 (1) ↓ 99 (61) → 39 (51) ↑ 47 (9) ↓ 1 (0) → 3 23 (90) ← 17 (64) → 2 (1) ↓ 5 (6) ↑ 4 (6) ↓ 1 (1) →
Kubler Rd 0 (0) ↑ 0 (0) ↓ 0 (1) → 4 0 (0) ↑ 45 (3) → 43 (2) ↓ Pulliam Rd 0 (0) ↑ 1 (1) ↓ 2 (43) →	Kubler Rd 89 (3) ↓ 20 (17) → 7 (7) ↑ 5 7 (87) ↑ 1 (4) → 0 (1) ↓ Brockman Rd 0 (0) ↑ 17 (13) ↓ 0 (0) →	LEGEND XX (YY) AM peak hour volumes at intersections PM peak hour volumes at intersections. An empty bracket () represents a 0 PM volume Z,ZZZ ADT volumes shown along segments to LOS Tables # Intersection Reference Number to LOS Tables — Existing Roadways - - - Existing Unpaved Roadway
Drew Rd 11 (0) ↑ 46 (66) → 6 6 (9) ↓ 3 (37) → 35 (13) ↑ 51 (39) ↓ SR-98	Intersection numbering sequence out of order to match location on map above Project Dwy 7 (0) ↑ 43 (104) → 8 0 (0) ↓ 22 (22) → 22 (0) ↑ 89 (45) ↓ SR-98	SR-98 22 (0) ↓ 0 (7) → 0 (0) ↑ 7 0 (22) ↑ 43 (104) → 0 (0) ↓ 14 (1) ↑ 1 (1) ↓ 1 (1) → Pulliam Rd 7 (0) ↑ 74 (44) → 1 (0) ↓

TABLE 32: LONG-TERM YEAR 2027 WITH PROJECT CONSTRUCTION WITH CUMULATIVE ROADWAY AND STATE ROUTE LOS

Segment	Classification (as built)	Year 2027 + Cumulative				Project Daily Volumes	Year 2027 + Cumulative + Project				
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Impact?
<u>Brockman Road</u>											
McCabe Rd to Kubler Rd	Major (2U)	637	7,100	0.09	A	262	899	7,100	0.13	A	None
<u>Forrester Road</u>											
I-8 to McCabe Rd	Prime (2U)	2,456	7,100	0.35	B	174	2,630	7,100	0.37	B	None
<u>Kubler Road</u>											
Brockman Rd to Ferrell Rd	Minor (2U)	83	7,100	0.01	A	262	345	7,100	0.05	A	None
<u>McCabe Road</u>											
Brockman Rd to Forrester Rd	Major (2U)	925	7,100	0.13	A	262	1,187	7,100	0.17	A	None
<u>Pulliam Road</u>											
Kubler Rd to SR-98	Minor (2U)	35	7,100	0.00	A	131	166	7,100	0.02	A	None
<u>SR-98</u>											
Drew Rd to Pulliam Rd	State Highway (2U)	2,503	7,100	0.35	B	153	2,656	7,100	0.37	B	None
Pulliam Rd to Brockman Rd	State Highway (2U)	2,503	7,100	0.35	B	109	2,612	7,100	0.37	B	None

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element. 2U = 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Impact? = type of impact (none, cumulative, or direct).

TABLE 33: LONG-TERM YEAR 2027 WITH PROJECT CONSTRUCTION WITH CUMULATIVE FREEWAY LOS

Freeway Segment	I-8 Dunaway Rd to Drew Rd				I-8 Forrester Rd to Imperial Ave			
	Forecasted Year 2027				Forecasted Year 2027			
ADT	16,700				20,600			
Peak Hour	A M				P M			
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4700	4700	4700	4700	4700	4700	4700	4700
K Factor (2)	0.1346	0.1346	0.1631	0.1631	0.1346	0.1346	0.1631	0.1631
D Factor (3)	0.4770	0.5230	0.4958	0.5042	0.4770	0.5230	0.4958	0.5042
Truck Factor (4)	0.8712	0.8712	0.8712	0.8712	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	1231	1349	1550	1576	1579	1731	1989	2022
Volume to Capacity	0.262	0.287	0.330	0.335	0.336	0.368	0.423	0.430
LOS	A	A	B	B	B	B	B	B
Cumulative + Project	248	385	435	282	237	582	643	280
Year 2027 + Cumulative + Project								
Peak Hour Volume	1479	1734	1985	1858	1816	2313	2632	2302
Volume to Capacity	0.315	0.369	0.422	0.395	0.386	0.492	0.560	0.490
LOS	B	B	B	B	B	C	C	B
Increase in V/C	0.053	0.082	0.093	0.060	0.050	0.124	0.137	0.060
Impact?	None	None	None	None	None	None	None	None

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2017 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2017 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2015 report). Impact? = Direct, Cumulative, or None.

Under long-term year 2027 + project construction + cumulative conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better with no cumulatively considerable impacts.

15.0 Horizon Year 2060 Conditions

The year 2060 was selected as the horizon year because it is 40 years past the earliest estimate (year 2019 construction peak with completion about a year later or 2020) of when the project may be constructed and decommissioned. Under the development agreement, the CUP will be valid for 40 years with up to 10 years to commence construction. At the conclusion of the CUP term (estimated at year 2059), the Project entitlements require the Applicant to decommission the site and restore it to farmland uses in accordance with a future reclamation Plan. Implementation of the future reclamation plan is anticipated to generate traffic on the roads in the vicinity of the Project from trucks that will remove solar panels and other infrastructure from the site after the 40 year CUP life. The traffic would also include the workers who travel to and from the site to perform the work. Nevertheless, after careful consideration of various methodologies for evaluating such traffic impacts, it is not possible to accurately forecast the traffic impacts for the following reasons:

- 1) There have been no solar projects decommissioned in Imperial County yet to provide a reference point for potential traffic impacts,
- 2) The near-term construction work force is based on the concentration of populations per the 2010 Census. The source and location of a horizon year 2060 construction work force cannot be estimated in the same manner; therefore, it would require speculation to determine where the construction work force would originate and the amount of workers from the local area (i.e. Imperial Valley) vs. the regional area (i.e. Los Angeles, San Diego, or Arizona),
- 3) Other solar projects on the cumulative project list in the vicinity may or may not be performing their own decommissioning phase activities at the same time. Many of these other solar projects have a 10 year extension option and it is not possible to estimate how many would exercise the option. Accordingly, only a guess could be made as to when the other cumulative projects would initiate their own decommissioning phases and thus would add traffic to the horizon year background conditions, and
- 4) The horizon year traffic model for Imperial County does not have horizon year volumes for the study area roadways around the project site nor does the traffic model have data for decommissioning scenarios.
- 5) The California Economic Forecast *California County-Level Economic Forecast 2015-2040*, dated September 2015 does not forecast beyond 2040.

Therefore, after a thorough investigation for reliable data and having used our best efforts to obtain and disclose all the information we reasonably can about traffic in the decommissioning phase, the only conclusion that can be drawn is that it is simply too speculative for evaluation.

16.0 Conclusions and Recommendations

The project is a solar photovoltaic energy-generating and energy storage facility of approximately 100 megawatts of electricity on approximately 855 gross acres and 762.8 net acres of lands that have been used for agriculture. The project is located approximately 6.5 miles southwest of the city of El Centro and approximately 7.5 miles west of Calexico, California.

The project consists of a construction phase, an operations phase and a decommissioning phase. The construction phase will have the highest amount of workers and greatest amount of traffic while the operations phase will have approximately 10 fulltime personnel. Therefore, the higher and more conservative construction trip generation was used to determine potential project impacts. The worker and construction truck traffic was calculated at 436 ADT with 147 AM peak hour trips (144 inbound and 3 outbound) and 147 PM peak hour trips (3 inbound and 144 outbound). The operations phase (after construction) is estimated to generate up to 20 ADT with approximately 2 AM and 2 PM peak hour trips.

The project may be constructed at one time taking approximately 18 months or it may be completed over a ten-year period. Under the development agreement, the CUP Permit will be valid for 40 years with up to 10 years to commence construction. If construction is to commence immediately after approvals, the project could have the highest concentration of workers in year 2019. If delayed due to market forces, the project could have the highest concentration of worker in year 2027. The project may also be phased (i.e. 20 MW constructed at a time or 1/5 of the overall project) that would result in a lower concentration of workers and less trip generation. However, to be conservative, the entire project (100 MW) was analyzed under year 2019 and year 2027 conditions, assuming a construction period of 18-months.

Information on cumulative projects was obtained from the County of Imperial and confirmed with the County of Imperial EIR team to be current as of November 2017. Cumulative projects that are located in the immediate area around the project site (i.e. projects that are generally located south of I-8 and west of Clark Road) were included in this analysis.

- 1) Under existing year 2017 conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS B or better.
- 2) Under existing year 2017 + project construction conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS B or better with no significant direct project impacts.
- 3) Under existing year 2017 + project construction + cumulative conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better with no cumulatively considerable impacts.
- 4) Under near-term year 2019 conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS B or better.
- 5) Under near-term year 2019 + project construction conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better with no significant direct project impacts.

- 6) Under near-term year 2019 + project construction + cumulative conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better with no cumulatively considerable impacts.
- 7) Under long-term year 2027 conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better.
- 8) Under long-term year 2027 + project construction conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better with no significant direct project impacts.
- 9) Under long-term year 2027 + project construction + cumulative conditions, the study intersections, roadways, State Route, and freeway were calculated to operate at LOS C or better with no cumulatively considerable impacts.

The project may be phased with construction occurring in years 2019 or 2027. As noted above for the various scenarios, there are no calculated traffic impacts under existing 2017 conditions, near-term 2019 conditions, or long-term 2027 conditions. Since these are no significant impact from long-term conditions of the entire project in these scenarios where other cumulative projects are generating traffic, we conclude that if the project were to be constructed either one CUP or a group of CUPs at a time phased out over the 10 years permitted by the Project's Development Agreement, then such phased-CUP construction would also not have a significant direct project impact or cumulatively considerable impact on traffic.

The year 2060 was selected as the horizon year because it is 41 years past the earliest estimate (year 2019 construction peak with completion about a year later or 2020) of when the project may be constructed and decommissioned. Under the development agreement, the CUP will be valid for 40 years with up to 10 years to commence construction. At the conclusion of the CUP term (estimated at year 2059), the Project entitlements require the Applicant to decommission the site and restore it to farmland uses in accordance with a future reclamation Plan. Implementation of the future reclamation plan is anticipated to generate traffic on the roads in the vicinity of the Project from trucks that will remove solar panels and other infrastructure from the site immediately after the 40 year CUP life. The traffic would also include the workers who travel to and from the site to perform the work. Nevertheless, after careful consideration of various methodologies for evaluating such traffic impacts, it is not possible to accurately forecast the traffic impacts related to decommissioning the project at this time. The only conclusion that can be drawn is that it is simply too speculative for evaluation.

17.0 References

Caltrans. December 2002. *Guide for the Preparation of Traffic Impact Studies*.

County of Imperial Department of Public Works. Dated March 12, 2007, revised June 29, 2007 and approved by the Board of Supervisors of the County of Imperial on August 7, 2007. *Traffic Study and Report Policy*.

Institute of Transportation Engineers, 1999. *Traffic Engineering Handbook, Fifth Edition*.

Imperial County Planning & Development Services Department. October 1, 2006. *Imperial County Circulation Element*.

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Appendix A

Excerpts from Imperial County's Traffic Study and Report Policy

COUNTY OF IMPERIAL

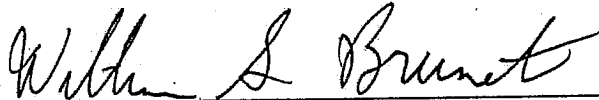
DEPARTMENT OF PUBLIC WORKS

TRAFFIC STUDY AND REPORT POLICY

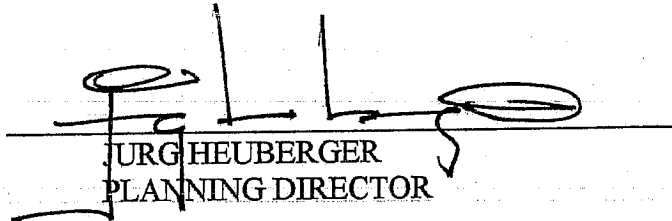
Date: March, 12, 2007

Revised June 29, 2007

APPROVALS:



WILLIAM S. BRUNET, P. E.
DIRECTOR OF PUBLIC WORKS
ROAD COMMISSIONER



JURG HEUBERGER
PLANNING DIRECTOR

necessary to develop a traffic report that determines whether the traffic study general criteria have been met.

In the case of significant development, it may be necessary to hold one or more scope of work meetings which would be attended by a ICPDS staff, the County Traffic Engineer or other County Advisory Staff, the individual who will be responsible for preparing the traffic study report and the Traffic and/or Civil Engineer responsible for the report and its recommendations. The individual preparing the traffic study should be familiar with the project site and the local conditions which may affect any final conclusions and recommendations.

Listed below are the basic criteria that will be used to make the determination for providing a complete traffic study as a part of the project review process. The criteria are not a complete or exhaustive list, but they are intended to define when such a report is to be prepared and to indicate the necessary components of the study report to be submitted.

1. General Criteria

- a. Any project that adds more than 8% of the total existing vehicle trips on the adjacent road system at full build-out of the project.
- b. Any project that generates more than 400 daily residential trip ends, 800 commercial or industrial trip ends or 200 peak hour trip ends, as determined by the average trip rates contained in the ITE Trip Generation Informational Report or the **Imperial County local exceptions in Section 2.**
- c. Any project that has the potential to degrade an existing road section, an existing signalized intersection, or an existing unsignalized intersection to below the existing level of service or to cause it to be lower than a level of service (LOS)

"C" during any peak hour, using the HCM Methods of analysis on any individual, existing traffic movement.

- d. Any project, within Section C. 1. b. above, which generates more than 10% of its total traffic in the form of truck traffic.
- e. Any project that intensifies the usage of the site above the level currently allowed by zoning codes and requires a GPA; and/or CUP, zone change, variance or other discretionary permit.
- f. Any project that may cause an existing or proposed intersection to meet traffic signal warrants or cause a proposed intersection to be lower than LOS "C."

2. Report Contents

Traffic Reports submitted for review and approval must contain the following items as a minimum:

- a. Total number of trips anticipated from the project based on the average trip generation rates as specified in this section for single family residential use or those contained in the ITE Trip Generation Informational Report for other residential, commercial and industrial uses for total build out of the project (minimum of 5 years), or by using fully documented (and previously approved by the County Engineer) data for a similar or like facility. Passer-by trips for commercial/retail projects will not be more than 35 percent of the total generated site traffic without Public Works/Engineering and Planning staff approval (see

Section B. above). Passer-by trips, over 35 percent and internal trips, over 5 percent, must be justified, if used. Reference to another report or another source of data will not be adequate justification.

For traffic studies carried out for presentation to the County of Imperial, single family residential trip generation of less than 10.0 trip ends per D.U. per weekday must be justified by documentation, including the age or maturity of the development producing the trip ends. Normally, new development, that is not fully an infill project, will have a trip generation rate of at least 10 trip ends per D.U. per weekday. Studies carried out by local agencies in other areas have shown the trip generation rate to be at least 15 trip ends per dwelling unit for a development at full occupancy (at project build out), at 10 years of age and at least 15 trip ends per D. U. at 20 years after build out. The local sample studies showed that a residential development trip generation rate may be as high as 20 trip ends per D.U. per weekday. The estimated build-out, 5-year or 20-year peak hour trip ends generation rate will be 1.55 for the a.m. peak hour, and the p.m. peak hour trip ends generation rate will be 1.68 trip ends per dwelling unit for the same single family residential use at 15.0 trip ends per dwelling unit per weekday. The County of Imperial requires the use of the local exceptions, unless the report preparer provides previously approved data to support using other rates. The I.T.E. Trip Generation Report will not be accepted for single family residential daily and peak hour trip ends per dwelling

unit, unless it is for urban infill development, within one half mile of major retail and commercial developmentt.

- b. Existing traffic on the adjacent road system and projected traffic on the adjacent road system, projected for a minimum of five (5) years, to project build-out, or both, depending on the project and the area; larger projects or high traffic generation may require future year build-out, currently Year 2030. Future CMP TIA reports would require additional traffic projection information.
- c. Traffic projections on the adjacent road system for both the project and "normal background growth" (demonstrated growth, as detailed in the general plan, or as agreed upon with County staff). Normally, traffic will be projected to Year 2030 or later for an updated future year condition.
- d. Traffic projections shall include the additional impact of undeveloped land or new development within an area surrounding the proposed development site (project) as agreed to by the County Director of Public Works, the County Planning Director and advisory staff.
- e. Projected impacts on intersections adjacent to or within the defined impact area of the project, using intersection capacity analysis - Highway Capacity Manual Operations Delay Method. Right turn-on-red volumes and changes in signal timing can be incorporated in a signalized intersection analysis, but any signal timing changes must be specifically identified in the study recommendations with additional cautions or impact conclusions identified if the timing changes are not

- m. Traffic counts, calculations, other basic information, and supporting data shall be included in an Appendix to the report or provided as a separate Technical Appendix. All actual traffic count data will be provided to the County in a useful summary form, digital and paper format, as specified by the County.

3. Analysis Methodology

The build-up method of traffic analysis will be followed, showing:

- a. Existing traffic;
- b. Existing traffic and normal background growth (rate and time to be agreed to by County staff);
- c. Existing traffic and normal background growth (see C. 3. b. above) and project build-out traffic;
- d. Existing traffic and normal background growth (see C. 3. b. above) and new development traffic (see C. 3. b. above);
- e. Existing traffic and 5 year normal background growth (see b. above) and new development (see b. above) and project build out, if longer than 5 years to build out of project.

If the study period to build-out is longer than 5 years, the future projection time period appropriate for a new development will be determined by the County staff. Significant projects may require a future projection time period of 20 years or General Plan build out. The future year is currently year 2030 as of the date of adopting this Policy. State Highway traffic projections will usually be carried to the year 2030 or to Caltrans current policy and procedures.

Appendix B

Excerpts from Caltrans' Guide for the Preparation of Traffic Impact Studies



**GUIDE FOR THE PREPARATION
OF
TRAFFIC IMPACT STUDIES**

**STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

December 2002

D. Travel Forecasting (Transportation Modeling)

The local or regional traffic model should reflect the most current land use and planned improvements (i.e., where programming or funding is secured). When a general plan build-out model is not available, the closest forecast model year to build-out should be used. If a traffic model is not available, historical growth rates and current trends can be used to project future traffic volumes. The TIS should clearly describe any changes made in the model to accommodate the analysis of a proposed project.

V. TRAFFIC IMPACT ANALYSIS METHODOLOGIES

Typically, the traffic analysis methodologies for the facility types indicated below are used by Caltrans and will be accepted without prior consultation. When a State highway has saturated flows, the use of a micro-simulation model is encouraged for the analysis (please note however, the micro-simulation model must be calibrated and validated for reliable results). Other analysis methods may be accepted, however, consultation between the lead agency, Caltrans and those preparing the TIS is recommended to agree on the data necessary for the analysis.

- A. Freeway Segments – Highway Capacity Manual (HCM)*, operational analysis
- B. Weaving Areas – Caltrans Highway Design Manual (HDM)
- C. Ramps and Ramp Junctions – HCM*, operational analysis or Caltrans HDM, Caltrans Ramp Metering Guidelines (most recent edition)
- D. Multi-Lane Highways – HCM*, operational analysis
- E. Two-lane Highways – HCM*, operational analysis
- F. Signalized Intersections⁸ – HCM*, Highway Capacity Software**, operational analysis, TRAFFIXTM**, Synchro**, see footnote 8
- G. Unsignalized Intersections – HCM*, operational analysis, Caltrans Traffic Manual for signal warrants if a signal is being considered
- H. Transit – HCM*, operational analysis
- I. Pedestrians – HCM*
- J. Bicycles – HCM*
- K. Caltrans Criteria/Warrants – Caltrans Traffic Manual (stop signs, traffic signals, freeway lighting, conventional highway lighting, school crossings)
- L. Channelization – Caltrans guidelines for Reconstruction of Intersections, August 1985, Ichiro Fukutome

*The most current edition of the Highway Capacity Manual, Transportation Research Board, National Research Council, should be used.

****NOTE:** Caltrans does not officially advocate the use of any special software. However, consistency with the HCM is advocated in most but not all cases. The Caltrans local development review units utilize the software mentioned above. If different software or analytical techniques are used for the TIS then consultation between the lead agency, Caltrans and those preparing the TIS is recommended. Results that are significantly different than those produced with the analytical techniques above should be challenged.

⁸ The procedures in the Highway Capacity Manual "do not explicitly address operations of closely spaced signalized intersections. Under such conditions, several unique characteristics must be considered, including spill-back potential from the downstream intersection to the upstream intersection, effects of downstream queues on upstream saturation flow rate, and unusual platoon dispersion or compression between intersections. An example of such closely spaced operations is signalized ramp terminals at urban interchanges. Queue interactions between closely spaced intersections may seriously distort the procedures in" the HCM.

Appendix C

Excerpts from Imperial County's Circulation and Scenic Highways Element

CIRCULATION AND SCENIC HIGHWAYS ELEMENT

**Prepared by:
Imperial County Planning & Development Services Department
801 Main Street
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in collaboration with the

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155 South 11th Street
El Centro, CA 92243**

**WILLIAM S. BRUNET, P.E.
Director of Public Works**

**JURG HEUBERGER, AICP
Planning & Development Services Director**

**Approved by:
Board of Supervisors
January 29, 2008**

**TABLE 5
IMPERIAL COUNTY STANDARD STREET CLASSIFICATION
AVERAGE DAILY VEHICLE TRIPS**

Road		Level of Service (LOS)				
Class	X-Section	A	B	C	D	E
Expressway	154/210	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
Local County (Residential)	40/60	*	*	<1,500	*	*
Local County (Residential Cul-de-Sac or Loop Street)	40/60	*	*	<200	*	*
Major Industrial Collector – (Industrial)	76/96	5,000	10,000	14,000	17,000	20,000
Industrial Local	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.						

Table 5 was originally developed for the County of San Diego by the San Diego County Department of Public Works in 1985 and compares ADT to levels of service (LOS) for various roadway classifications. Proposed functional classifications were then inserted into this table and right-of-way widths adjusted to match County of Imperial standards.

Transition Areas

The Circulation and Scenic Highways Element is the graphical reference guide which shows the present and planned street system, along with the classification of those streets. It is important to note that where there is a change from one classification to another along a certain street, the transition will occur in mid-block areas to preclude non-continuing lanes and intersections. The design criteria (design, speed, curve radii, etc.) for the higher classification shall generally take precedence through the transition area.

The capacity for SR-98 in the project vicinity is based on a 2 lane Local Collector as shown in Table 3 of the County's *Circulation and Scenic Highways Element* included on the following page.

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND
VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume ^a	Year 2005 ADT Volume ^a	Year 2025 ADT Volume ^c	25 Year Total Growth Factor ^d	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS ^e
State Route 86								
Imperial County Line/Desert Shores	State Hwy	N/A	12,900	21,138	1.28	27,500	Minor Arterial (4)	C
Desert Shores/Brawley Ave.	State Hwy	N/A	12,400	20,319	1.28	26,500	Collector (4)	C
Brawley Ave./S. Marina	State Hwy	N/A	13,400	21,957	1.28	28,500	Minor Arterial (4)	C
S. Marina/Air Park	State Hwy	N/A	12,100	19,827	1.64	33,000	Prime Arterial (6-divided)	B
Air Park/SR-78 West	State Hwy	N/A	10,800	17,697	1.64	29,500	Minor Arterial (4)	C
SR-78 West/Lack	State Hwy	N/A	10,800	17,890	1.64	29,500	Minor Arterial (4)	C
Lack/West Westmorland City Limits	State Hwy	N/A	10,200	19,650	1.64	32,500	Prime Arterial (6-divided)	B
E Westmorland C. Limits/W Brawley C. Limits	State Hwy	N/A	14,000	19,440	1.64	32,000	Prime Arterial (6-divided)	B
South Brawley City Limits/Legion	State Hwy	N/A	21,400	28,300	1.13	32,500	Prime Arterial (6-divided)	B
Legion/Keystone	State Hwy	N/A	19,100	27,940	1.13	32,000	Prime Arterial (6-divided)	B
Keystone/Imperial Ave.	State Hwy	N/A	14,700	27,980	1.13	32,000	Prime Arterial (6-divided)	B
I-8/McCabe	State Hwy	N/A	21,500	24,890	1.28	32,000	Prime Arterial (6-divided)	B
McCabe/Heber	State Hwy	N/A	7,100	26,100	1.28	33,500	Prime Arterial (6-divided)	B
Heber/Dogwood	State Hwy	N/A	7,500	26,100	1.28	33,500	Prime Arterial (6-divided)	B
Dogwood/SR-111	State Hwy	N/A	5,200	26,000	1.28	33,500	Prime Arterial (6-divided)	B
South Imperial City Limits/North El Centro City Limits	State Hwy	N/A	6,500	27,980	1.13	32,000	Prime Arterial (6-divided)	B
State Route 98								
Imperial Hwy/Drew	State Hwy	N/A	2,300	1,730	1.64	3,000	Local Collector (2)	B
Drew/Clark	State Hwy	N/A	3,800	5,350	1.64	9,000	Collector (4)	A
Clark/Dogwood	State Hwy	N/A	4,550	8,800	1.64	14,500	Collector (4)	B
Dogwood/West Calexico City Limits	State Hwy	N/A	9,800	24,180	1.64	31,500	Prime Arterial (6-divided)	B
East Calexico City Limits/Barbara Worth	State Hwy	N/A	24,400	26,000	1.64	33,500	Prime Arterial (6-divided)	B
Barbara Worth/Bonds Corner	State Hwy	N/A	16,300	26,000	1.64	33,500	Prime Arterial (6-divided)	B
Bonds Corner/E. Highline Canal	State Hwy	N/A	4,500	770	1.64	1,500	Local Collector (2)	A
E. Highline Canal/I-8	State Hwy	N/A	2,200	250	1.64	500	Local Collector (2)	A
State Route 111								
North Calexico City Limits	State Hwy	N/A	50,000	97,570	1.13	111,000	Freeway (8)	C
Heber/McCabe	State Hwy	N/A	33,500	98,650	1.13	112,000	Freeway (8)	C
McCabe/I-8	State Hwy	N/A	37,000	90,830	1.13	103,000	Freeway (8)	C
I-8/Evan Hewes Hwy	State Hwy	N/A	16,300	52,980	1.13	60,500	Expressway (6)	D
Evan Hewes/Aten	State Hwy	N/A	14,100	60,200	1.13	68,500	Expressway (6)	D
Aten/Worthington	State Hwy	N/A	11,300	58,160	1.13	66,000	Expressway (6)	D
Worthington/Keystone	State Hwy	N/A	10,600	58,710	1.13	67,000	Expressway (6)	D
Keystone/E. Junction 78	State Hwy	N/A	9,300	57,590	1.13	65,500	Expressway (6)	D
North Brawley City Limits/Rutherford	State Hwy	N/A	9,500	18,510	1.64	30,500	Prime Arterial (6-divided)	B
Rutherford/South Calipatria City Limits	State Hwy	N/A	6,600	18,560	1.64	30,500	Prime Arterial (6-divided)	B
North Calipatria City Limits/Sinclair	State Hwy	N/A	5,700	15,640	1.64	26,000	Minor Arterial (4)	C
Sinclair/Niland Ave	State Hwy	N/A	5,100	13,532	1.64	22,500	Collector (4)	B
Niland Ave/English	State Hwy	N/A	3,700	9,817	1.64	16,500	Collector (4)	B
English/Bombay Beach	State Hwy	N/A	2,300	6,103	1.64	10,500	Collector (4)	A
Bombay Beach/Imperial-Riverside County line	State Hwy	N/A	1,900	5,041	1.64	8,500	Collector (4)	A
State Route 115								
Junction I-8/East Holtville City Limits	State Hwy	N/A	1,850	4,140	1.64	7,000	Local Collector (2)	C
West Holtville City Limits/West Junction Evan Hewes Hwy	State Hwy	N/A	6,600	8,320	1.64	14,000	Collector (4)	B
West Junction Evan Hewes Hwy/SR-78	State Hwy	N/A	2,850	27,870	1.13	32,000	Prime Arterial (6-divided)	B
SR-78/Rutherford	State Hwy	N/A	990	13,450	1.64	22,500	Minor Arterial (4)	B
Rutherford/Wirt	State Hwy	N/A	1,650	9,720	1.64	16,000	Collector (4)	B
Wirt/East Calipatria City Limits	State Hwy	N/A	1,150	9,240	1.64	15,500	Collector (4)	B
State Route 186								
I-8/International Border	State Hwy	N/A					State Hwy	

Notes:

* See Table 1 regarding additional right-of-way for transit facility with roadway.

a. Volume from Imperial County Circulation and Scenic Highways Element Manual (Dec. 2003).

b. Volume from Caltrans, Imperial County, or Linscott Law & Greenspan, Engineers counts.

c. Volumes from Caltrans CalxGP+ Model and adjusted higher in some cases.

d. A 0.5%, 1.0%, or 2.0% annual growth rate was applied to the Year 2025 volumes to obtain Year 2050 volumes.

e. Capacity based on the Imperial County Classification Table (depending on the Year 2050 volume amount).

Appendix D

Excerpts from Caltrans' Guide for the Preparation of Traffic Impact Studies



**GUIDE FOR THE PREPARATION
OF
TRAFFIC IMPACT STUDIES**

**STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

December 2002

Transition between LOS "C" and LOS "D" Criteria

(Reference Highway Capacity Manual)

BASIC FREEWAY SEGMENTS @ 65 mi/hr

LOS	Maximum Density (pc/mi/ln)	Minimum Speed (mph)	Maximum v/c	Maximum Service Flow Rate (pc/hr/ln)
A	11	65.0	0.30	710
B	18	65.0	0.50	1170
C	26	64.6	0.71	1680
D	35	59.7	0.89	2090
E	45	52.2	1.00	2350

SIGNALIZED INTERSECTIONS and RAMP TERMINALS

LOS	Control Delay per Vehicle (sec/veh)
A	≤ 10
B	> 10 - 20
C	> 20 - 35
D	> 35 - 55
E	> 55 - 80
F	> 80

MULTI-LANE HIGHWAYS @ 55 mi/hr

LOS	Maximum Density (pc/mi/ln)	Minimum Speed (mph)	Maximum v/c	Maximum Service Flow Rate (pc/hr/ln)
A	11	55.0	0.29	600
B	18	55.0	0.47	990
C	26	54.9	0.68	1430
D	35	52.9	0.88	1850
E	41	51.2	1.00	2100

..... Dotted line represents the transition between LOS "C" and LOS "D"

Appendix E

Excerpts of Significance Criteria from Imperial County's Circulation Element

CIRCULATION AND SCENIC HIGHWAYS ELEMENT

**Prepared by:
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**WILLIAM S. BRUNET, P.E.
Director of Public Works**

**JURG HEUBERGER, AICP
Planning & Development Services Director**

**Approved by:
Board of Supervisors
January 29, 2008**

The County Director of Public Works shall review these transition areas and provide guidance in achieving this policy.

c. New or enlarged Roads:

Local Roads

The County shall require all new developments to provide for local roads to serve the direct access needs of abutting property. These streets should be designed with a discontinuous pattern to discourage through traffic. They generally should not intersect with arterial street classifications. Typical design features include two travel lanes with parking on both sides of the street. Local roads include loop streets and cul-de-sacs.

Regional Roads (Roads beyond the actual development project)

The County shall require that all new developments participate in the improvement of regional roads that may be impacted by the proposed development. The extent to which a project impacts regional roads is generally determined by a traffic study. In some cases however the County may have predetermined improvement requirements for certain road segments or road intersections. The new developments will be required to either make certain regional improvements or in the alternative contribute a “fair share” towards the cost of such improvements.

d. Level of Service Standards

As the County continues to grow, transportation demand management and systems management will be necessary to preserve and increase available roadway “capacity”. Level of Service (LOS) standards are used to assess the performance of a street or highway system and the capacity of a roadway.

An important goal when planning the transportation system is to maintain acceptable levels of service along the federal and state highways and the local roadway network. To accomplish this, the California Department of Transportation (Caltrans), Imperial County and local agencies adopt minimum levels of service to determine future infrastructure needs.

Imperial County must provide and maintain a highway system with adequate capacity and acceptable levels of service to accommodate projected travel demands associated with the projected population growth within the Land Use Element. This can be accomplished by establishing minimum service levels for the designated street and conventional state highway system. Strategies that result in improvements to the transportation system, coupled with local job creation, will allow County residents to have access to a wide range of job opportunities within reasonable commute times.

The County's goal for an acceptable traffic service standard on an ADT basis and during AM and PM peak periods for all County-Maintained Roads shall be LOS C for all street segment links and intersections. These service values are defined by the 1985 or 2000 edition of the *Highway Capacity Manual* or any subsequent edition thereof. This policy shall acknowledge that the aforementioned level of service standards may not be obtainable on some existing facilities where abutting development precludes acquisition of additional right-of-way needed for changes in facility classification.

In order to achieve the level of service goals in the previous policy, the County shall develop and institute a long-range funding program in which new land development shall bear the major burden of the associated costs and improvement requirements.

e. Design Standards

The County shall adopt design standards for all streets in accordance with their functional classifications and recognized design guidelines. In developing these standards, the County shall consider the design standards of Caltrans and the American Association of State and Highway Transportation Officials (AASHTO). All streets within the County shall be designed in accordance with the adopted County of Imperial Design Standards. Typical cross sections and design criteria for the various street classifications are shown as an attachment to this document.

f. Private Streets

The County may permit construction of private streets within individual development projects (gated community). providing the following are addressed:

- They are designed geometrically and structurally to meet County standards.
- Only project occupants are served (gated community).
- Emergency vehicle access requirements are satisfied.
- The streets do not provide a direct through route between public streets.
- The Homeowners Associations and/or property owners provide an acceptable program for financing regular street maintenance.
- If the private street is permitted with a waiver of any of the above standards, any future requests to make the private street a public street shall require that all adjacent property owners provide and pay for all improvements and right of way required to bring the street to current public street or road standards. This includes road width, right of way widths and structural section. In no circumstance shall the County pay for any costs to upgrade a private street to public street standards if the above-mentioned requirements were waived at the request of the original developer or subdivider.

Appendix F

Traffic Impact Significance Criteria from Imperial area EIRs

4.6.2 Impact Significance Criteria

Significance Criteria

The significance criteria summarized in Table 4.6-2 by Linscott, Law and Greenspan Engineers is based upon the City of El Centro and the County of Imperial's goal for intersections and roadway segments to operate at LOS C or better. In general, a degradation in LOS from LOS C or better to LOS D or worse is considered a significant direct impact. A cumulative impact can occur if the intersection or segment LOS is already operating below City/County standards and the project increases the delay by more than 2 seconds or the v/c ratio by more than 0.02.

Table 4.6-2 Significance Criteria			
INTERSECTIONS			
Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
LOS ¹ C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	-	Direct
LOS D	LOS E or F	-	Direct
LOS E	LOS F	-	Direct
Any LOS	Project does not degrade LOS and adds > 2.0 seconds of delay	LOS E or worse	Cumulative
Any LOS	Project does not degrade LOS and adds < 2.0 seconds of delay	Any LOS	None
SEGMENTS			
Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	-	Direct ²
LOS D	LOS E or F	-	Direct
LOS E	LOS F	-	Direct
Any LOS	LOS E or worse and v/c ³ > 0.02	LOS E or worse	Cumulative
Any LOS	LOS E or worse and v/c ³ < 0.02	Any LOS	None

Source: Linscott, Law & Greenspan, Engineers (July 2004)

Notes:

1. LOS: Level of Service
2. Exception: post-project segment operation is D and intersections along segment are D or better, no significant impact.
3. V/C: Volume to Capacity Ratio

In addition the project would have a significant impact if:

- It would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

5.0 SIGNIFICANCE CRITERIA

TABLE 5.1
SIGNIFICANCE CRITERIA

Intersections			
Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS C or better and project adds < 2.0 seconds of delay	LOS D or worse	None
LOS C or better	LOS C or better and project adds > 2.0 seconds of delay	LOS D or worse	Cumulative
LOS C or better	LOS D or worse	LOS D or worse	Direct
LOS D	LOS D and project adds < 2.0 seconds of delay	LOS D or worse	None
LOS D	LOS D and project adds > 2.0 seconds of delay	LOS D or worse	Cumulative
LOS D	LOS E or F	LOS E or F	Direct
LOS E	LOS E and project adds < 2.0 seconds of delay	LOS E or F	None
LOS E	LOS E and project adds > 2.0 seconds of delay	LOS E or F	Cumulative
LOS E	LOS F	LOS F	Direct
LOS F	Project add < 2.0 seconds of delay	LOS F	None
LOS F	Project adds 2.0 to 9.9 seconds of delay	LOS F	Cumulative
LOS F	Project adds 10.0 or more seconds of delay	LOS F	Direct
Segments			
Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS or better and project increases V/C by < 0.02	LOS D or worse	None
LOS C or better	LOS C or better and project increase V/C by > 0.02	LOS D or worse	Cumulative
LOS C or better	LOS D or worse	LOS D or worse	Direct ¹
LOS D	LOS D and project increases V/C by < 0.02	LOS D or worse	None
LOS D	LOS D and project increases V/C by > 0.02	LOS D or worse	Cumulative
LOS D	LOS E or F	LOS E or F	Direct
LOS E	LOS E and project increases V/C by < 0.02	LOS E or F	None
LOS E	LOS E and project increases V/C by > 0.02	LOS E or F	Cumulative
LOS E	LOS F	LOS F	Direct
LOS F	Project increases V/C by < 0.02	LOS F	None
LOS F	Project increases V/C by > 0.02 and < 0.09	LOS F	Cumulative
LOS F	Project increases V/C by > 0.09	LOS F	Direct

Notes: LOS = Level of Service; V/C = Volume to Capacity Ratio; ¹ Exception: If Existing + Project segment operation is LOS D and intersections along segment are LOS D or better, then there is no significant impact.

In addition to the above listed projects, the Lerno/Verhaegen project was recently submitted and is currently starting the CEQA process. This project is listed for information purposes but cannot be analyzed in cumulative terms. The following is a brief description based on the limited information available for this project.

Lerno-Verhaegen Specific Plan is proposed to be a mixed-use development of 2,708 dwelling units. The project consists of 680 acres on the west side of the City of El Centro. The project includes a zone change, Tentative Map, an amendment of the City's General Plan and an annexation.

Individual traffic assignments were completed for each cumulative project. Figure 2-7 depicts the total cumulative project traffic volumes in the area. Figure 2-8 shows the existing + project + cumulative projects traffic volumes for the vicinity. Appendix D of this Mitigated Negative Declaration contains the individual cumulative project traffic assignments.

Significance Criteria

The significance criteria summarized in Table 2-7 by Linscott, Law and Greenspan, engineers is based upon the County of Imperial's goal for intersections and roadway segments to operate at LOS C or better. Intersections or segments operating at LOS D, E or F are unacceptable and therefore constitute a significant impact.

Table 2-7 – Significance Criteria			
INTERSECTIONS			
Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
LOS ¹ C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	-	Direct
LOS D	LOS E or F	-	Direct
LOS E	LOS F	-	Direct
Any LOS	Project does not degrade LOS and adds > 2.0 seconds of delay	LOS E or worse	Cumulative
Any LOS	Project does not degrade LOS and adds < 2.0 seconds of delay	Any LOS	None
SEGMENTS			
Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	-	Direct ²
LOS D	LOS E or F	-	Direct
LOS E	LOS F	-	Direct
Any LOS	LOS E or worse and v/c ³ > 0.02	LOS E or worse	Cumulative
Any LOS	LOS E or worse and v/c ³ < 0.02	Any LOS	None

Source: LL&G, July 2004.

Notes:

1. LOS: Level of Service
2. Exception: post-project segment operation is D and intersections along segment are D or better, no significant impact.
3. V/C: Volume to Capacity Ratio

**TABLE 5-1
SIGNIFICANCE CRITERIA**

INTERSECTIONS			
Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
LOS ^a C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	—	Direct
LOS D	LOS D and adds 2.0 seconds or more of delay	LOS D or worse	Cumulative
LOS D	LOS E or F	—	Direct
LOS E	LOS F	—	Direct
LOS F	LOS F and delay increases by ≥ 10.0 seconds	LOS F	Direct
Any LOS	Project does not degrade LOS and adds 2.0 to 9.9 seconds of delay	LOS E or worse	Cumulative
Any LOS	Project does not degrade LOS and adds < 2.0 seconds of delay	Any LOS	None
SEGMENTS			
Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS C or better and $v/c^b > 0.02$	LOS D or worse	Cumulative
LOS C or better	LOS D or worse	—	Direct
LOS D	LOS D and $v/c > 0.02$	LOS D or worse	Cumulative
LOS D	LOS E or F	—	Direct
LOS E	LOS F	—	Direct
LOS F	LOS F and v/c increases by > 0.09	LOS F	Direct
Any LOS	LOS E or worse and v/c 0.02 to 0.09	LOS E or worse	Cumulative
Any LOS	LOS E or worse and $v/c < 0.02$	Any LOS	None

Source: Linscott, Law & Greenspan, Engineers

Footnotes:

a. Level of Service

b. Volume to Capacity Ratio

Appendix G

Excerpts of Existing Roadway Systems and Classifications from Imperial County Circulation Element

CIRCULATION AND SCENIC HIGHWAYS ELEMENT

**Prepared by:
Imperial County Planning & Development Services Department
801 Main Street
El Centro, CA 92243**

in collaboration with the

**Imperial County Public Works Department
155 South 11th Street
El Centro, CA 92243**

**WILLIAM S. BRUNET, P.E.
Director of Public Works**

**JURG HEUBERGER, AICP
Planning & Development Services Director**

**Approved by:
Board of Supervisors
January 29, 2008**

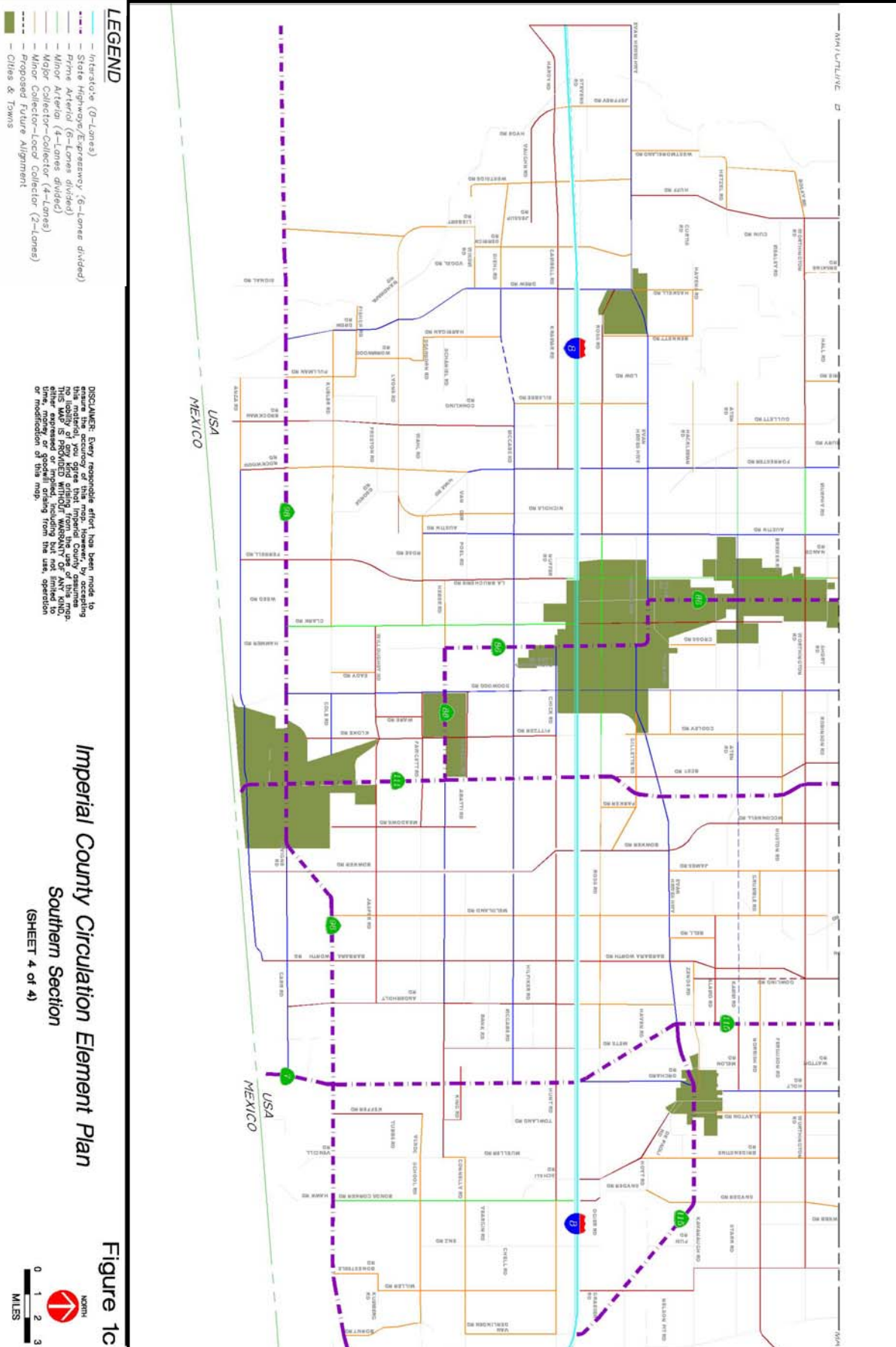


TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND VOLUMES

Segment Location	2003 Classification	Year 2002 ADT Volume ^a	Year 2005 ADT Volume ^a	Year 2025 ADT Volume ^c	25 Year Total Growth Factor ^d	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS ^e
Alamo Road								
Meloland/SR-115	Major Collector						Major Collector (4)	
Albright Road								
SR-111/SR-115	Minor Collector						Minor Collector (2)	
SR-115/Butters	Major Collector						Major Collector (4)	
Anderholt Road								
Evan Hewes (S-80)/Hunt	Minor Collector						Minor Collector (2)	
Hunt/Carr	Major Collector						Major Collector (4)	
Andre Road								
Forrester/End	Minor Collector						Minor Collector (2)	
Anza Road								
Pulliam/Rockwood	Local						Minor Collector (2)	
Rockwood/Calexico	Prime Arterial						Prime Arterial (6-divided)	
Calexico/Barbara Worth	Prime Arterial						Prime Arterial (6-divided)	
Aten Road								
End/Forrester	Minor Collector						Minor Collector (2)	
Forrester/Austin	Minor Arterial						Minor Arterial (6-divided)	
East Imperial City Limits/Dogwood	Prime Arterial	7,300	8,450	39,000	1.13	44,500	Prime Arterial (6-divided)	C
Dogwood/SR-111	Prime Arterial						Prime Arterial (6-divided)	
Proposed/SR-111/River	None						Prime Arterial (6-divided)	
Austin Road								
McCabe/Wahl	Local						Prime Arterial (6-divided)	
Proposed Wahl/SR-98	None						Prime Arterial (6-divided)	
Evan Hewes Hwy/McCabe	Major Collector						Prime Arterial (6-divided)	
Aten/Evan Hewes Hwy	Minor Arterial						Prime Arterial (6-divided)	
Keystone/Aten	Major Collector						Prime Arterial (6-divided)	
SR-86/Keystone	Minor Collector						Prime Arterial (6-divided)	
Bannister Road								
SR-86/Brandt	Major Collector						Major Collector (4)	
Barbara Worth Road								
Zenos/Evan Hewes (S-80)	Minor Collector						Major Collector (4)	
Evan Hewes Hwy/Anza	Major Collector						Major Collector (4)	
Baughman Road								
Garvey/Lack	Minor Collector						Minor Collector (2)	
Lack/SR-86	Major Collector						Major Collector (4)	
Bell Road								
Alamo/Evan Hewes Hwy	Minor Collector						Minor Collector (2)	
Bennett Road								
Havens/Ross	Minor Collector						Minor Collector (2)	
Best Road								
Rutherford/Brawley	Minor Arterial						Minor Arterial (4)	
Blair Road								
Pound/Sinclair	Minor Collector						Minor Collector (2)	
Peterson/Lindsey	Major Collector						Major Collector (4)	
Lindsey/SR-115	Major Collector						Major Collector (4)	
SR-115/Yocum	Local						Major Collector (4)	
Blais Road								
Wieman/Forrester	Minor Collector						Minor Collector	
Boarts Road (S26)								
Westmorland/Kalin	Major Collector						Major Collector (4)	
Boley Road								
Westmorland/Huff	Minor Collector						Minor Collector (2)	
Bonds Corner Road								
Holtville/I-8	Major Collector						Major Collector (4)	
I-8/SR-98	Minor Arterial						Minor Arterial (4)	
Bonesteel Road								
Kumborg/SR-98	Minor Collector						Minor Collector (2)	
Bornt Road								
Verde School/SR-98	Minor Collector						Minor Collector (2)	
Bowker Road								
Evan Hewes Hwy/I-8	Major Collector						Major Collector (4)	
I-8/SR-98	Minor Arterial						Expressway (6)	
SR-98/Anza	None						Minor Arterial (4)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND
VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume ^a	Year 2005 ADT Volume ^a	Year 2025 ADT Volume ^c	25 Year Total Growth Factor ^d	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS ^e
Bowles Road								
Riley/Lyerly	Minor Collector						Minor Collector (2)	
Boyd Road								
Wiest/SR-78	Local						Minor Collector (2)	
SR-115/Highline	Local						Minor Collector (2)	
Highline/End	Minor Collector						Minor Collector (2)	
Brandt Road								
Sinclair/Lindsey	Local						Minor Collector (2)	
Lindsey/Eddins	Minor Collector						Minor Collector (2)	
Eddins/Webster	Minor Collector						Minor Collector (2)	
Bridenstein Road								
Proposed SR-78/Hartshorn							Minor Collector (2)	
Hartshorn/Bonds Corner	Minor Collector						Minor Collector (2)	
Brockman Road (S30)								
McCabe/SR-98	Major Collector						Major Collector (4)	
Butters Road (S32)								
Gonder/SR-78	Prime Arterial						Prime Arterial (6)	A
Bowles/Albright	Local						Major Collector (4)	
Albright/SR-78	Major Collector						Major Collector (4)	
Cady Road								
Pellet/SR-86	Major Collector						Major Collector (4)	
Cambell Road								
Jessup/Derrick	Major Collector						Major Collector (4)	
Derrick/Drew	Major Collector						Major Collector (4)	
Carey Road								
SR-86/Dogwood	Minor Collector						Minor Collector (2)	
Carr Road								
Barbara Worth/SR-7	Major Collector						Minor Arterial (4)	
Carter Road								
Kalin/Forrester	Minor Collector						Major Collector (4)	
Casey Road								
Dickerman/SR-78	Minor Collector						Minor Collector (2)	
SR-78/Worthington	Minor Collector						Major Collector (4)	
Proposed Worthington/Norrish	None						Major Collector (4)	
Chick Road								
El Centro/Pitzer	Prime Arterial						Prime Arterial (6)	
Pitzer/Barbara Worth	Major Collector						Major Collector (4)	
Clark Road								
El Centro/SR-98	Minor Arterial						Minor Arterial (4)	
North El Centro City Limits/Worthington	Major Collector	2,100	2,430	12,550	1.64	21,000	Major Collector (4)	B
Worthington/Larsen	Minor Collector	800	930	6,220	1.64	10,500	Major Collector (4)	A
Cole Road								
Dogwood/Calexico	Prime Arterial						Prime Arterial (6-divided)	
East Calexico City Limits/SR-98	Minor Arterial	9,700	11,230	18,340	1.64	30,500	Prime Arterial (6-divided)	B
Connelly Road								
Vencill/Van Der Linden	Minor Collector						Minor Collector (2)	
Cooley Road								
Worthington/Gillett	Minor Collector						Minor Collector (2)	
Corn Road								
Bowles/Eddins	Minor Collector						Minor Collector (2)	
Correll Road								
Dogwood/SR 111	Minor Arterial						Minor Arterial (4)	
Cross Road								
Imperial (City)/Villa	Minor Collector						Minor Collector (2)	
Davis Road								
Gillespie/Schrimpf	Major Collector						Major Collector (4)	
Proposed Schrimpf/Sinclair	Major Collector						Major Collector (4)	
Dearborn Road								
Harrigan/Wormwood	Minor Collector						Minor Collector (2)	
Derrick Road								
Evan Hewes Hwy/Wixom	Minor Collector						Minor Collector (2)	
Dickerman Road								
SR-115/Butters	Minor Collector						Minor Collector (2)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND
VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume ^a	Year 2005 ADT Volume ^a	Year 2025 ADT Volume ^c	25 Year Total Growth Factor ^d	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS ^e
Diehl Road								
Westside/Drew	Minor Collector						Minor Collector (2)	
Drew/Harrigan	Major Collector						Prime Arterial (6)	
Proposed Harrigan/Silsbee	Major Collector						Prime Arterial (6)	
Dietrich Road								
Rutherford/Shank	Minor Collector						Major Collector (4)	
Proposed Shank/SR-78	None						Major Collector (4)	
Doetsch Road								
Elder/SR-86	Minor Collector						Minor Collector (2)	
Dogwood Road (S31)*								
Proposed Lindsey/Hovley	None						Prime Arterial (6-divided)	
Brawley/SR-98	Prime Arterial						Prime Arterial (6-divided)	
Dowden Road								
Proposed Forrester/Gentry	None						Local Collector (2)	
Gentry/Kershaw	None						Prime Arterial (6)	
Kershaw/Butters	Minor Collector						Prime Arterial (6)	
Drew Road (S29)								
Evan Hewes/SR-98	Prime Arterial						Prime Arterial (6-divided)	
Dunaway Road								
I-8/Evan Hewes Hwy	Major Collector	900	1,040	2,756	1.64	4,500	Major Collector (4)	A
Eady Road								
Willoughby/Cole	Minor Collector						Minor Collector (2)	
Eddins Road (S30)								
Gentry/SR-111(Calipatria City Limits)	Major Collector						Major Collector (4)	
Edgar Road								
Pierle/Forrester	Minor Collector						Minor Collector (2)	
Elder Road								
Doetsch/Cady	Minor Collector						Minor Collector (2)	
English Road								
Sinclair/Wilkins	Minor Collector						Minor Collector (2)	
Erskine Road								
Wheeler/Payne	Minor Collector						Minor Collector	
Evan Hewes Hwy (S80)								
Imperial Hwy/El Centro	Prime Arterial						Prime Arterial (6-divided)	
El Centro/SR-115	Prime Arterial						Prime Arterial (6-divided)	
SR-115/End	Prime Arterial						Prime Arterial (6-divided)	
Fawcett Road								
Dogwood/Meadows	Minor Collector						Major Collector (4)	
Ferrell Road								
Kubler/SR-98	Major Collector						Major Collector (4)	
SR-98/Anza	Minor Collector						Minor Collector (2)	
Fiffield Road								
SR-78/Streiby	Minor Collector						Minor Collector (2)	
Fisher Road								
Drew/Pulliam	Minor Collector						Minor Collector (2)	
Flett Road								
Wilkinson/Wirt	Minor Collector						Minor Collector (2)	
Forrester Road (S30)								
Proposed Sinclair/Walker	None						Prime Arterial (6-divided)	
Walker/Westmorland	Major Collector						Prime Arterial (6-divided)	
Westmorland/McCabe	Prime Arterial						Prime Arterial (6-divided)	
McCabe/Hime	Minor Collector						Prime Arterial (6-divided)	
Proposed Hime/River	Minor Collector						Prime Arterial (6-divided)	
North Westmorland City Limits/Gentry	Major Collector	1,200	1,390	9,000	1.64	15,000	Prime Arterial (6-divided)	A
Foulds Road								
Pellet/Lack	Minor Collector						Minor Collector (2)	
Fredericks Road								
Loveland/SR-111	Minor Collector						Minor Collector (2)	
Frontage Road								
Ross/Brawley (City)	Major Collector						Major Collector (4)	
Garst Road								
Sinclair/McDonald	Minor Collector						Minor Collector (2)	
Garvey Road								
Baughman/Andre	Minor Collector						Minor Collector (2)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND
VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume ^a	Year 2005 ADT Volume ^a	Year 2025 ADT Volume ^c	25 Year Total Growth Factor ^d	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS ^e
Gentry Road								
Sinclair/Walker	Major Collector						Major Collector (4)	
Gillespie Road								
Davis/Wilkins	Minor Collector						Minor Collector (2)	
Gillett Road								
Cooley/Bowker	Minor Collector						Minor Collector (2)	
Gonder Road								
Proposed New River/SR-115	None						Major Collector (4)	
SR-115/Butters	Local						Minor Collector (2)	
Butters/Green	Minor Collector						Minor Collector (2)	
Green/Highline	Major Collector						Major Collector (4)	
Gowling Road								
Norrish/Zenos	Minor Collector						Major Collector (4)	
Green Road								
SR-78/Gonder	Major Collector						Major Collector (4)	
Griffin Road								
Wiest/SR-115	Minor Collector						Minor Collector (2)	
Grumbles Road								
James/Meloland	Minor Collector						Minor Collector (2)	
Gullett Road								
Worthington/Aten	Minor Collector						Minor Collector (2)	
Gutherie Road								
Wiener/Worthington	Minor Collector						Minor Collector (2)	
Proposed Worthington/Hackleman	Minor Collector						Minor Collector (2)	
Hackleman Road								
Low/Forrester	Minor Collector						Minor Collector (2)	
Hardy Road								
Dunaway/Jeffrey	Major Collector						Major Collector (4)	
Jeffrey/Hyde	Major Collector						Major Collector (4)	
Hyde/Jessup	Major Collector						Major Collector (4)	
Harrigan Road								
Diehl/Dearborn	Minor Collector						Minor Collector (2)	
Harris Road								
Austin/SR-86	Local						Major Collector (4)	
SR-86/McConnel	Major Collector						Major Collector (4)	
McConnell/Highline	Minor Collector						Major Collector (4)	
Hart Road								
Wiest/SR-115	Minor Collector						Minor Collector (2)	
Hartshorn Road								
Bridenstein/Proposed Bridenstein	Minor Collector						Minor Collector	
Haskell Road								
Evan Hewes Hwy/End	Minor Collector						Minor Collector (2)	
Hastain Road								
Taecker/SR-78	Minor Collector						Minor Collector (2)	
Young/Dickerman	Minor Collector						Minor Collector (2)	
Havens Road								
Haskell/Bennett	Minor Collector						Minor Collector (2)	
Hetzel Road								
Westmorland/Huff	Minor Collector						Minor Collector (2)	
Heber Road								
La Brucherie/SR-86	Local						Minor Collector (2)	
SR-111/Anderholt	Minor Arterial	N/A	2,040	16,700	1.64	27,500	Prime Arterial (6-divided)	B
Anderholt/Keffer	Major Collector						Major Collector (4)	
Keffer/Vencill	Minor Collector						Major Collector (4)	
Highline Road (S33)								
Proposed SR-78/Gonder	None						Major Collector (4)	
Gonder/Kavanaugh	Major Collector						Major Collector (4)	
Proposed Kavanaugh/I-8	None						Major Collector (4)	
Holt Road. (S32)								
Gonder/Holtville city limits	Prime Arterial						Prime Arterial (6-divided)	
Hoskins Road								
SR-86/Steiner	Minor Collector						Minor Collector	
Hovley Road								
Rutherford/Brawley	Major Collector						Major Collector (4)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND
VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume ^a	Year 2005 ADT Volume ^a	Year 2025 ADT Volume ^c	25 Year Total Growth Factor ^d	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS ^e
Huff Road								
Imler/Evan Hewes Hwy	Major Collector						Major Collector (4)	
Hunt Road								
Barbara Worth/Bonds Corner	Major Collector						Major Collector (4)	
Bonds Corner/Van Der Linden	Minor Collector						Minor Collector (2)	
Huston Road								
Dogwood/McConnell	Minor Collector						Minor Collector (2)	
Imler Road								
Huff/Forrester	Major Collector						Major Collector (4)	
International Road								
Noffsinger/Pound	Minor Collector						Minor Collector (2)	
Irvine Road								
Shank/End	Minor Collector						Minor Collector (2)	
James Road								
Ralph/Evan Hewes Hwy	Minor Collector						Minor Collector (2)	
Jasper Road								
Calexico/Anderholt	Major Collector						Expressway (6)	
Proposed Anderholt/ SR-7	None						Expressway (6)	
Jeffery Road								
Evan Hewes Hwy/Hardy	Minor Collector						Minor Collector (2)	
Kaiser Road								
Wirt/Albright	Minor Collector						Minor Collector (2)	
Kalin (S26)								
Sinclair/SR-78/86	Major Collector						Major Collector (4)	
SR-78/86/Webster	Minor Collector						Minor Collector (4)	
Kamm Road								
River/SR-115	Local						Prime Arterial (6)	
SR-115/Holt	Minor Collector						Major Collector (4)	
Keffer Road								
SR-98/King	Major Collector						Major Collector (4)	
Kershaw Road								
Yocum/Rutherford	Minor Collector						Minor Collector (2)	
Keystone Road (S27)								
Forrester/SR-111	Prime Arterial						Expressway (6)	
SR-111/Highline	Major Collector						Expressway (6)	
King Road								
Orchard/Keffer	Major Collector						Major Collector (4)	
Kloke Road								
Willoughby/Calexico	Major Collector						Major Collector (4)	
Kramar Road								
Drew/Forrester	Major Collector						Major Collector (4)	
Kubler Road								
Drew/Clark	Minor Collector						Minor Collector (2)	
Kumberg Road								
Bonesteel/Miller	Minor Collector						Minor Collector (2)	
La Brucherie Road								
El Centro city limits/Kubler	Major Collector						Major Collector (4)	
Larsen/Murphy	Minor Collector						Minor Collector (2)	
Murphy/Imperial city limits	Minor Collector						Minor Collector (2)	
Lack Road								
Lindsey/Blais	Minor Collector						Minor Collector (2)	
Larsen Road								
Forrester/SR-86	Major Collector						Major Collector (4)	
SR-86/Clark	Minor Collector						Minor Collector (2)	
Lavigne Road								
SR-98/Bowker	Prime Arterial						Prime Arterial (6)	
Proposed Bowker/Barbara Worth	Prime Arterial						Prime Arterial (6)	
Liebert Road								
Wixom/Rd 8018	Minor Collector						Minor Collector (2)	
Proposed Road 8018/SR-98	Minor Collector						Minor Collector (2)	
Lindsey Road								
Lack/Wiest	Minor Collector						Minor Collector (2)	
Loveland Road								
Fredericks/Monte	Minor Collector						Minor Collector (2)	
Low Road								
Hackleman/Evan Hewes Hwy	Minor Collector						Minor Collector (2)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND
VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume ^a	Year 2005 ADT Volume ^a	Year 2025 ADT Volume ^c	25 Year Total Growth Factor ^d	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS ^e
Lyerly Road								
Bowles/Eddins	Minor Collector						Minor Collector (2)	
Lyons Road								
Drew/Nichols	Minor Collector						Major Collector (4)	
Proposed Nichols/La Brucherie	None						Major Collector (4)	
Main ST (Niland)								
SR-111/Blair	Major Collector						Major Collector (4)	
Martin Road								
Baughman/7th	Minor Collector						Minor Collector (2)	
7th/Bannister	Local						Minor Collector (2)	
Mead Road								
Dogwood/McConnell	Minor Collector						Minor Collector (2)	
Meadows Road								
Heber/Calexico (City)	Major Collector						Major Collector (4)	
Meloland Road								
Worthington/Correll	Minor Collector						Minor Collector (2)	
Proposed Correll/SR-98	Minor Collector						Minor Collector (2)	
McCabe Road								
Silsbee/La Brucherie	Major Collector						Prime Arterial (6-divided)	
La Brucherie/SR-111	Minor Arterial	N/A	200	17,270	1.64	28,500	Prime Arterial (6-divided)	B
SR-111/SR-7	Major Collector						Prime Arterial (6-divided)	
McConnell Road								
SR-78/Evan Hewes Hwy	Major Collector						Major Collector (4)	
McDonald Road								
Garst/SR-111	Minor Collector						Minor Collector (2)	
SR-111 TO Rd 8041	Minor Collector						Minor Collector (2)	
McKim Road								
Harris/Ralph	Minor Collector						Minor Collector (2)	
Miller Road (S33)								
I-8/Kumberg	Minor Collector						Minor Collector (2)	
I-8/SR-115	Major Collector	200	230	5,250	1.64	9,000	Major Collector (4)	A
SR-115/Kavanaugh	Major Collector	100	120	5,300	1.64	9,000	Major Collector (4)	A
Monte Road								
Pellet/Loveland	Minor Collector						Minor Collector (2)	
Neckel Road								
Austin/Clark	Minor Collector						Minor Collector (2)	
Nichols Road								
McCabe/Lyons	Minor Collector						Minor Collector (2)	
Noffsinger Road								
SR-111/McDonald	Minor Collector						Minor Collector (2)	
Norrish Road								
Gowling/Holt	Minor Collector						Minor Collector (2)	
Holt/Highline	Local						Major Collector (4)	
Highline/End	Major Collector						Major Collector (4)	
Orchard Road (S32)/ SR 7								
King/McCabe	Major Collector	700	810	50,740	1.13	57,500	Expressway (6)	C
McCabe/I-8	Major Collector	900	1,040	49,000	1.13	56,000	Expressway (6)	C
Holtville/I-8	Minor Arterial						Prime Arterial (6-divided)	
I-8/Connelly	Major Collector						Major Collector (4)	
Orr Road								
Baughman/SR-86	Minor Collector						Minor Collector (2)	
Park Road								
Proposed Dowden/Williams	None						Major Collector (4)	
Williams/Rutherford	Minor Collector						Major Collector (4)	
Proposed Rutherford/Dietrich	None						Major Collector (4)	
Parker Road								
Ross/Gilllett	Minor Collector						Minor Collector (2)	
Payne Road								
Huff/Erskine	Minor Collector						Minor Collector (2)	
Pellet Road								
Foulds/Monte	Minor Collector						Minor Collector (2)	
Proposed Monte/Imler	Minor Collector						Minor Collector (2)	
Pickett Road								
Hastain/Butters	Minor Collector						Minor Collector (2)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND
VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume ^a	Year 2005 ADT Volume ^a	Year 2025 ADT Volume ^c	25 Year Total Growth Factor ^d	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS ^e
Pierle Road								
Edgar/Wheeler	Minor Collector						Minor Collector (2)	
Pitzer Road								
Proposed Jasper/Willoughby	None						Major Collector (4)	
Chick/SR-86	Major Collector						Major Collector (4)	
SR-86/Jasper	Minor Collector						Major Collector (4)	
Pound Road								
Davis/International	Major Collector						Major Collector (4)	
International/Noffsinger	Minor Collector						Minor Collector (2)	
Pulliam Road								
Fisher/ SR-98	Minor Collector						Minor Collector (2)	
Ralph Road								
Imperial (City)/Dogwood	Major Collector						Major Collector (4)	
Dogwood/Mckim	Minor Collector						Minor Collector (2)	
Riley Road								
Bowles/Eddins	Minor Collector						Minor Collector	
Rockwood Road								
Proposed River/Lyons	Minor Collector						Prime Arterial (6)	
Lyons SR-98	Minor Collector						Prime Arterial (6)	
SR-98/Anza	Major Collector						Major Collector	
Ross Road								
Drew/Bennett	Major Collector	1,500	1,740	2,310	1.64	4,000	Major Collector (4)	A
Drew/Austin	Major Collector						Major Collector (4)	
El Centro/SR-111	Minor Arterial						Minor Arterial (4)	
SR-111/Mets	Local	N/A	560	2,120	1.64	3,500	Minor Collector (2)	B
Ruegger Road								
Kalin/SR-111	Minor Collector						Minor Collector (2)	
Rutherford Road (S26)								
Proposed Banister/Kalin							Major Collector (4)	
Kalin/Butters	Major Collector						Major Collector (4)	
Butters/Irvine	Minor Collector						Minor Collector (2)	
Schartz Road								
Proposed SR-86/Dogwood	None						Major Collector (4)	
Dogwood/McConnell	Minor Collector						Major Collector (4)	
Proposed McConnell/River	None						Major Collector (4)	
Seybert Road								
Taecker/SR-78	Minor Collector						Minor Collector	
Shank Road								
Best/SR-115	Minor Arterial						Minor Arterial (4)	
SR-115/Irvine	Minor Collector						Minor Collector (2)	
Silsbee Road								
Evan Hewes Hwy/McCabe	Minor Collector						Minor Collector (2)	
Sinclair Road								
Gentry/SR-111	Major Collector						Prime Arterial (6-divided)	
SR-111/Weist	Minor Collector						Minor Collector (2)	
Slayton Road								
Worthington/Holtville (City)	Minor Collector						Minor Collector (2)	
Snyder Road								
Worthington/Bonds Corner Road	Minor Collector						Minor Collector (2)	
Stahl Road								
McConnell/End	Minor Collector						Minor Collector (2)	
Streiby Road								
Fifield/Wiest	Minor Collector						Minor Collector (2)	
Taecker Road								
Seybert/Hastain	Minor Collector						Minor Collector (2)	
Titworth Road								
Butters/End	Minor Collector						Minor Collector (2)	
Townsend Road								
SR-115/Holt	Minor Collector						Minor Collector (2)	
Vail Road								
Lack/Kalin	Minor Collector						Minor Collector (2)	
Van Der Linden								
Hunt/Connelly	Minor Collector						Minor Collector (2)	
Vencill Road								
Connelly/Heber	Minor Collector						Minor Collector (2)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND
VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume ^a	Year 2005 ADT Volume ^a	Year 2025 ADT Volume ^c	25 Year Total Growth Factor ^d	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS ^e
Verde School Road								
Keffer/Bornt	Minor Collector						Minor Collector (2)	
Villa Road								
Dogwood/Cooley	Minor Collector						Minor Collector (2)	
Wahl Road								
Nichols/Clark	Minor Collector						Minor Collector (2)	
Walker Road								
Gentry/End	Major Collector						Major Collector (4)	
Gentry/Brandt	Minor Collector						Minor Collector (2)	
Ware Road								
Fawcett/Willoughby	Major Collector						Major Collector (4)	
Weaver Road								
Kalin/SR-86	Minor Collector						Minor Collector (2)	
Webster Road								
Kalin/Brandt	Minor Collector						Minor Collector (2)	
Westmorland Road								
Boley/Evan Hewes Hwy	Minor Collector						Minor Collector (2)	
Westside Road								
Evan Hewes Hwy/End	Minor Collector						Minor Collector (2)	
Wheeler Road								
Erskine/Pierle	Minor Collector						Minor Collector (2)	
Wieman Road								
Steiner/Cady	Minor Collector						Minor Collector (2)	
Wienert Road								
Guthrie/Forrester	Minor Collector						Minor Collector (2)	
Wiest Road								
SR-78/Griffin	Minor Collector						Minor Collector (2)	
Griffin/Boyd	Local						Minor Collector (2)	
McDonald/SR-115	Minor Collector						Minor Collector (2)	
Wilkins Road								
English/Cuff	Minor Collector						Minor Collector (2)	
Wilkinson Road								
Brandt/SR-111	Minor Collector						Minor Collector (2)	
Wiest/Flett	Minor Collector						Minor Collector (2)	
Willoughby Road								
Proposed La Brucherie/Clark	none						Major Collector (4)	
Clark/Dogwood	Minor Collector						Major Collector (4)	
Dogwood/Kloke	Major Collector						Major Collector (4)	
Wirt Road								
Wiest/Kaiser	Minor Collector						Minor Collector (2)	
Wixom Road								
Liebert/Drew	Minor Collector						Minor Collector (2)	
Wormwood Road								
Dearborn/Fisher	Minor Collector						Minor Collector (2)	
Worthington Road (S28)								
Huff/Highline	Major Collector						Major Collector (4)	
Yocum Road								
Proposed Dogwood/Lyerly	none						Major Collector (2)	
Lyerly/Kershaw	Minor Collector						Major Collector (4)	
Kershaw/Blair	Local						Major Collector (4)	
Young Road								
SR-111/Blair	Minor Collector						Minor Collector (2)	
Zenos Road								
Barbara Worth/Holtville (City)	Minor Collector						Minor Collector (2)	
State Route 78								
S.D.-Imperial County Line/Junction SR-86	State Hwy	N/A	920	8,104	1.64	13,500	Collector (4)	A
SR-111/SR-115N	State Hwy	N/A	3,950	10,592	1.64	17,500	Collector (4)	B
SR-115N/SR-115S	State Hwy	N/A	3,100	13,447	1.64	22,500	Collector (4)	B
115S/Glamis	State Hwy	N/A	1,950	7,340	1.64	12,500	Collector (4)	A
Glamis/Ogilby	State Hwy	N/A	1,850	4,909	1.64	8,500	Collector (4)	A
Ogilby/Palo Verde, Fourth	State Hwy	N/A	2,000	5,307	1.64	9,000	Collector (4)	A
Palo Verde, Fourth/Imperial County Line	State Hwy	N/A	2,000	5,307	1.64	9,000	Collector (4)	A

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND
VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume ^a	Year 2005 ADT Volume ^a	Year 2025 ADT Volume ^c	25 Year Total Growth Factor ^d	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS ^e
State Route 86								
Imperial County Line/Desert Shores	State Hwy	N/A	12,900	21,138	1.28	27,500	Minor Arterial (4)	C
Desert Shores/Brawley Ave.	State Hwy	N/A	12,400	20,319	1.28	26,500	Collector (4)	C
Brawley Ave./S. Marina	State Hwy	N/A	13,400	21,957	1.28	28,500	Minor Arterial (4)	C
S. Marina/Air Park	State Hwy	N/A	12,100	19,827	1.64	33,000	Prime Arterial (6-divided)	B
Air Park/SR-78 West	State Hwy	N/A	10,800	17,697	1.64	29,500	Minor Arterial (4)	C
SR-78 West/Lack	State Hwy	N/A	10,800	17,890	1.64	29,500	Minor Arterial (4)	C
Lack/West Westmorland City Limits	State Hwy	N/A	10,200	19,650	1.64	32,500	Prime Arterial (6-divided)	B
E Westmorland C. Limits/W Brawley C. Limits	State Hwy	N/A	14,000	19,440	1.64	32,000	Prime Arterial (6-divided)	B
South Brawley City Limits/Legion	State Hwy	N/A	21,400	28,300	1.13	32,500	Prime Arterial (6-divided)	B
Legion/Keystone	State Hwy	N/A	19,100	27,940	1.13	32,000	Prime Arterial (6-divided)	B
Keystone/Imperial Ave.	State Hwy	N/A	14,700	27,980	1.13	32,000	Prime Arterial (6-divided)	B
I-8/McCabe	State Hwy	N/A	21,500	24,890	1.28	32,000	Prime Arterial (6-divided)	B
McCabe/Heber	State Hwy	N/A	7,100	26,100	1.28	33,500	Prime Arterial (6-divided)	B
Heber/Dogwood	State Hwy	N/A	7,500	26,100	1.28	33,500	Prime Arterial (6-divided)	B
Dogwood/SR-111	State Hwy	N/A	5,200	26,000	1.28	33,500	Prime Arterial (6-divided)	B
South Imperial City Limits/North El Centro City Limits	State Hwy	N/A	6,500	27,980	1.13	32,000	Prime Arterial (6-divided)	B
State Route 98								
Imperial Hwy/Drew	State Hwy	N/A	2,300	1,730	1.64	3,000	Local Collector (2)	B
Drew/Clark	State Hwy	N/A	3,800	5,350	1.64	9,000	Collector (4)	A
Clark/Dogwood	State Hwy	N/A	4,550	8,800	1.64	14,500	Collector (4)	B
Dogwood/West Calexico City Limits	State Hwy	N/A	9,800	24,180	1.64	31,500	Prime Arterial (6-divided)	B
East Calexico City Limits/Barbara Worth	State Hwy	N/A	24,400	26,000	1.64	33,500	Prime Arterial (6-divided)	B
Barbara Worth/Bonds Corner	State Hwy	N/A	16,300	26,000	1.64	33,500	Prime Arterial (6-divided)	B
Bonds Corner/E. Highline Canal	State Hwy	N/A	4,500	770	1.64	1,500	Local Collector (2)	A
E. Highline Canal/I-8	State Hwy	N/A	2,200	250	1.64	500	Local Collector (2)	A
State Route 111								
North Calexico City Limits	State Hwy	N/A	50,000	97,570	1.13	111,000	Freeway (8)	C
Heber/McCabe	State Hwy	N/A	33,500	98,650	1.13	112,000	Freeway (8)	C
McCabe/I-8	State Hwy	N/A	37,000	90,830	1.13	103,000	Freeway (8)	C
I-8/Evan Hewes Hwy	State Hwy	N/A	16,300	52,980	1.13	60,500	Expressway (6)	D
Evan Hewes/Aten	State Hwy	N/A	14,100	60,200	1.13	68,500	Expressway (6)	D
Aten/Worthington	State Hwy	N/A	11,300	58,160	1.13	66,000	Expressway (6)	D
Worthington/Keystone	State Hwy	N/A	10,600	58,710	1.13	67,000	Expressway (6)	D
Keystone/E. Junction 78	State Hwy	N/A	9,300	57,590	1.13	65,500	Expressway (6)	D
North Brawley City Limits/Rutherford	State Hwy	N/A	9,500	18,510	1.64	30,500	Prime Arterial (6-divided)	B
Rutherford/South Calipatria City Limits	State Hwy	N/A	6,600	18,560	1.64	30,500	Prime Arterial (6-divided)	B
North Calipatria City Limits/Sinclair	State Hwy	N/A	5,700	15,640	1.64	26,000	Minor Arterial (4)	C
Sinclair/Niland Ave	State Hwy	N/A	5,100	13,532	1.64	22,500	Collector (4)	B
Niland Ave/English	State Hwy	N/A	3,700	9,817	1.64	16,500	Collector (4)	B
English/Bombay Beach	State Hwy	N/A	2,300	6,103	1.64	10,500	Collector (4)	A
Bombay Beach/Imperial-Riverside County line	State Hwy	N/A	1,900	5,041	1.64	8,500	Collector (4)	A
State Route 115								
Junction I-8/East Holtville City Limits	State Hwy	N/A	1,850	4,140	1.64	7,000	Local Collector (2)	C
West Holtville City Limits/West Junction Evan Hewes Hwy	State Hwy	N/A	6,600	8,320	1.64	14,000	Collector (4)	B
West Junction Evan Hewes Hwy/SR-78	State Hwy	N/A	2,850	27,870	1.13	32,000	Prime Arterial (6-divided)	B
SR-78/Rutherford	State Hwy	N/A	990	13,450	1.64	22,500	Minor Arterial (4)	B
Rutherford/Wirt	State Hwy	N/A	1,650	9,720	1.64	16,000	Collector (4)	B
Wirt/East Calipatria City Limits	State Hwy	N/A	1,150	9,240	1.64	15,500	Collector (4)	B
State Route 186								
I-8/International Border	State Hwy	N/A					State Hwy	

Notes:

* See Table 1 regarding additional right-of-way for transit facility with roadway.

a. Volume from Imperial County Circulation and Scenic Highways Element Manual (Dec. 2003).

b. Volume from Caltrans, Imperial County, or Linscott Law & Greenspan, Engineers counts.

c. Volumes from Caltrans CalxGP+ Model and adjusted higher in some cases.

d. A 0.5%, 1.0%, or 2.0% annual growth rate was applied to the Year 2025 volumes to obtain Year 2050 volumes.

e. Capacity based on the Imperial County Classification Table (depending on the Year 2050 volume amount).

Appendix H

Count Data



PO Box 1178
Corona, CA 92878
951-268-6268

Location: County of Imperial
N/S: Forrester Road
E/W: I-8 WB Ramps

Date: 11/14/2017
Day: TUESDAY
Project # 143-17778

TURNING MOVEMENT COUNT

	Forrester Road Northbound			Forrester Road Southbound			I-8 WB Ramps Eastbound			I-8 WB Ramps Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	3	0	0	16	20	0	0	0	5	2	27	73
6:15 AM	0	12	0	0	10	17	0	0	0	5	0	35	79
6:30 AM	1	15	0	0	24	21	0	0	0	4	0	41	106
6:45 AM	1	17	0	0	17	13	0	0	0	8	0	39	95
7:00 AM	2	22	0	0	28	10	0	0	0	5	0	31	98
7:15 AM	1	25	0	0	24	18	0	0	0	4	0	18	90
7:30 AM	5	22	0	0	33	20	0	0	0	13	0	16	109
7:45 AM	4	29	0	0	41	19	0	0	0	18	0	18	129
TOTAL VOLUMES:	14	145	0	0	193	138	0	0	0	62	2	225	779

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	12	98	0	0	126	67	0	0	0	40	0	83	426

PEAK HR FACTOR:	0.833	0.804	0.000	0.854	0.826
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	Forrester Road Northbound			Forrester Road Southbound			I-8 WB Ramps Eastbound			I-8 WB Ramps Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	1	30	0	0	38	11	0	0	0	5	0	19	104
4:15 PM	2	32	0	0	33	20	0	0	0	5	0	19	111
4:30 PM	2	22	0	0	71	14	0	0	0	1	0	15	125
4:45 PM	4	30	0	0	45	9	0	0	0	5	0	19	112
5:00 PM	0	41	0	0	44	11	0	0	0	5	0	18	119
5:15 PM	4	26	0	0	25	6	0	0	0	4	0	19	84
5:30 PM	0	24	0	0	27	15	0	0	0	5	0	13	84
5:45 PM	0	19	0	0	23	4	0	0	0	6	0	11	63
TOTAL VOLUMES:	13	224	0	0	306	90	0	0	0	36	0	133	802

PM Peak Hr Begins at: 415 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	8	125	0	0	193	54	0	0	0	16	0	71	467

PEAK HR FACTOR:	0.811	0.726	0.000	0.906	0.934
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PO Box 1178
Corona, CA 92878
951-268-6268

Location: County of Imperial
N/S: Forrester Road
E/W: I-8 EB Ramps

Date: 11/14/2017
Day: TUESDAY
Project # 143-17778

TURNING MOVEMENT COUNT

	Forrester Road Northbound			Forrester Road Southbound			I-8 EB Ramps Eastbound			I-8 EB Ramps Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	2	5	8	14	0	1	0	5	0	0	0	35
6:15 AM	0	4	2	2	10	0	8	0	2	0	0	0	28
6:30 AM	0	9	2	12	15	0	8	0	2	0	0	0	48
6:45 AM	0	4	0	12	17	0	13	0	0	0	0	0	46
7:00 AM	0	17	2	21	10	0	9	0	2	0	0	0	61
7:15 AM	0	10	1	16	10	0	15	1	2	0	0	0	55
7:30 AM	0	10	8	20	25	0	17	0	4	0	0	0	84
7:45 AM	0	19	9	18	41	0	16	0	1	0	0	0	104
TOTAL VOLUMES:	0	75	29	109	142	0	87	1	18	0	0	0	461

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	56	20	75	86	0	57	1	9	0	0	0	304

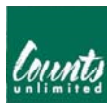
PEAK HR FACTOR:	0.679	0.682	0.798	0.000	0.731
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	Forrester Road Northbound			Forrester Road Southbound			I-8 EB Ramps Eastbound			I-8 EB Ramps Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	12	6	23	19	0	18	0	3	0	0	0	81
4:15 PM	0	5	5	23	14	0	25	0	2	0	0	0	74
4:30 PM	0	12	8	62	10	0	10	0	1	0	0	0	103
4:45 PM	0	14	4	41	7	0	20	0	1	0	0	0	87
5:00 PM	0	16	4	42	11	0	29	0	0	0	0	0	102
5:15 PM	0	5	4	17	8	0	23	0	1	0	0	0	58
5:30 PM	0	8	2	20	9	0	16	0	0	0	0	0	55
5:45 PM	0	4	7	21	10	0	16	0	1	0	0	0	59
TOTAL VOLUMES:	0	76	40	249	88	0	157	0	9	0	0	0	619

PM Peak Hr Begins at: 415 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	47	21	168	42	0	84	0	4	0	0	0	366

PEAK HR FACTOR:	0.850	0.729	0.759	0.000	0.888
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PO Box 1178
Corona, CA 92878
951-268-6268

Location: County of Imperial
N/S: Forrester Road
E/W: McCabe Road

Date: 11/14/2017
Day: TUESDAY
Project # 143-17778

TURNING MOVEMENT COUNT

	Forrester Road Northbound			Forrester Road Southbound			McCabe Road Eastbound			McCabe Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	0	0	7	1	2	1	1	1	1	5	4	23
6:15 AM	0	1	0	5	3	3	0	2	1	0	5	3	23
6:30 AM	2	0	0	9	1	4	2	1	4	0	4	4	31
6:45 AM	0	1	0	3	4	4	3	1	1	1	9	3	30
7:00 AM	0	0	0	7	1	2	8	3	1	0	7	6	35
7:15 AM	1	1	0	10	1	2	3	4	0	1	4	6	33
7:30 AM	2	0	0	16	5	4	1	4	0	0	1	8	41
7:45 AM	1	2	1	44	0	4	2	2	1	0	3	13	73
TOTAL VOLUMES:	6	5	1	101	16	25	20	18	9	3	38	47	289

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	4	3	1	77	7	12	14	13	2	1	15	33	182

PEAK HR FACTOR:	0.500	0.500	0.604	0.766	0.623
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	Forrester Road Northbound			Forrester Road Southbound			McCabe Road Eastbound			McCabe Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	1	1	10	1	3	5	12	1	0	2	6	42
4:15 PM	5	4	0	29	0	1	3	8	0	0	3	17	70
4:30 PM	0	0	0	6	0	0	8	4	0	0	1	7	26
4:45 PM	0	0	0	6	0	0	7	5	0	0	1	7	26
5:00 PM	0	0	0	9	0	2	5	1	0	1	0	7	25
5:15 PM	0	0	0	3	0	2	5	2	0	0	3	4	19
5:30 PM	0	1	0	5	1	1	1	1	0	0	1	1	12
5:45 PM	0	0	0	3	1	6	0	2	0	0	0	2	14
TOTAL VOLUMES:	5	6	1	71	3	15	34	35	1	1	11	51	234

PM Peak Hr Begins at: 400 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	5	5	1	51	1	4	23	29	1	0	7	37	164

PEAK HR FACTOR:	0.306	0.467	0.736	0.550	0.586
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PO Box 1178
Corona, CA 92878
951-268-6268

Location: County of Imperial
N/S: Pulliam Road
E/W: Kubler Road

Date: 11/14/2017
Day: TUESDAY
Project # 143-17778

TURNING MOVEMENT COUNT

	Pulliam Road Northbound			Pulliam Road Southbound			Kubler Road Eastbound			Kubler Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	2
6:15 AM	0	0	0	0	0	0	0	0	1	0	1	0	2
6:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	1	0	2
7:30 AM	0	0	1	0	0	0	0	1	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	1	1	2	1	0	0	0	2	1	0	2	0	10

AM Peak Hr Begins at: 600 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	1	1	1	0	0	0	0	1	1	0	1	0	6

PEAK HR FACTOR:	0.375	0.000	0.500	0.250	0.750
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	Pulliam Road Northbound			Pulliam Road Southbound			Kubler Road Eastbound			Kubler Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	0	0	0	0	0	0	0	1	1	0	2
4:15 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	0	0	0	4	0	1	1	0	7

PM Peak Hr Begins at: 400 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	1	0	0	0	3	0	1	1	0	6

PEAK HR FACTOR:	0.000	0.250	0.250	0.250	0.500
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PO Box 1178
Corona, CA 92878
951-268-6268

Location: County of Imperial
N/S: Brockman Road
E/W: Kubler Road

Date: 11/14/2017
Day: TUESDAY
Project # 143-17778

TURNING MOVEMENT COUNT

	Brockman Road Northbound			Brockman Road Southbound			Kubler Road Eastbound			Kubler Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	1	0	0	2	0	1	0	0	0	0	0	4
6:15 AM	0	1	0	1	1	0	0	0	0	0	0	0	3
6:30 AM	0	3	0	1	3	1	0	0	0	0	0	1	9
6:45 AM	0	2	0	2	5	0	0	1	0	0	0	1	11
7:00 AM	0	5	0	0	3	1	1	0	0	0	0	0	10
7:15 AM	0	1	0	1	2	0	2	0	0	1	0	0	7
7:30 AM	0	0	0	0	1	0	0	1	0	0	1	0	3
7:45 AM	0	1	0	0	3	0	0	0	1	0	1	0	6
TOTAL VOLUMES:	0	14	0	5	20	2	4	2	1	1	2	2	53

AM Peak Hr Begins at: 630 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	11	0	4	13	2	3	1	0	1	0	2	37

PEAK HR FACTOR:	0.550	0.679	0.500	0.750	0.841
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	Brockman Road Northbound			Brockman Road Southbound			Kubler Road Eastbound			Kubler Road Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	1	0	2	3	0	0	0	0	0	0	0	6
4:15 PM	0	2	0	0	2	0	0	0	0	1	2	0	7
4:30 PM	0	4	0	1	5	0	0	2	0	1	0	0	13
4:45 PM	0	0	0	0	0	0	0	1	1	0	0	0	2
5:00 PM	0	1	0	0	1	1	0	0	0	0	0	1	4
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	1	2
5:30 PM	0	3	0	1	0	0	0	0	0	1	0	0	5
5:45 PM	1	1	0	0	2	0	0	0	2	0	0	0	6
TOTAL VOLUMES:	1	13	0	4	13	1	0	3	3	3	2	2	45

PM Peak Hr Begins at: 400 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	7	0	3	10	0	0	3	1	2	2	0	28

PEAK HR FACTOR:	0.438	0.542	0.500	0.333	0.538
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PO Box 1178
Corona, CA 92878
951-268-6268

Location: County of Imperial
N/S: Drew Road
E/W: SR-98

Date: 11/14/2017
Day: TUESDAY
Project # 143-17778

TURNING MOVEMENT COUNT

	Drew Road Northbound			Drew Road Southbound			SR-98 Eastbound			SR-98 Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	0	0	2	0	0	0	2	0	0	18	0	22
6:15 AM	0	0	0	1	0	0	0	4	0	0	7	0	12
6:30 AM	0	0	0	0	0	1	0	6	0	0	11	0	18
6:45 AM	0	0	0	0	0	1	0	10	0	0	11	0	22
7:00 AM	0	0	0	0	0	3	2	11	0	0	13	0	29
7:15 AM	0	0	0	1	0	1	1	7	0	0	8	3	21
7:30 AM	0	0	0	1	0	0	0	5	0	0	11	1	18
7:45 AM	0	0	0	2	0	0	0	7	0	0	9	1	19
TOTAL VOLUMES:	0	0	0	7	0	6	3	52	0	0	88	5	161

AM Peak Hr Begins at: 645 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	2	0	5	3	33	0	0	43	4	90

PEAK HR FACTOR:	0.000	0.583	0.692	0.904	0.776
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	Drew Road Northbound			Drew Road Southbound			SR-98 Eastbound			SR-98 Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	0	3	0	0	0	8	0	0	7	0	18
4:15 PM	0	0	0	0	0	0	0	14	0	0	6	0	20
4:30 PM	0	0	0	2	0	2	0	20	0	0	15	4	43
4:45 PM	0	0	0	2	0	0	0	10	0	0	3	3	18
5:00 PM	0	0	0	2	0	0	0	12	0	0	5	0	19
5:15 PM	0	0	0	0	0	0	0	13	0	0	4	3	20
5:30 PM	0	0	0	1	0	0	0	11	0	0	9	1	22
5:45 PM	0	0	0	0	0	0	1	7	0	0	5	1	14
TOTAL VOLUMES:	0	0	0	10	0	2	1	95	0	0	54	12	174

PM Peak Hr Begins at: 430 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	6	0	2	0	55	0	0	27	10	100

PEAK HR FACTOR:	0.000	0.500	0.688	0.487	0.581
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PO Box 1178
Corona, CA 92878
951-268-6268

Location: County of Imperial
N/S: Drew Road
E/W: SR-98

Date: 11/14/2017
Day: TUESDAY
Project # 143-17778

TURNING MOVEMENT COUNT

	Drew Road Northbound			Drew Road Southbound			SR-98 Eastbound			SR-98 Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	1	0	0	0	0	0	5	0	0	20	0	26
6:15 AM	0	0	0	0	1	0	0	5	0	0	5	0	11
6:30 AM	0	1	0	0	0	0	0	5	0	1	12	0	19
6:45 AM	5	0	1	0	0	0	0	7	0	0	8	0	21
7:00 AM	5	0	0	0	0	0	0	14	0	1	7	0	27
7:15 AM	1	0	0	0	0	0	0	8	0	0	10	0	19
7:30 AM	1	1	0	0	0	0	0	6	0	0	12	0	20
7:45 AM	1	0	0	0	0	0	0	6	1	1	6	0	15
TOTAL VOLUMES:	13	3	1	0	1	0	0	56	1	3	80	0	158

AM Peak Hr Begins at: 645 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	12	1	1	0	0	0	0	35	0	1	37	0	87

PEAK HR FACTOR:	0.583	0.000	0.625	0.792	0.806
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	Drew Road Northbound			Drew Road Southbound			SR-98 Eastbound			SR-98 Westbound			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	0	0	0	0	0	0	0	8	0	0	7	0	15
4:15 PM	0	0	1	0	0	1	0	17	0	0	7	0	26
4:30 PM	0	0	0	0	0	0	0	22	0	0	20	0	42
4:45 PM	0	0	0	0	0	0	0	11	0	0	4	0	15
5:00 PM	0	0	0	0	0	0	0	12	0	0	5	0	17
5:15 PM	0	0	1	0	0	0	0	15	0	0	7	0	23
5:30 PM	0	0	0	0	0	0	0	12	0	0	9	0	21
5:45 PM	0	0	0	0	0	0	0	6	0	0	7	0	13
TOTAL VOLUMES:	0	0	2	0	0	1	0	103	0	0	66	0	172

PM Peak Hr Begins at: 415 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	1	0	0	1	0	62	0	0	36	0	100

PEAK HR FACTOR:	0.250	0.250	0.705	0.450	0.595
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County of Imperial
Brockman Road
B/ McCabe Road - Kubler Road

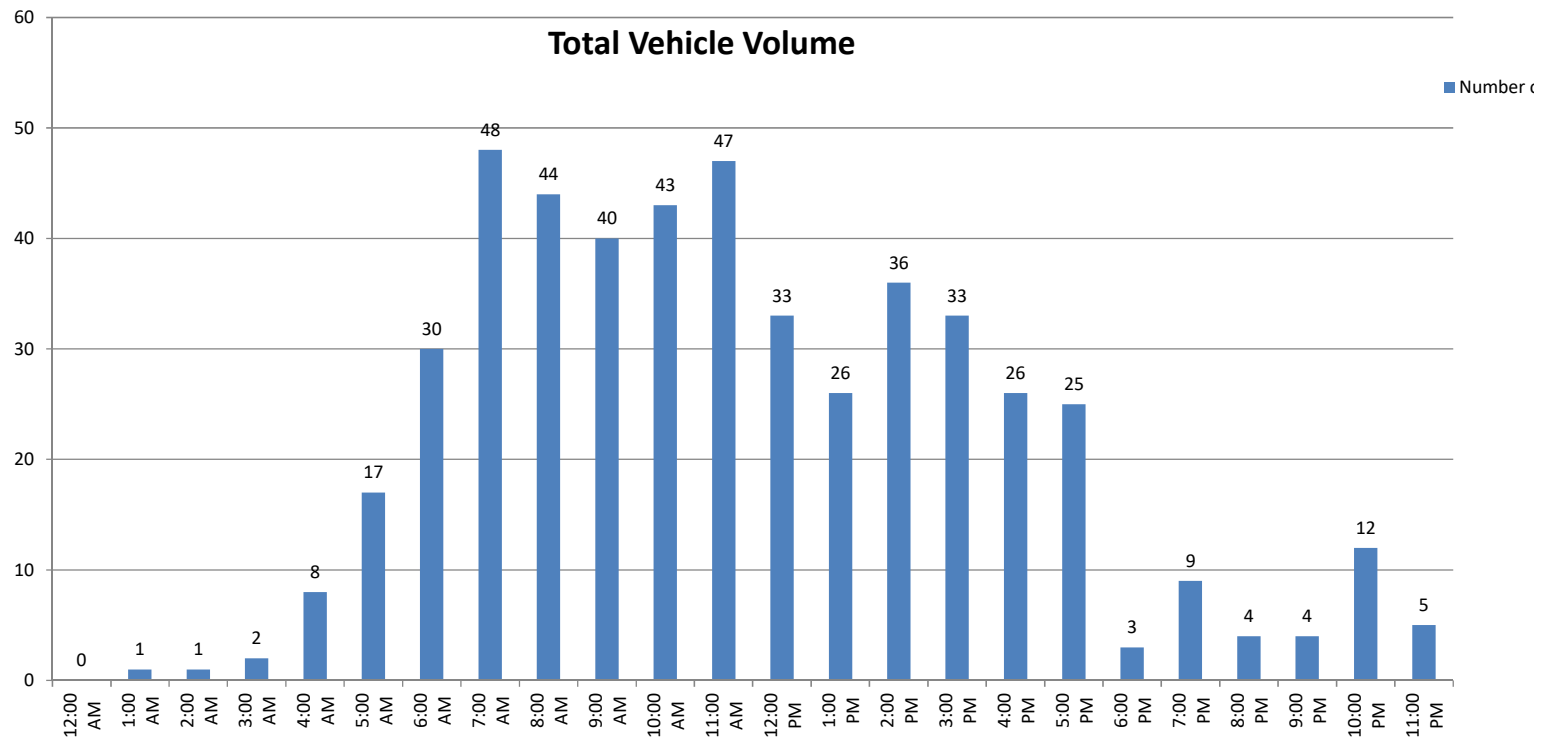
File Name 003
Site Code: 143-17778
24 Hour Directional Volume Count

Date: 11/14/2017	Northbound				Southbound					
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	10			0	2				
12:15	0	3			0	6				
12:30	0	1			0	1				
12:45	0	5	0	19	0	5	0	14	0	33
1:00	0	3			0	3				
1:15	0	3			1	3				
1:30	0	5			0	3				
1:45	0	3	0	14	0	3	1	12	1	26
2:00	0	11			0	5				
2:15	1	2			0	2				
2:30	0	2			0	5				
2:45	0	0	1	15	0	9	0	21	1	36
3:00	0	5			0	7				
3:15	0	7			0	2				
3:30	0	3			1	4				
3:45	1	2	1	17	0	3	1	16	2	33
4:00	0	1			1	9				
4:15	0	2			0	2				
4:30	2	4			0	3				
4:45	0	5	2	12	5	0	6	14	8	26
5:00	1	6			1	2				
5:15	2	4			4	2				
5:30	3	4			0	1				
5:45	1	2	7	16	5	4	10	9	17	25
6:00	3	0			6	1				
6:15	2	1			3	0				
6:30	4	1			4	0				
6:45	4	0	13	2	4	0	17	1	30	3
7:00	10	2			1	1				
7:15	4	1			5	2				
7:30	2	1			6	2				
7:45	9	0	25	4	11	0	23	5	48	9
8:00	0	1			4	1				
8:15	5	2			3	0				
8:30	6	0			15	0				
8:45	6	0	17	3	5	0	27	1	44	4
9:00	6	1			5	0				
9:15	7	0			2	1				
9:30	2	0			4	1				
9:45	8	0	23	1	6	1	17	3	40	4
10:00	5	2			4	0				
10:15	11	1			5	2				
10:30	5	2			4	2				
10:45	6	3	27	8	3	0	16	4	43	12
11:00	19	2			7	2				
11:15	1	0			6	0				
11:30	5	0			4	0				
11:45	2	0	27	2	3	1	20	3	47	5
Totals	143	113			138	103				
Combined Totals	256				241					
ADT	497									
AM Peak Hour	1015	AM			745	AM				
Volume	41				33					
P.H.F.	0.539				0.550					
PM Peak Hour		115	PM			230	PM			
Volume		22				23				
P.H.F.		0.500				0.639	TWO PEAK HOURS			
Percentage	55.9%	44.1%			57.3%	42.7%				



24 Hour Volume Plot
Brockman Road
B/ McCabe Road - Kubler Road
11/14/2017

Start Time	#####
12:00 AM	0
1:00 AM	1
2:00 AM	1
3:00 AM	2
4:00 AM	8
5:00 AM	17
6:00 AM	30
7:00 AM	48
8:00 AM	44
9:00 AM	40
10:00 AM	43
11:00 AM	47
12:00 PM	33
1:00 PM	26
2:00 PM	36
3:00 PM	33
4:00 PM	26
5:00 PM	25
6:00 PM	3
7:00 PM	9
8:00 PM	4
9:00 PM	4
10:00 PM	12
11:00 PM	5
Total	497



Volumes represent the combined totals for both directions



County of Imperial
Forrester Road
B/ Interstate 8 - McCabe Road

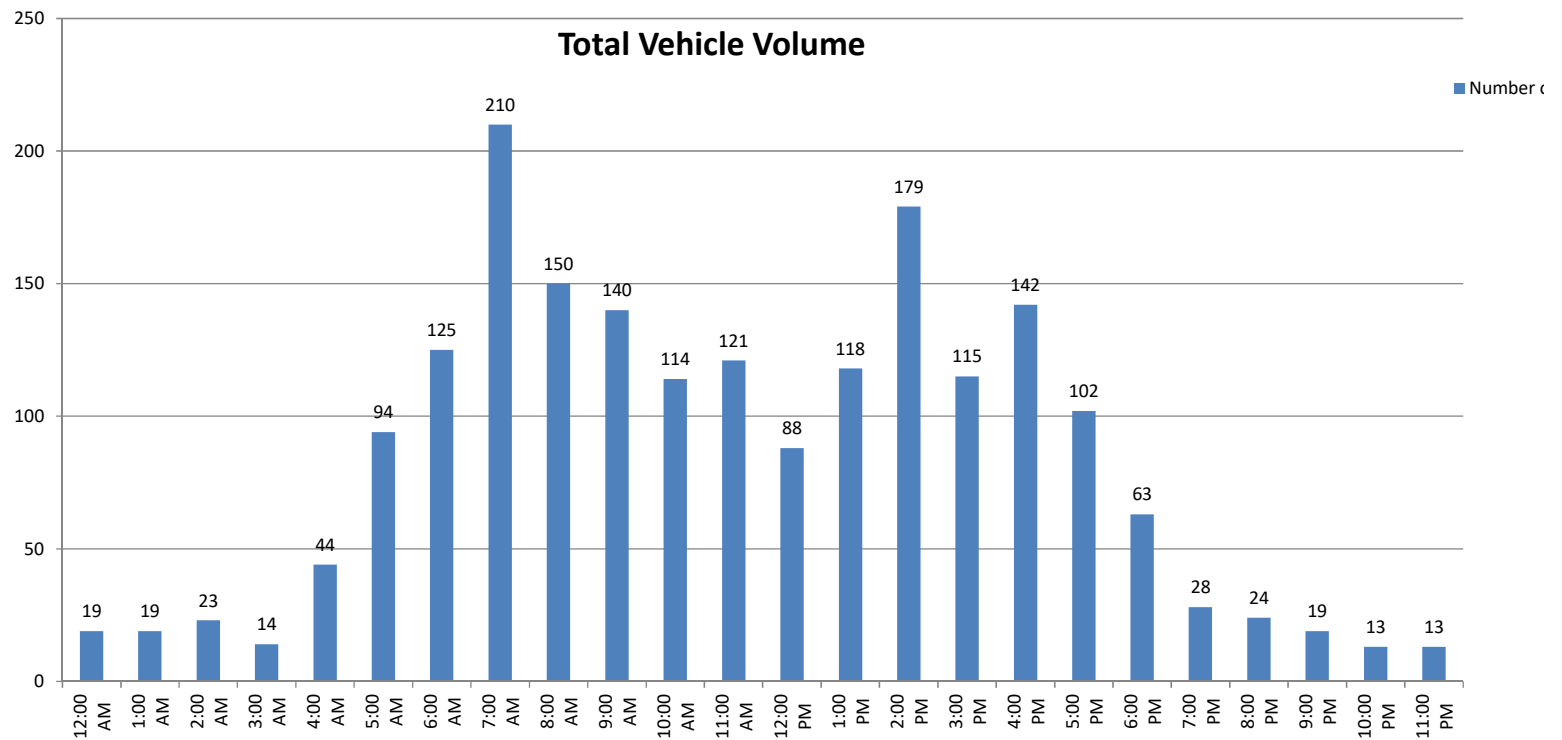
File Name 001
Site Code: 143-17778
24 Hour Directional Volume Count

Date: 11/14/2017	Northbound				Southbound					
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	12			5	8				
12:15	1	16			1	12				
12:30	1	6			1	10				
12:45	3	12	6	46	6	12	13	42	19	88
1:00	3	18			6	16				
1:15	0	24			3	7				
1:30	3	9			4	14				
1:45	0	14	6	65	0	16	13	53	19	118
2:00	0	32			3	21				
2:15	1	12			3	23				
2:30	0	21			13	18				
2:45	2	33	3	98	1	19	20	81	23	179
3:00	3	10			1	16				
3:15	2	23			0	8				
3:30	5	11			1	16				
3:45	2	21	12	65	0	10	2	50	14	115
4:00	0	21			8	23				
4:15	2	18			6	15				
4:30	4	28			6	10				
4:45	10	21	16	88	8	6	28	54	44	142
5:00	6	24			8	11				
5:15	9	11			15	9				
5:30	10	15			21	9				
5:45	6	10	31	60	19	13	63	42	94	102
6:00	12	7			21	4				
6:15	11	13			10	8				
6:30	26	12			21	8				
6:45	8	8	57	40	16	3	68	23	125	63
7:00	27	1			12	3				
7:15	25	4			10	4				
7:30	24	7			29	3				
7:45	37	2	113	14	46	4	97	14	210	28
8:00	28	2			19	3				
8:15	18	2			21	3				
8:30	23	2			7	3				
8:45	14	2	83	8	20	7	67	16	150	24
9:00	17	1			15	2				
9:15	22	5			15	2				
9:30	17	2			18	2				
9:45	24	3	80	11	12	2	60	8	140	19
10:00	20	3			15	0				
10:15	11	0			13	2				
10:30	11	4			14	2				
10:45	13	2	55	9	17	0	59	4	114	13
11:00	33	4			8	1				
11:15	17	1			8	2				
11:30	21	1			10	0				
11:45	13	1	84	7	11	3	37	6	121	13
Totals	546	511			527	393				
Combined Totals	1057				920					
ADT	1977									
AM Peak Hour	715	AM			730	AM				
Volume	114				115					
P.H.F.	0.770				0.625					
PM Peak Hour		200	PM			200	PM			
Volume		98				81				
P.H.F.		0.742				0.880				
Percentage	51.7%	48.3%			57.3%	42.7%				



24 Hour Volume Plot
Forrester Road
B/ Interstate 8 - McCabe Road
11/14/2017

Start Time	#####
12:00 AM	19
1:00 AM	19
2:00 AM	23
3:00 AM	14
4:00 AM	44
5:00 AM	94
6:00 AM	125
7:00 AM	210
8:00 AM	150
9:00 AM	140
10:00 AM	114
11:00 AM	121
12:00 PM	88
1:00 PM	118
2:00 PM	179
3:00 PM	115
4:00 PM	142
5:00 PM	102
6:00 PM	63
7:00 PM	28
8:00 PM	24
9:00 PM	19
10:00 PM	13
11:00 PM	13
Total	1977



Volumes represent the combined totals for both directions



County of Imperial
Kubler Road
B/ Pulliam Road - Brockman Road

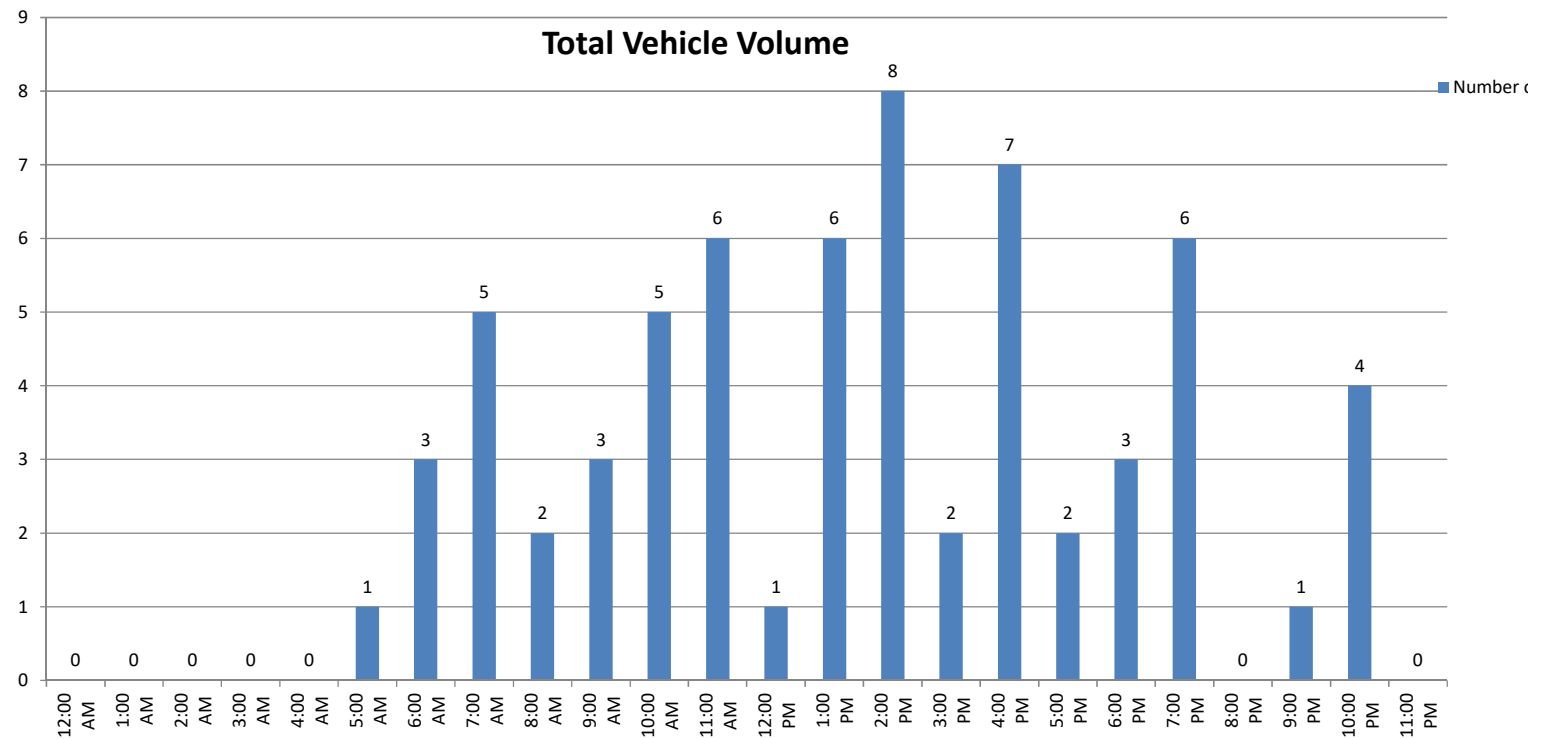
File Name 004
Site Code: 143-17778
24 Hour Directional Volume Count

Date:	Eastbound				Westbound					
11/14/2017	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	0			0	0				
12:15	0	0			0	0				
12:30	0	0			0	1				
12:45	0	0	0	0	0	0	0	1	0	1
1:00	0	0			0	0				
1:15	0	3			0	0				
1:30	0	0			0	2				
1:45	0	0	0	3	0	1	0	3	0	6
2:00	0	1			0	1				
2:15	0	2			0	0				
2:30	0	2			0	2				
2:45	0	0	0	5	0	0	0	3	0	8
3:00	0	1			0	0				
3:15	0	1			0	0				
3:30	0	0			0	0				
3:45	0	0	0	2	0	0	0	0	0	2
4:00	0	0			0	0				
4:15	0	0			0	3				
4:30	0	2			0	0				
4:45	0	2	0	4	0	0	0	3	0	7
5:00	0	0			0	1				
5:15	0	0			1	0				
5:30	0	0			0	0				
5:45	0	1	0	1	0	0	1	1	1	2
6:00	1	1			0	1				
6:15	0	0			1	1				
6:30	0	0			0	0				
6:45	1	0	2	1	0	0	1	2	3	3
7:00	0	0			0	1				
7:15	1	1			1	3				
7:30	2	1			0	0				
7:45	0	0	3	2	1	0	2	4	5	6
8:00	0	0			0	0				
8:15	0	0			0	0				
8:30	0	0			0	0				
8:45	0	0	0	0	2	0	2	0	2	0
9:00	0	0			1	0				
9:15	0	1			1	0				
9:30	0	0			1	0				
9:45	0	0	0	1	0	0	3	0	3	1
10:00	3	0			0	0				
10:15	2	0			0	0				
10:30	0	0			0	0				
10:45	0	1	5	1	0	3	0	3	5	4
11:00	0	0			1	0				
11:15	0	0			0	0				
11:30	3	0			1	0				
11:45	0	0	3	0	1	0	3	0	6	0
Totals	13	20			12	20				
Combined Totals	33				32					
ADT									65	
AM Peak Hour	1000	AM			845	AM				
Volume	5	TWO PEAK HOURS			5					
P.H.F.	0.417				0.625					
PM Peak Hour		215	PM			700	PM			
Volume		5	TWO PEAK HOURS			4	TWO PEAK HOURS			
P.H.F.		0.625				0.333				
Percentage	39.4%	60.6%			37.5%	62.5%				



24 Hour Volume Plot
Kubler Road
B/ Pulliam Road - Brockman Road
11/14/2017

Start Time	#####
12:00 AM	0
1:00 AM	0
2:00 AM	0
3:00 AM	0
4:00 AM	0
5:00 AM	1
6:00 AM	3
7:00 AM	5
8:00 AM	2
9:00 AM	3
10:00 AM	5
11:00 AM	6
12:00 PM	1
1:00 PM	6
2:00 PM	8
3:00 PM	2
4:00 PM	7
5:00 PM	2
6:00 PM	3
7:00 PM	6
8:00 PM	0
9:00 PM	1
10:00 PM	4
11:00 PM	0
Total	65



Volumes represent the combined totals for both directions



County of Imperial
McCabe Road
B/ Brockman Road - Forrester Road

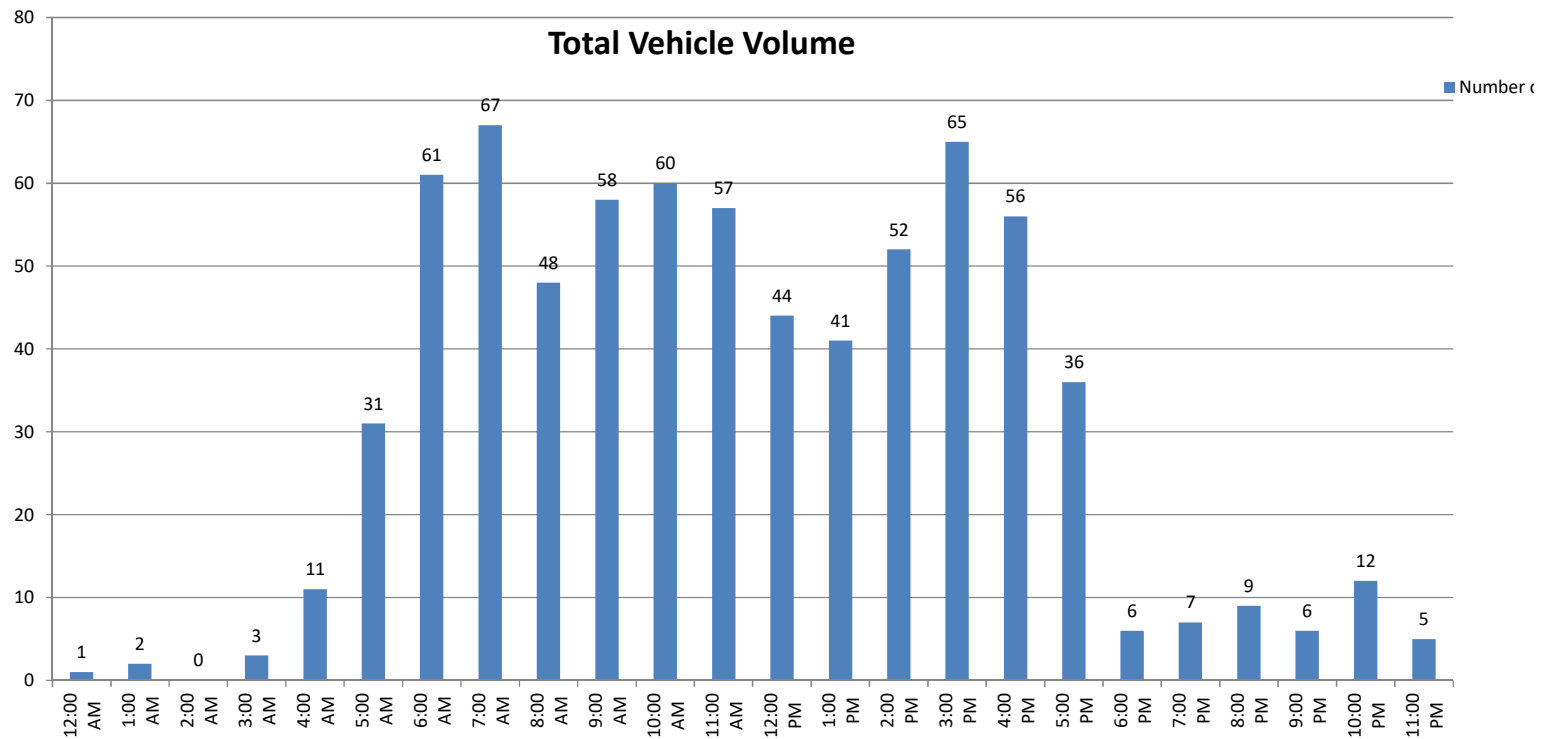
File Name 002
Site Code: 143-17778
24 Hour Directional Volume Count

Date: 11/14/2017	Eastbound				Westbound					
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	5			0	4				
12:15	0	3			1	7				
12:30	0	2			0	6				
12:45	0	11	0	21	0	6	1	23	1	44
1:00	0	4			0	2				
1:15	0	5			1	4				
1:30	0	8			1	4				
1:45	0	9	0	26	0	5	2	15	2	41
2:00	0	7			0	5				
2:15	0	6			0	5				
2:30	0	4			0	9				
2:45	0	3	0	20	0	13	0	32	0	52
3:00	0	8			0	7				
3:15	1	7			0	6				
3:30	0	6			1	11				
3:45	0	7	1	28	1	13	2	37	3	65
4:00	0	17			1	9				
4:15	0	3			1	3				
4:30	1	3			0	8				
4:45	0	12	1	35	8	1	10	21	11	56
5:00	1	6			3	2				
5:15	1	6			9	5				
5:30	1	2			5	5				
5:45	1	5	4	19	10	5	27	17	31	36
6:00	1	1			8	0				
6:15	4	1			7	0				
6:30	10	1			13	0				
6:45	6	2	21	5	12	1	40	1	61	6
7:00	21	0			6	1				
7:15	6	2			7	3				
7:30	5	1			7	0				
7:45	6	0	38	3	9	0	29	4	67	7
8:00	5	1			8	2				
8:15	1	1			3	1				
8:30	9	0			4	1				
8:45	10	1	25	3	8	2	23	6	48	9
9:00	4	2			9	1				
9:15	8	0			6	0				
9:30	4	0			6	1				
9:45	15	0	31	2	6	2	27	4	58	6
10:00	6	2			11	0				
10:15	13	1			8	2				
10:30	2	1			10	2				
10:45	5	3	26	7	5	1	34	5	60	12
11:00	23	2			5	1				
11:15	3	0			6	0				
11:30	10	0			4	0				
11:45	3	1	39	3	3	1	18	2	57	5
Totals	186	172			213	167				
Combined Totals	358				380					
ADT	738									
AM Peak Hour	1015	AM			600	AM				
Volume	43	TWO PEAK HOURS				40				
P.H.F.	0.467				0.769					
PM Peak Hour	315		PM			315	PM			
Volume	37				39					
P.H.F.	0.544				0.750					
Percentage	52.0%	48.0%			56.1%	43.9%				



24 Hour Volume Plot
McCabe Road
B/ Brockman Road - Forrester Road
11/14/2017

Start Time	#####
12:00 AM	1
1:00 AM	2
2:00 AM	0
3:00 AM	3
4:00 AM	11
5:00 AM	31
6:00 AM	61
7:00 AM	67
8:00 AM	48
9:00 AM	58
10:00 AM	60
11:00 AM	57
12:00 PM	44
1:00 PM	41
2:00 PM	52
3:00 PM	65
4:00 PM	56
5:00 PM	36
6:00 PM	6
7:00 PM	7
8:00 PM	9
9:00 PM	6
10:00 PM	12
11:00 PM	5
Total	738



Volumes represent the combined totals for both directions



County of Imperial
Pulliam Road
B/ Kubler Road - State Route 98

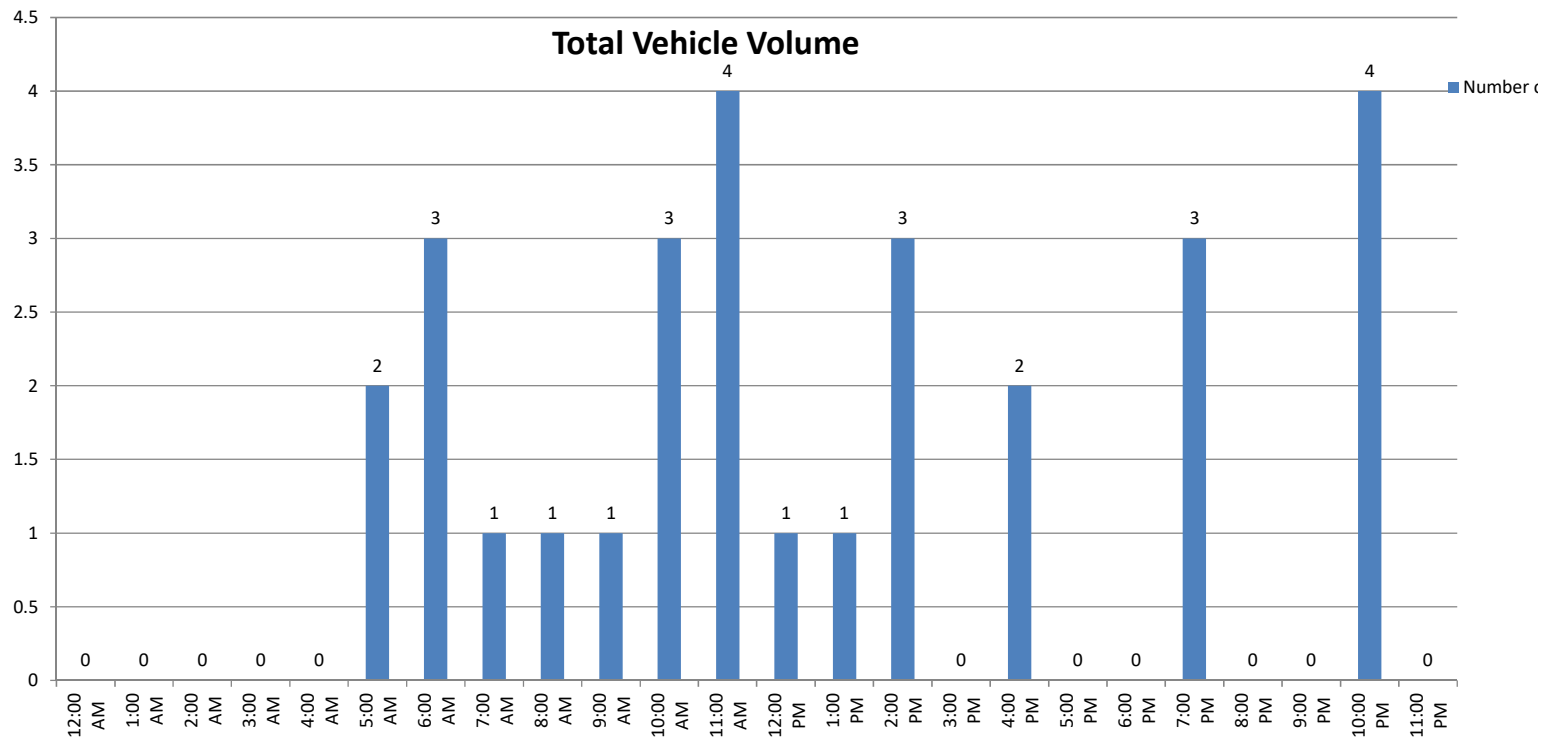
File Name 005
Site Code: 143-17778
24 Hour Directional Volume Count

Date: 11/14/2017	Northbound				Southbound					
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	0			0	0				
12:15	0	0			0	1				
12:30	0	0			0	0				
12:45	0	0	0	0	0	0	0	1	0	1
1:00	0	0			0	0				
1:15	0	0			0	0				
1:30	0	0			0	0				
1:45	0	0	0	0	0	1	0	1	0	1
2:00	0	1			0	1				
2:15	0	0			0	0				
2:30	0	1			0	0				
2:45	0	0	0	2	0	0	0	1	0	3
3:00	0	0			0	0				
3:15	0	0			0	0				
3:30	0	0			0	0				
3:45	0	0	0	0	0	0	0	0	0	0
4:00	0	0			0	0				
4:15	0	0			0	2				
4:30	0	0			0	0				
4:45	0	0	0	0	0	0	0	2	0	2
5:00	0	0			0	0				
5:15	0	0			0	0				
5:30	1	0			0	0				
5:45	1	0	2	0	0	0	0	0	2	0
6:00	1	0			0	0				
6:15	0	0			1	0				
6:30	1	0			0	0				
6:45	0	0	2	0	0	0	1	0	3	0
7:00	0	0			0	0				
7:15	0	0			0	1				
7:30	1	1			0	1				
7:45	0	0	1	1	0	0	0	2	1	3
8:00	0	0			1	0				
8:15	0	0			0	0				
8:30	0	0			0	0				
8:45	0	0	0	0	0	0	1	0	1	0
9:00	0	0			0	0				
9:15	0	0			0	0				
9:30	0	0			1	0				
9:45	0	0	0	0	0	0	1	0	1	0
10:00	1	0			0	0				
10:15	1	0			0	0				
10:30	0	0			0	0				
10:45	1	3	3	3	0	1	0	1	3	4
11:00	1	0			0	0				
11:15	1	0			0	0				
11:30	1	0			1	0				
11:45	0	0	3	0	0	0	1	0	4	0
Totals	11	6			4	8				
Combined Totals	17				12					
ADT	29									
AM Peak Hour	1045	AM			0	AM				
Volume	4				0	TWO PEAK HOURS				
P.H.F.	1.000				0.000					
PM Peak Hour		1130	PM			1130	PM			
Volume		23	TWO PEAK HOURS			20	TWO PEAK HOURS			
P.H.F.		0.000				0.000				
Percentage	64.7%	35.3%			33.3%	66.7%				



24 Hour Volume Plot
Pulliam Road
B/ Kubler Road - State Route 98
11/14/2017

Start Time	#####
12:00 AM	0
1:00 AM	0
2:00 AM	0
3:00 AM	0
4:00 AM	0
5:00 AM	2
6:00 AM	3
7:00 AM	1
8:00 AM	1
9:00 AM	1
10:00 AM	3
11:00 AM	4
12:00 PM	1
1:00 PM	1
2:00 PM	3
3:00 PM	0
4:00 PM	2
5:00 PM	0
6:00 PM	0
7:00 PM	3
8:00 PM	0
9:00 PM	0
10:00 PM	4
11:00 PM	0
Total	29



Volumes represent the combined totals for both directions

CALTRANS 2016 VOLUMES

Dist	Route	County		Postmile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
11	008	IMP	R	29.933	DREW ROAD	1950	18000	13800	2300	17100	15600
11	008	IMP	R	33.991	FORRESTER ROAD	2300	17100	15600	2150	20400	16900
11	098	IMP		22.197	DREW ROAD	250	2150	2050	220	2150	2050

PEAK HOUR VOLUME DATA

Peak hour volume data consists of hourly volume relationships and data location. The hourly volumes are expressed as a percentage of the Annual Average Daily Traffic (AADT). The percentages are shown for both the AM and the PM peak periods.

The principle data described here are the K factor, the D factor and their product (KD). The K factor is the percentage of AADT during the peak hour for both directions of travel. The D factor is the percentage of the peak hour travel in the peak direction. KD multiplied with the AADT gives the one way peak period directional flow rate or the design hourly volume (DHV). The design hourly volume is used for either Operational Analysis or Design Analysis. Refer to the 2000 Highway Capacity Manual for more details.

Following is a glossary of terms used in this listing of peak hour volume data:

Dir	Indicates direction of travel for peak volume
AADT	Annual Average Daily Traffic in vehicles per day (vpd).
AM Peak	Represents the morning peak period for traffic analysis
CS	Control Station Number, Caltrans identification number for monitoring site.
CO	County abbreviation used by Caltrans
D	D factor. The percentage of traffic in the peak direction during the peak hour. Values in this book are derived by dividing the measured PHV by the sum of both directions of travel during the peak hour.
DAY	Day of week for the peak volume.
DDHV	The directional design hour volume, in vehicles per hour (vph) $DDHV = AADT \times K \times D$. See equation (8-1) on page 8-11 of the 2000 Highway Capacity Manual.
DI	Caltrans has twelve transportation districts statewide. This abbreviation identifies the district in which the count station is located.
HR	The ending time for the peak hour volume listed. The volume observed from 1 to 2 would be recorded as 2.

K	The percentage of the AADT in both directions during the peak hour. Values in this table are derived by dividing the measured 2-way PHV by the AADT.
KD	The product of K and D. The percentage of AADT in the peak direction during the peak hour. Values in this table are derived by dividing the measured 1-way PHV by the AADT.
LEG	For traffic counting purposes, a highway intersection or interchange is assigned two legs according to increasing postmiles (route direction) and with a postmile reference at the center of the intersection or interchange. The volume of traffic on each leg is denoted by an A, B or O. A = ahead leg, B = back leg, and O – traffic volume being same for both back and ahead legs.
MNTH	The month that the peak volume occurred.
PHV	Peak Hour Volume in the peak direction. A one way volume in vehicles per hour (vph) as used here. The PHV is analogous to the DDHV as used for design purposes.
PM	The Post Mile is the mileage measured from the county line, or from the beginning of a route. Each postmile along a route in a county is a unique location on the state highway system.
PM Peak	Represents the afternoon peak period for traffic analysis.
PRE	The postmile may have a prefix like R, T, L, M, etc. When a length of highway is changed due to construction or realignment, new postmile values are assigned. To distinguish the new values from the old, an alpha code is prefixed to the new postmile.
RTE	The state highway route number
YR	The year when the count was made. Traffic counting is on a 3-year cycle.

OTM32420			CALTRANS TRAFFIC VOLUMES														PAGE # 6								
10/27/2017			LATEST TRAFFIC YEAR SELECTED																						
11:17:51			PEAK HOUR VOLUME DATA																						
DI	RTE	CO	PRE	PM	CS	LEG	YR	Dir	AM PEAK			HR	DAY	Mnth	Dir	PM PEAK			HR	DAY	Mnth				
									1 WAY	%	%					%	1 WAY	%				%			
									PHV	K	D	KD				PHV	K	D	KD						
11	008	SD	L	1.213	958	A	16	E	4363	7.25	58.8	4.26	7	TUE	FEB	W	4339	6.64	63.82	4.24	17	THU	OCT		
11	008	SD	R	.023	859	A	16	W	8092	6.77	61.03	4.13	7	TUE	AUG	E	8284	7.54	56.06	4.23	15	WED	MAR		
11	008	SD		.946	804	A	16	W	8252	6.95	59.76	4.15	7	WED	MAY	E	8230	7.67	53.99	4.14	14	FRI	APR		
11	008	SD		5.638	953	B	16	W	10949	6.84	64.98	4.45	7	TUE	NOV	E	10607	7.4	58.25	4.31	15	TUE	MAY		
11	008	SD		8.336	807	B	16	W	10589	6.18	76.53	4.73	6	THU	MAY	E	10492	8.02	58.4	4.68	15	FRI	JUN		
11	008	SD		8.336	808	A	16	W	9812	6.77	76.42	5.17	6	WED	MAY	E	9724	8.19	62.59	5.12	16	MON	NOV		
11	008	SD		11.76	810	B	16	W	7752	5.8	71.82	4.17	6	WED	FEB	E	8655	8.04	57.85	4.65	15	TUE	APR		
11	008	SD		12.65	834	A	16	W	9464	6.21	65.92	4.09	6	WED	JUN	E	10045	7.92	54.84	4.34	15	WED	JUN		
11	008	SD		14.59	806	B	16	W	7377	6.95	60.71	4.22	7	TUE	AUG	E	7351	7.96	52.84	4.2	15	MON	SEP		
11	008	SD	R	18.73	824	B	16	W	4084	6.51	66.1	4.3	7	MON	SEP	E	4219	7.65	58.04	4.44	16	WED	SEP		
11	008	SD	R	20.04	888	B	16	E	3685	7.52	57.82	4.35	12	SUN	JAN	E	3938	8.18	56.85	4.65	16	THU	DEC		
11	008	SD	R	23.64	979	O	16	E	2431	7.68	54.36	4.17	11	SAT	MAR	E	2969	8.68	58.72	5.1	16	FRI	APR		
11	008	SD	R	37.83	811	A	16	E	1260	10.95	53.28	5.83	11	SAT	MAR	W	1494	10.77	64.2	6.91	14	SAT	JUL		
11	008	SD	R	51.98	621	B	16	W	1100	12.42	52.26	6.49	11	SAT	JUL	W	1310	14.9	51.88	7.73	15	MON	MAY		
11	008	SD	R	65.90	981	A	16	W	1032	10.77	65.07	7.01	11	SUN	JUL	W	1285	13.57	64.28	8.72	15	SUN	DEC		
11	008	IMP	R	10.29	993	B	16	W	1024	11.33	61.99	7.02	10	SAT	JUL	E	1241	13.67	62.27	8.51	13	TUE	JUL		
11	008	IMP	R	10.29	994	A	16	E	957	13.55	54.34	7.36	12	SUN	JUL	W	1182	14.93	60.9	9.09	16	FRI	JUL		
11	008	IMP	R	23.48	624	A	16	W	980	13.46	52.3	7.04	12	SUN	DEC	E	1145	16.31	50.42	8.22	15	MON	MAY		
11	008	IMP	R	40.94	638	B	16	W	1470	8.77	51.72	4.54	12	SUN	DEC	E	1702	9.14	57.48	5.25	14	FRI	OCT		
11	008	IMP	R	53.50	964	A	16	W	975	12.87	54.23	6.98	12	SAT	NOV	W	1183	15.07	56.17	8.46	13	SUN	DEC		
11	008	IMP	R	96.54	688	X	16	W	1003	12.67	51.02	6.46	12	SAT	NOV	E	1025	12.67	52.14	6.6	16	SUN	NOV		
11	008	IMP	R	96.99	988	B	16	E	1217	11.34	54.38	6.17	12	WED	DEC	E	1289	11.43	57.14	6.53	15	MON	FEB		
05	009	SCR		.046	48	A	14	N	1591	10.53	58.19	6.13	12	MON	DEC	N	1651	10.7	59.41	6.36	15	THU	DEC		
05	009	SCR		.63	681	A	14	S	306	9.59	61.57	5.91	12	SAT	JUN	S	361	11.58	60.17	6.97	14	SAT	MAR		
05	009	SCR		13.04	169	B	14	S	641	8.84	59.19	5.23	12	SAT	MAR	N	623	9.39	54.17	5.09	17	FRI	MAR		
05	009	SCR		27.09	49	B	14	N	277	10.9	97.88	10.67	7	WED	MAR	S	340	15.64	83.74	13.1	16	FRI	JUN		
04	009	SCL		0	50	A	16	N	288	13.85	64.29	8.91	12	SAT	JUN	S	337	13.27	78.56	10.42	17	SUN	JUN		
04	009	SCL		7.09	170	A	16	N	533	11.65	67.21	7.83	11	SAT	DEC	N	685	15.41	65.3	10.06	14	SUN	SEP		
04	009	SCL		11.45	171	B	16	N	1633	7.88	64.32	5.06	8	WED	DEC	S	1748	8.34	64.98	5.42	17	TUE	DEC		
07	010	LA		18.41	456	B	15	W	1558	13.19	96.35	12.7	7	MON	DEC	E	1308	12.93	82.47	10.67	17	WED	JUL		
07	010	LA		19.71	783	O	15	W	1585	12.46	95.02	11.84	8	TUE	JUL	E	1303	12.29	79.16	9.73	17	WED	JUL		
07	010	LA		24.31	785	A	15	W	3325	11.87	92.52	10.98	7	WED	OCT	E	2694	10.73	82.94	8.9	16	WED	SEP		
07	010	LA	R	6.745	525	O	14	W	7995	5.29	62.07	3.28	6	TUE	NOV	E	8158	6.31	53.01	3.35	14	THU	JAN		
Drew Solar Fram Traffic Study Appendix																						Page 61 of 333			

2015

**Annual Average Daily Truck Traffic
on the
California State Highway System**

Compiled by
Traffic Data Branch

State of California
California State Transportation Agency
Department of Transportation

Prepared in cooperation with the
U.S. Department of Transportation
Federal Highway Administration

2015 Daily Truck Traffic

RTE	DIST	CNTY	POST MILE	L E G	DESCRIPTION	VEHICLE	TRUCK	TRUCK	TRUCK			AADT	TOTAL	%	TRUCK		AADT	EAL		YEAR
						AADT TOTAL	AADT TOTAL	% TOT VEH	2	3	By Axle 4	5+	2	3	By Axle 4	5+	2-WAY (1000)	VER/ EST		
8	11	SD	10.57	B	FLETCHER PARKWAY	191,000	7,067	3.70	4,226	898	247	1,696	59.80	12.70	3.50	24.00	852	84V		
8	11	SD	10.57	A	FLETCHER PARKWAY	181,000	7,964	4.40	4,500	1,226	406	1,832	56.50	15.40	5.10	23.00	962	78V		
8	11	SD	15.8	B	EL CAJON, JCT. RTE. 67 NORTH	144,000	6,768	4.70	3,648	887	311	1,922	53.90	13.10	4.60	28.40	918	78V		
8	11	SD	15.8	A	EL CAJON, JCT. RTE. 67 NORTH	113,000	3,277	2.90	1,815	370	115	977	55.40	11.30	3.50	29.80	452	78V		
8	11	SD	R18.727	B	GREENFIELD DRIVE	93,000	10,461	11.25	7,895	721	546	1,299	75.47	6.89	5.22	12.42	871	15V		
8	11	SD	R18.727	A	GREENFIELD DRIVE	81,000	5,589	6.90	2,945	436	134	2,074	52.70	7.80	2.40	37.10	878	86V		
8	11	SD	R37.831	B	JCT. RTE. 79 NORTH, JAPATUL VALLEY RD	24,600	2,952	12.00	1,160	174	89	1,529	39.30	5.90	3.00	51.80	597	86E		
8	11	SD	R37.831	A	JCT. RTE. 79 NORTH, JAPATUL VALLEY RD	20,600	2,803	13.60	911	219	81	1,592	32.50	7.80	2.90	56.80	613	00E		
8	11	SD	R51.98	B	CAMERON RD	16,300	1,906	11.69	752	91	39	1,024	39.45	4.77	2.05	53.73	394	15V		
8	11	SD	R65.904	B	JCT. RTE. 94 SOUTH	15,300	2,125	13.89	760	98	49	1,218	35.78	4.59	2.29	57.34	463	05V		
8	11	SD	R65.904	A	JCT. RTE. 94 SOUTH	14,400	2,040	14.16	730	94	47	1,169	35.78	4.59	2.29	57.34	444	05V		
8	11	IMP	R10.01	B	JCT. RTE. 98	14,100	1,960	13.90	702	90	45	1,123	35.80	4.60	2.30	57.30	427	05E		
8	11	IMP	R10.01	A	JCT. RTE. 98	12,700	1,765	13.90	632	81	41	1,011	35.80	4.60	2.30	57.30	384	05E		
8	11	IMP	R23.48	A	DUNAWAY RD	13,800	1,777	12.88	587	86	37	1,067	33.03	4.84	2.08	60.05	402	15V		
8	11	IMP	R29.933	B	DREW RD	13,800	2,241	16.24	664	104	41	1,432	29.63	4.63	1.85	63.89	533	05E		
8	11	IMP	R37.972	B	JCT. RTE. 86	31,500	3,370	10.70	1,085	185	74	2,026	32.20	5.50	2.20	60.10	765	05E		

Appendix I

Existing Intersection LOS Calculations

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	40	0	83	12	98	0	0	126	67
Future Vol, veh/h	0	0	0	40	0	83	12	98	0	0	126	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	43	0	90	13	107	0	0	137	73
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				307	343	107	210	0	-	-	-	0
Stage 1				133	133	-	-	-	-	-	-	-
Stage 2				174	210	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				685	579	947	1361	-	0	0	-	-
Stage 1				893	786	-	-	-	0	0	-	-
Stage 2				856	728	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				678	0	947	1361	-	-	-	-	-
Mov Cap-2 Maneuver				678	0	-	-	-	-	-	-	-
Stage 1				884	0	-	-	-	-	-	-	-
Stage 2				856	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				9.7		0.8		0				
HCM LOS				A								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1361	-	678	947	-	-						
HCM Lane V/C Ratio	0.01	-	0.064	0.095	-	-						
HCM Control Delay (s)	7.7	0	10.7	9.2	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile Q(veh)	0	-	0.2	0.3	-	-						

Intersection

Int Delay, s/veh 4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰			↰	
Traffic Vol, veh/h	57	1	9	0	0	0	0	56	20	75	86	0
Future Vol, veh/h	57	1	9	0	0	0	0	56	20	75	86	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	1	10	0	0	0	0	61	22	82	93	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	329	340	93	-	0	0	83	0	0
Stage 1	257	257	-	-	-	-	-	-	-
Stage 2	72	83	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	665	582	964	0	-	-	1514	-	0
Stage 1	786	695	-	0	-	-	-	-	0
Stage 2	951	826	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	627	0	964	-	-	-	1514	-	-
Mov Cap-2 Maneuver	627	0	-	-	-	-	-	-	-
Stage 1	741	0	-	-	-	-	-	-	-
Stage 2	951	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	0	3.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	627	964	1514	-
HCM Lane V/C Ratio	-	-	0.101	0.01	0.054	-
HCM Control Delay (s)	-	-	11.4	8.8	7.5	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	0.2	-

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	13	2	1	15	33	4	3	1	77	7	12
Future Vol, veh/h	14	13	2	1	15	33	4	3	1	77	7	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	14	2	1	16	36	4	3	1	84	8	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	52	0	0	16	0	0	92	99	15	83	82	34
Stage 1	-	-	-	-	-	-	45	45	-	36	36	-
Stage 2	-	-	-	-	-	-	47	54	-	47	46	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1554	-	-	1602	-	-	892	791	1065	904	808	1039
Stage 1	-	-	-	-	-	-	969	857	-	980	865	-
Stage 2	-	-	-	-	-	-	967	850	-	967	857	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1554	-	-	1602	-	-	867	782	1065	892	799	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	867	782	-	892	799	-
Stage 1	-	-	-	-	-	-	959	848	-	970	864	-
Stage 2	-	-	-	-	-	-	946	849	-	953	848	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.5			0.1			9.3			9.5		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	852	1554	-	-	1602	-	-	900				
HCM Lane V/C Ratio	0.01	0.01	-	-	0.001	-	-	0.116				
HCM Control Delay (s)	9.3	7.3	0	-	7.2	0	-	9.5				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4				

Intersection

Int Delay, s/veh 4.3

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

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	2	0	0	3	3	2	4	3	1
Stage 1	-	-	-	-	-	-	2	2	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	3	2	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1620	-	-	1019	893	1082	1017	893	1084
Stage 1	-	-	-	-	-	-	1021	894	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1020	894	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1620	-	-	1019	893	1082	1015	893	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1019	893	-	1015	893	-
Stage 1	-	-	-	-	-	-	1021	894	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1018	894	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	992	1622	-	-	1620	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-	-	-	-
HCM Control Delay (s)	8.6	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	0	1	0	2	0	11	0	4	13	2
Future Vol, veh/h	3	1	0	1	0	2	0	11	0	4	13	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	0	1	0	2	0	12	0	4	14	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	36	35	15	36	36	12	16	0	0	12	0	0
Stage 1	23	23	-	12	12	-	-	-	-	-	-	-
Stage 2	13	12	-	24	24	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	970	857	1065	970	856	1069	1602	-	-	1607	-	-
Stage 1	995	876	-	1009	886	-	-	-	-	-	-	-
Stage 2	1007	886	-	994	875	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	966	854	1065	967	853	1069	1602	-	-	1607	-	-
Mov Cap-2 Maneuver	966	854	-	967	853	-	-	-	-	-	-	-
Stage 1	995	873	-	1009	886	-	-	-	-	-	-	-
Stage 2	1005	886	-	990	872	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.9		8.5			0			1.5			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1602	-	-	935 1033	1607	-	-					
HCM Lane V/C Ratio	-	-	-	0.005 0.003	0.003	-	-					
HCM Control Delay (s)	0	-	-	8.9 8.5	7.2	0	-					
HCM Lane LOS	A	-	-	A A	A	A	-					
HCM 95th %tile Q(veh)	0	-	-	0 0	0	-	-					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	33	43	4	2	5
Future Vol, veh/h	3	33	43	4	2	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, %	2	2	2	2	2	2
Mvmt Flow	3	36	47	4	2	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	51	0	-	0	91	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1555	-	-	-	909	1020
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	907	1020
Mov Cap-2 Maneuver	-	-	-	-	907	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	980	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.6	0		8.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1555	-	-	-	985	
HCM Lane V/C Ratio	0.002	-	-	-	0.008	
HCM Control Delay (s)	7.3	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	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	0	35	0	1	37	0	12	1	1	0	0	0
Future Vol, veh/h	0	35	0	1	37	0	12	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	38	0	1	40	0	13	1	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	40	0	0	38	0	0	80	80	38	81	80	40
Stage 1	-	-	-	-	-	-	38	38	-	42	42	-
Stage 2	-	-	-	-	-	-	42	42	-	39	38	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1570	-	-	1572	-	-	908	810	1034	907	810	1031
Stage 1	-	-	-	-	-	-	977	863	-	972	860	-
Stage 2	-	-	-	-	-	-	972	860	-	976	863	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1570	-	-	1572	-	-	907	809	1034	904	809	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	907	809	-	904	809	-
Stage 1	-	-	-	-	-	-	977	863	-	972	859	-
Stage 2	-	-	-	-	-	-	971	859	-	974	863	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			9			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	907	1570	-	-	1572	-	-	-				
HCM Lane V/C Ratio	0.017	-	-	-	0.001	-	-	-				
HCM Control Delay (s)	9	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-				

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↶		↶			↶	
Traffic Vol, veh/h	0	0	0	16	0	71	8	125	0	0	193	54
Future Vol, veh/h	0	0	0	16	0	71	8	125	0	0	193	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	17	0	77	9	136	0	0	210	59

Major/Minor	Minor1	Major1	Major2									
Conflicting Flow All	394	423	136	269	0	-	-	-	-	0		
Stage 1	154	154	-	-	-	-	-	-	-	-		
Stage 2	240	269	-	-	-	-	-	-	-	-		
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-	-		
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-	-		
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-	-		
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-	-		
Pot Cap-1 Maneuver	611	522	913	1295	-	0	0	-	-	-		
Stage 1	874	770	-	-	-	0	0	-	-	-		
Stage 2	800	687	-	-	-	0	0	-	-	-		
Platoon blocked, %					-			-		-		
Mov Cap-1 Maneuver	606	0	913	1295	-	-	-	-	-	-		
Mov Cap-2 Maneuver	606	0	-	-	-	-	-	-	-	-		
Stage 1	867	0	-	-	-	-	-	-	-	-		
Stage 2	800	0	-	-	-	-	-	-	-	-		

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

Minor Lane/Major Mvmt	NBL	NBTWBLn1WBLn2	SBT	SBR
Capacity (veh/h)	1295	- 606 913	-	-
HCM Lane V/C Ratio	0.007	- 0.029 0.085	-	-
HCM Control Delay (s)	7.8	0 11.1 9.3	-	-
HCM Lane LOS	A	A B A	-	-
HCM 95th %tile Q(veh)	0	- 0.1 0.3	-	-

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↖			↕	
Traffic Vol, veh/h	84	0	4	0	0	0	0	47	21	168	42	0
Future Vol, veh/h	84	0	4	0	0	0	0	47	21	168	42	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	91	0	4	0	0	0	0	51	23	183	46	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	475	486	46				-	0	0	74	0	0
Stage 1	412	412	-				-	-	-	-	-	-
Stage 2	63	74	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	548	481	1023				0	-	-	1526	-	0
Stage 1	669	594	-				0	-	-	-	-	0
Stage 2	960	833	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	481	0	1023				-	-	-	1526	-	-
Mov Cap-2 Maneuver	481	0	-				-	-	-	-	-	-
Stage 1	587	0	-				-	-	-	-	-	-
Stage 2	960	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	13.9						0		6.1			
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	481	1023	1526	-						
HCM Lane V/C Ratio	-	-	0.19	0.004	0.12	-						
HCM Control Delay (s)	-	-	14.2	8.5	7.7	0						
HCM Lane LOS	-	-	B	A	A	A						
HCM 95th %tile Q(veh)	-	-	0.7	0	0.4	-						

Intersection

Int Delay, s/veh 4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	29	1	0	7	37	5	5	1	51	1	4
Future Vol, veh/h	23	29	1	0	7	37	5	5	1	51	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	32	1	0	8	40	5	5	1	55	1	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	33	0	0	114	131	33	114	111	28
Stage 1	-	-	-	-	-	-	83	83	-	28	28	-
Stage 2	-	-	-	-	-	-	31	48	-	86	83	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1559	-	-	1579	-	-	863	760	1041	863	779	1047
Stage 1	-	-	-	-	-	-	925	826	-	989	872	-
Stage 2	-	-	-	-	-	-	986	855	-	922	826	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1559	-	-	1579	-	-	848	748	1041	847	767	1047
Mov Cap-2 Maneuver	-	-	-	-	-	-	848	748	-	847	767	-
Stage 1	-	-	-	-	-	-	910	813	-	973	872	-
Stage 2	-	-	-	-	-	-	981	855	-	900	813	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0	9.5	9.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	812	1559	-	-	1579	-	-	857
HCM Lane V/C Ratio	0.015	0.016	-	-	-	-	-	0.071
HCM Control Delay (s)	9.5	7.3	0	-	0	-	-	9.5
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	0	1	1	0	0	0	0	1	0	0
Future Vol, veh/h	0	3	0	1	1	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	0	1	1	0	0	0	0	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	3	0	0	6	6	3	6	6	1
Stage 1	-	-	-	-	-	-	3	3	-	3	3	-
Stage 2	-	-	-	-	-	-	3	3	-	3	3	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1619	-	-	1014	889	1081	1014	889	1084
Stage 1	-	-	-	-	-	-	1020	893	-	1020	893	-
Stage 2	-	-	-	-	-	-	1020	893	-	1020	893	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1622	-	-	1619	-	-	1013	888	1081	1013	888	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1013	888	-	1013	888	-
Stage 1	-	-	-	-	-	-	1020	893	-	1020	892	-
Stage 2	-	-	-	-	-	-	1019	892	-	1020	893	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.6	0	8.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1622	-	-	1619	-	-	1013
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	0.001
HCM Control Delay (s)	0	0	-	-	7.2	0	-	8.6
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	1	2	2	0	0	7	0	3	10	0
Future Vol, veh/h	0	3	1	2	2	0	0	7	0	3	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	1	2	2	0	0	8	0	3	11	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	26	25	11	27	25	8	11	0	0	8	0	0
Stage 1	17	17	-	8	8	-	-	-	-	-	-	-
Stage 2	9	8	-	19	17	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	984	868	1070	983	868	1074	1608	-	-	1612	-	-
Stage 1	1002	881	-	1013	889	-	-	-	-	-	-	-
Stage 2	1012	889	-	1000	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	981	866	1070	978	866	1074	1608	-	-	1612	-	-
Mov Cap-2 Maneuver	981	866	-	978	866	-	-	-	-	-	-	-
Stage 1	1002	879	-	1013	889	-	-	-	-	-	-	-
Stage 2	1010	889	-	993	879	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9		8.9		0		1.7					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1608	-	-	909	919	1612	-	-				
HCM Lane V/C Ratio	-	-	-	0.005	0.005	0.002	-	-				
HCM Control Delay (s)	0	-	-	9	8.9	7.2	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	55	27	10	6	2
Future Vol, veh/h	0	55	27	10	6	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	29	11	7	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	40	0	-	0	95	35
Stage 1	-	-	-	-	35	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1570	-	-	-	905	1038
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	963	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1570	-	-	-	905	1038
Mov Cap-2 Maneuver	-	-	-	-	905	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	963	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1570	-	-	-	935	
HCM Lane V/C Ratio	-	-	-	-	0.009	
HCM Control Delay (s)	0	-	-	-	8.9	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	62	0	0	36	0	0	0	1	0	0	1
Future Vol, veh/h	0	62	0	0	36	0	0	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	67	0	0	39	0	0	0	1	0	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	39	0	0	67	0	0	107	106	67	107	106	39
Stage 1	-	-	-	-	-	-	67	67	-	39	39	-
Stage 2	-	-	-	-	-	-	40	39	-	68	67	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1571	-	-	1535	-	-	872	784	997	872	784	1033
Stage 1	-	-	-	-	-	-	943	839	-	976	862	-
Stage 2	-	-	-	-	-	-	975	862	-	942	839	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1571	-	-	1535	-	-	871	784	997	871	784	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	871	784	-	871	784	-
Stage 1	-	-	-	-	-	-	943	839	-	976	862	-
Stage 2	-	-	-	-	-	-	974	862	-	941	839	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			8.6			8.5		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	997	1571	-	-	1535	-	-	1033				
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	0.001				
HCM Control Delay (s)	8.6	0	-	-	0	-	-	8.5				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0				

Appendix J

Project Description Details

CHAPTER 2.0

PROJECT DESCRIPTION

2.1 PROJECT DESCRIPTION

The term Project refers to construction, operation, and decommissioning of the solar field and energy storage site parcels, Gen-Ties, improvements at the existing Drew Switchyard and other on-site and off-site ancillary features as described in the Project Description under either the Phased CUP Scenario or Full Build-out Scenario with up to approximately 855 gross and 762.8 net farmable acres of disturbance. The term CUPs refers to an individual CUP (i.e. CUP 17-0031), multiple CUPs (i.e. CUP 17-0031, CUP 17-0032 and CUP 17-0033) or all CUPs (CUP 17-0031 thru CUP 17-0035 and CUP 18-0001) as appropriate. The term Solar Energy Center refers to the area developed within each CUP with PV panels, collector lines, inverters and pad mounted transformers, substation(s) and switchyard(s), energy storage, O&M building, etc. The term Solar Field Site Parcels refers to the six parcels (052-170-039-000, 052-170-067-000, 052-170-031-000, 052-170-032-000, 052-170-056-000, and 052-170-037-000) which are currently flat crop farm fields where the PV panels and associated solar and energy storage equipment are proposed for development as CUP 17-0031 thru CUP 17-0035 and CUP 18-0001.

2.1.1 INTRODUCTION

This chapter of the Environmental Impact Report (EIR) describes the Drew Solar Project (“Project” or “Proposed Project”) proposed by Drew Solar, LLC. The Project is a proposal to build an approximately 100-mega-watt (MW) alternating current (AC) solar generation facility using photovoltaic (PV) technology. The entire Project is located on land owned by the Imperial Irrigation District (IID). The Project’s generation interconnection (gen-tie) transmission lines (“Gen-ties”) are proposed from the south end of the Project site running south across Drew Road and State Route 98 connecting into the existing Drew Switchyard located on APN 052-190-039. The term Project Site refers individually or collectively to the six parcels (052-170-039-000, 052-170-067-000, 052-170-031-000, 052-170-032-000, 052-170-056-000, and 052-170-037-000) on which the Project is proposed. The term Project Area refers to the area encompassed by all six CUPs as well as the Gen-Ties and other off-site ancillary facilities.

The Proposed Project consists of a photovoltaic (PV) solar facility capable of producing approximately 100 MWac on approximately 855 gross and 762.8 net farmable acres. The ultimate energy output is dependent on several variables, including off-take arrangements and the evolving efficiency of PV panels, so it is possible that the Project could generate more or less than 100 MW. The Project may be constructed at one time over approximately 18 months, or it may be built out over an approximately 10-year period. A conceptual phasing configuration is shown in Figure 2.0-3. A Site Plan is provided in Figure 2.0-4. The Project Proponent is requesting that a Conditional Use Permit (CUP) be issued for each of the five phases of the Project as well as an additional sixth CUP for Phase 5 for energy storage in the southwesterly portion of the Project Area. Project phasing allows utilities greater flexibility in obtaining renewable energy to meet ratepayer needs by allowing utilities to procure smaller energy quantities phased over time.

The Project Proponent has filed an application for a General Plan Amendment (GPA) for amendment of the Renewable Energy & Transmission Element to create an Island Overlay, an amendment of the requirements for said Island Overlay, a Zone Change to add the RE Overlay to the Project Site, a Variance and six CUPs. Each of the six CUPs may include an Operations and Maintenance (O&M) building or buildings. The Project may also include additional auxiliary facilities such as raw water/fire water storage, treated water storage, evaporation ponds, storm water retention basins, water filtration buildings and equipment, and equipment control buildings, septic system(s) and parking. The Project will

2.0 PROJECT DESCRIPTION

also include electric and vehicular crossings of State facilities, IID facilities and County facilities. The Project crossings will not interfere with the purpose of these Agencies' facilities (e.g., where a drain flows, the Project crossing will still allow the drain to flow). Each phase of the Project may have its own energy storage component as well as energy storage being housed within the inverters.

2.1.2 PROJECT BACKGROUND

For the last two decades, California has emerged as a leader in promoting policies designed to grow the State's portfolio of renewable energy generation and use. Most recently, California passed two bills further increasing the State's commitment to reductions in greenhouse gas emissions through reductions in fossil fuels and increases in renewable energy: Senate Bill (SB) 350 requiring retail sellers and publicly owned utilities to procure half of their electricity from renewable sources by 2030. This requirement is known as the Renewable Portfolio Standard or "RPS." In 2016, the Legislature passed SB 32, which codifies a 2030 greenhouse gas emissions reduction target of 40 percent below 1990 levels. According to Greentech Media, reaching such high amounts of variable renewable generation all but requires a wider build-out of storage capacity to give the grid more control over when that wind and solar power is consumed. The California legislature has passed several bills recently to help expand and expedite the amount of energy storage that is connected to California's electric grid. Newly signed AB 2861 authorizes the CPUC to create an independent dispute-resolution panel, staffed by electrical systems experts. Their job is to evaluate a disputed interconnection fee, gathering input from both sides and ruling on the case within 60 days. AB 2868 is aimed at increasing the overall size of the storage market by directing utilities to deploy up to 500 megawatts of additional storage capacity, of which no more than a quarter can be behind-the-meter. AB 33 declares the legislature's wish that the CPUC pay extra attention to long-duration storage for the grid. "The commission, in coordination with the Energy Commission, shall, as part of a new or existing proceeding, evaluate and analyze the potential for all types of long-duration bulk energy storage resources to help integrate renewable generation into the electrical grid," the law says. The CPUC's ruling comes after years of work jump-started by a 2010 state law, Assembly Bill 2514, which originally called for the statewide energy storage mandate of 1.3 GW to enable a "market transformation" for these new technologies. On June 10, 2013, CPUC Commissioner Peterman's Assigned Commissioner's Ruling stated "Energy storage has the potential to transform how the California electric system is conceived, designed, and operated. In so doing, energy storage has the potential to offer services needed as California seeks to maximize the value of its generation and transmission investments: optimizing the grid to avoid or defer investments in new fossil-power plants, integrating renewable power, and minimizing greenhouse emissions."

The Applicant is proposing to construct, operate and decommission a solar generation and energy storage facility on approximately 855 gross and 762.8 net farmable acres (inclusive of solar field, energy storage, project substation(s), roads, retention basins, etc.) located in southern Imperial County, California. A fundamental challenge posed by solar energy is that peak supply does not consistently coincide with peak demand times (e.g., 5:00 – 9:00 PM). Energy storage is a rapidly developing technology that can help balance supply and demand by capturing and storing renewable energy generated during daylight hours for peak evening demand. Energy storage, where available, reduces reliance on fossil fuels and furthers California's RPS policies by providing for better integration of locally-sourced solar and wind generation and RPS requirements.

On December 28, 2017, January 8, 2018, July 5, 2018 and [insert date that Derek submits the TPM], the Applicant submitted the following applications to ICPDS Department.

- Amendment (GPA 17-0006) to Imperial County's General Plan for amendment of the Renewable Energy & Transmission Element to create an Island Overlay for the Project Site, and amendment of the requirements for said Island Overlay; Zone Change (ZC 17-0007) to add the RE Overlay Zone to the Project Site;
- Variance (V 17-0003) for power pole structures that are over 120 feet in height on all proposed project parcels, including the existing Drew Switchyard. With approval of the Variance, the proposed structures could be up to 180 feet in height;
- Parcel Map ([insert PM #]) to fix the existing inconsistency with the legal and physical boundary of the SW ¼ Section of the Project Site (APNs: 052-170-039 & 052-170-067), including APN 052-170-030 to the north of the Project Site as part of the Parcel Map; Five CUPs (CUP 17-0031; CUP 17-0032; CUP 17-0033; CUP 17-0034 and CUP 17-0035) to develop solar energy generating systems including potential energy storage on lands zoned A-2, A-2-R, and A-3 per Title 9, Division 5: Zoning Areas Established, Chapter 8, Sections 90508.02 and 90509.02; and
- One CUP (CUP 18-0001) to develop energy storage as a component of solar on lands zoned A-2 and A-3 per Title 9, Division 5: Zoning Areas Established, Chapter 8, Sections 90508.02 and 90509.02 (A-2 & A-3). Said energy storage would be removed at the time of removal of associated solar facility.

In addition to the foregoing, the applicant will request Similarity In Use designation from the Planning and Development Services Department in compliance with Section 90203.10 of the County's Land Use Ordinance for the energy storage facilities proposed to be developed under CUP 18-0001.

The Project will use PV technology to convert sunlight directly into direct current (DC) electricity. The process starts with photovoltaic cells that make up photovoltaic modules (environmentally sealed collections of photovoltaic cells). PV modules are generally non-reflective. Groups of photovoltaic modules are wired together to form a PV array. The DC produced by the array is collected at inverters (power conversion devices) where the DC is converted to AC. The voltage of the electricity is increased by a transformer at each power conversion station to a medium voltage level (typically 34.5 kilovolts (kV)). Medium voltage electric lines (underground and/or overhead) are used to collect the electricity from each medium voltage transformer and transmit it to the facility substation(s), where the voltage is further increased by a high voltage transformer to match the electric grid for export to the point of interconnection at the Drew Road Switchyard. Disconnect switches, fuses, circuit breakers, and other miscellaneous equipment will be installed throughout the system for electrical protection and operations and maintenance purposes.

This EIR is being prepared to analyze the potential environmental impacts of the Project and fulfill the requirements of the California Environmental Quality Act (CEQA).

A primary project objective is to develop a project that will produce public benefits for Imperial County, the Southern California Region, and the State of California. The following is a list of key public benefits that are fundamental to the project's objectives:

- To enable better energy balancing and greater grid reliability through the development of Energy Storage Facilities.
- To reduce the likelihood of energy blackouts through the development of Energy Storage Facilities.
- To help meet the mandate of 1.3GW of energy storage established by Assembly Bill 2514.

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- To help maximize the investment of Californians in transmission infrastructure through the development of Energy Storage Facilities.
- To levelize the cost of energy through the development of Energy Storage Facilities.
- To reinforce Imperial County's position as a leader in the Renewable Energy Marketplace through the development of Energy Storage Facilities.
- To create significant lease revenue for Imperial Irrigation District ("IID") as the property owner, a public agency, which will benefit the citizens of Imperial County.
- To enable IID to solar fallow and reduce water use on developed CUPs, which help assist IID in meeting its water conservation goals and requirements, and Salton Sea conservation obligations under various agreements, while also avoiding taking higher value farmland out of production as a means of water conservation.
- To utilize Imperial County's abundance of available solar energy (sunlight) to generate approximately 100 megawatts of solar power consistent with the Imperial County General Plan renewable energy objectives.
- To locate the Project in Imperial County in close proximity to the existing California Independent System Operator ("CAISO") electric transmission system at a location which has available capacity to deliver electricity to major load centers in California.
- To meet the terms and requirements of any Power Purchase Agreement (PPA) and Large Generator Interconnection Agreement ("LGIA") that the Applicant has or may enter into and that require it to be interconnected directly to the CAISO grid at the existing Drew Switchyard.
- To deploy a technology that is safe, readily available, efficient, and environmentally responsible.
- To generate power, and store energy in Energy Storage Facilities, in an efficient manner and at a cost that is competitive in the renewable market on sites controlled by the applicant.
- To provide a new source of renewable energy to assist the State of California in achieving and exceeding the RPS.
- To maximize local construction jobs for a variety of trades through the development of a solar generation facility and an energy storage facility, therefore helping maximize the reduction of unemployment in the construction sector.
- To locate the Project in an area that ranks among the highest in solar resource potential in the nation, as measured by the CEC.
- To minimize potential impacts to aesthetics, health and safety and other potential environmental impacts:
 - o Locate the Project on disturbed land.
 - o Consistent with County conditions on similar solar generation projects, group or collocate the Project's proposed electrical interconnection facilities with existing or proposed electrical interconnection facilities, to the extent that such grouping/collocation can be accommodated.
 - o Utilize existing infrastructure (switchyards, transmission lines, roads, and water sources) where feasible to locate the project proximate to existing electric interconnection and

transmission systems in Imperial County with capacity to deliver electricity to major load centers in California.

- To indirectly reduce the need to emit greenhouse gases caused by the generation of similar quantities of electricity from either existing or future non-renewable sources through the use of renewable energy sources during on-peak power periods.
- To create a sustainable form of electricity that requires little fuel to be consumed.
- Where existing agricultural operations are active, to promote continued agricultural operations until that CUP is developed for use.
- To encourage economic investment in renewable energy activities.
- To diversify Imperial County's economic base by developing environmentally responsible non-agricultural activities.
- To provide tax revenue through sales, use and property taxes generated by renewable energy development within Imperial County.
- To help maximize the expansion of the renewable energy sector in Imperial County's economy by developing solar generation facilities and Energy Storage Facilities.

2.1.3 SITE LOCATION

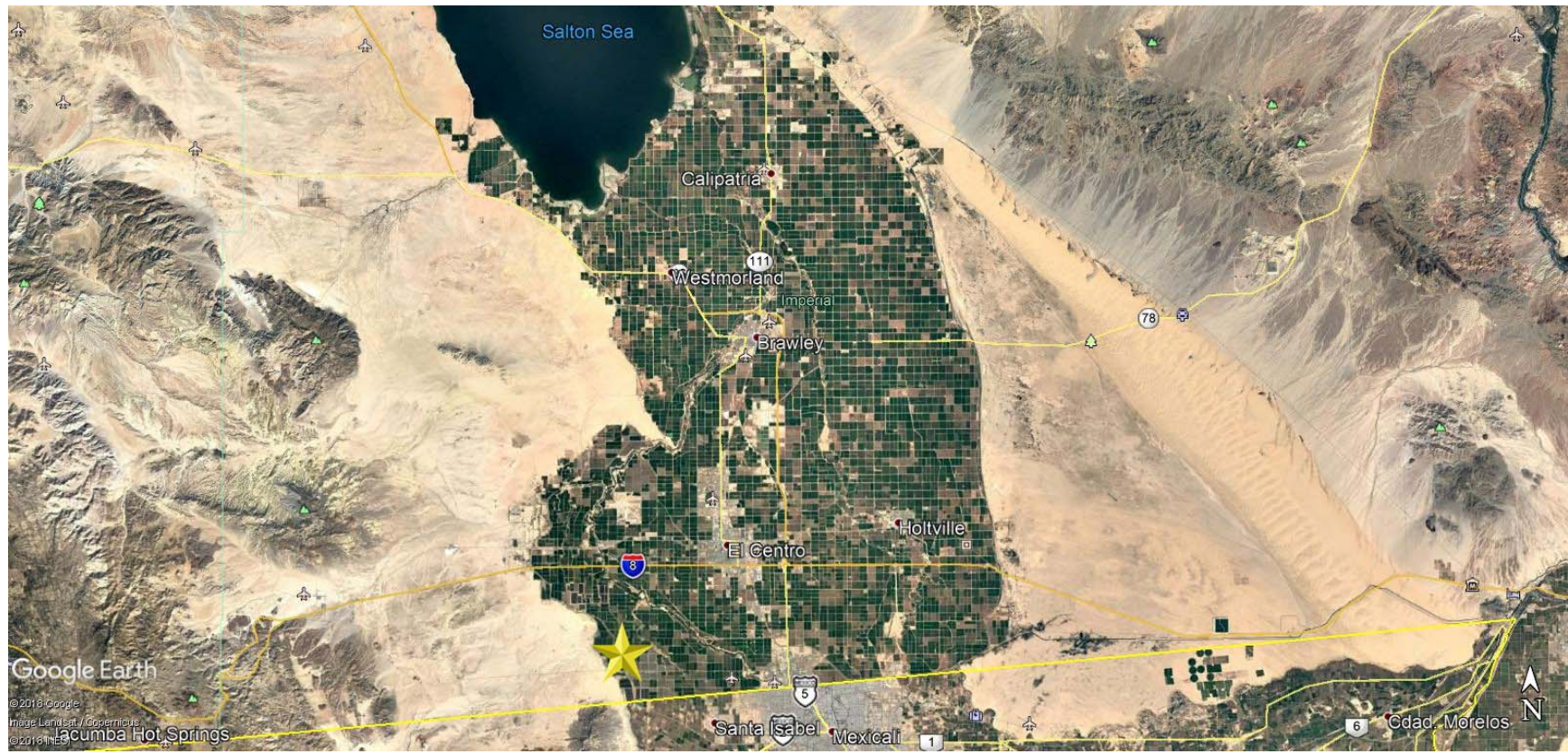
The proposed Project site is located on six parcels (052-170-039-000, 052-170-067-000, 052-170-031-000, 052-170-032-000, 052-170-056-000, and 052-170-037-000) approximately 6.5 miles southwest of the City of El Centro, California and 7.5 miles directly west of Calexico, California. The geographic center of the Project roughly corresponds with 32° 41' 13" North and 115° 40' 8" West, at an elevation of 19 feet below sea level. The Project site is generally located south of Kubler Road, east of the Westside Main Canal, north of State Route 98, and west of Pulliam Road.

Figure 2.0-1 depicts the regional location of the Project. **Figure 2.0-2** shows the Project site and surrounding area. **Figure 2.0-3** is a conceptual phasing configuration of the Project. **Figure 2.0-4** is a site plan showing the layout of the Project and its various components.

2.1.4 OWNERSHIP

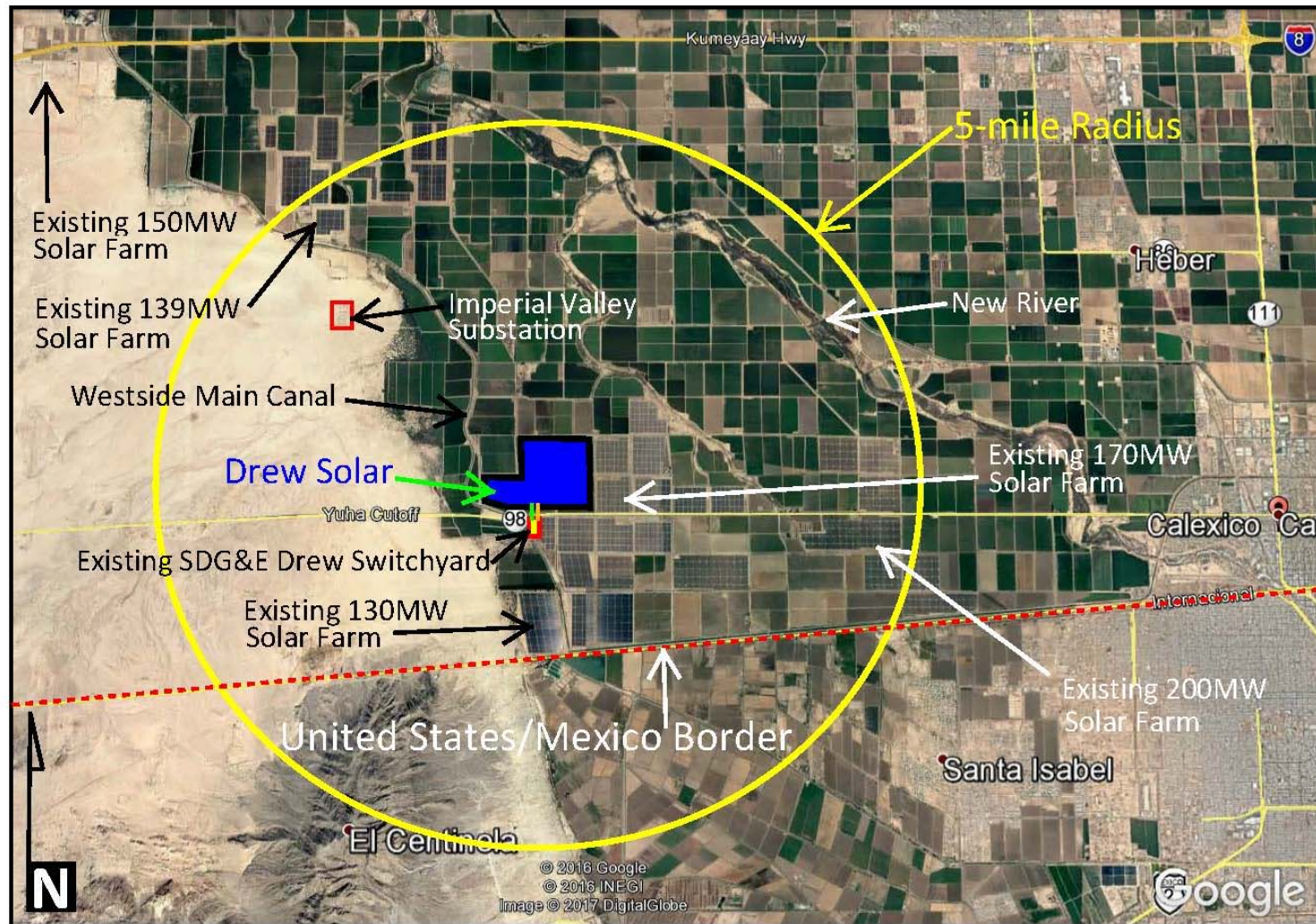
The property is owned by the IID. Drew Solar, LLC will lease the property for the construction, operation and decommissioning of the facility.

2.0 PROJECT DESCRIPTION



Source: Google Earth 2018.

FIGURE 2.0-1
REGIONAL LOCATION MAP

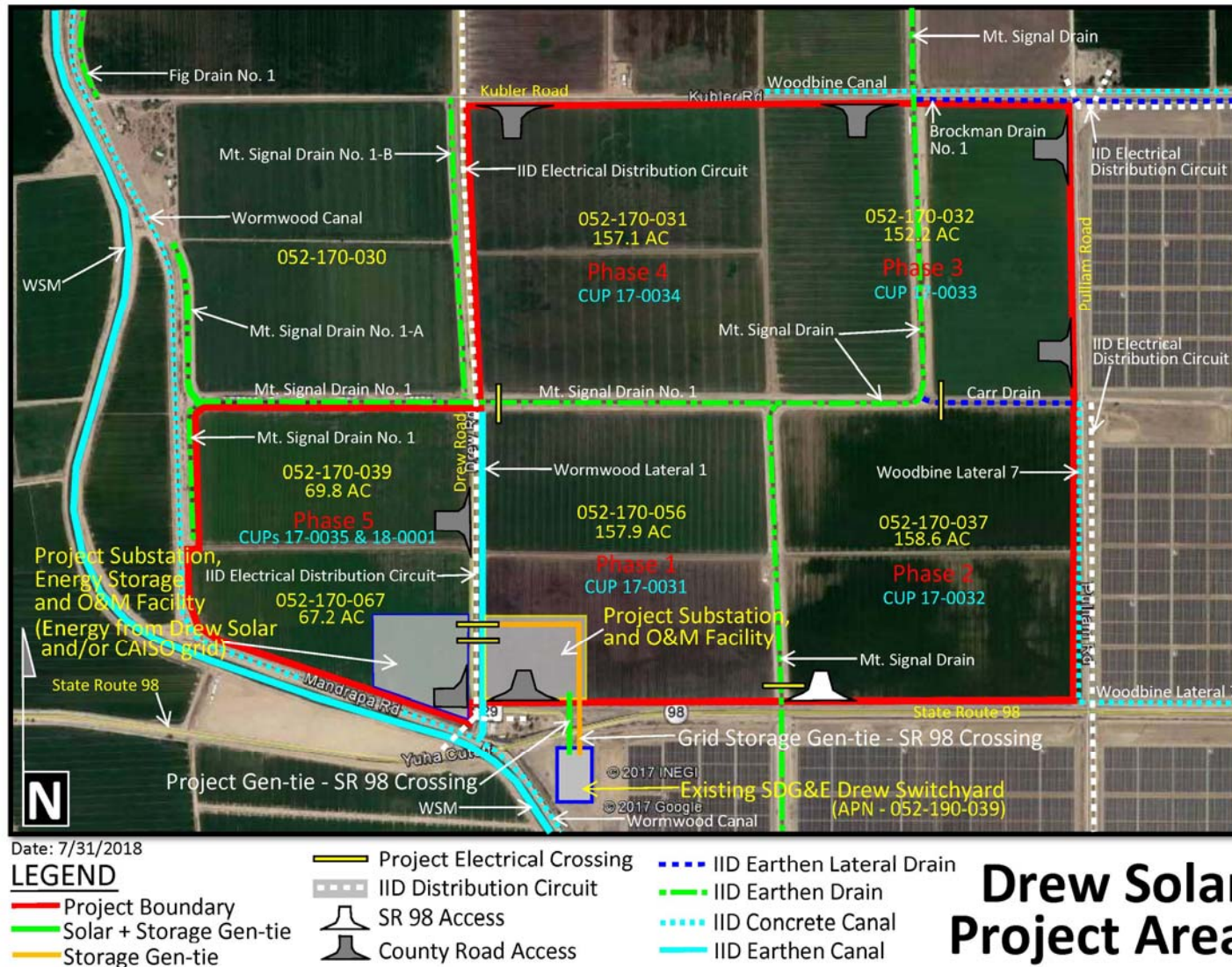


Date: 6/4/2018

Source: Drew Solar 2018.

FIGURE 2.0-2
PROJECT VICINITY MAP

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Source: Drew Solar 2018.

**FIGURE 2.0-3
PROJECT PHASING MAP**

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Source: Drew Solar 2018.

**FIGURE 2.0-4
SITE PLAN**

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2.1.5 PROJECT CHARACTERISTICS

A. EXISTING ON-SITE USES AND SURROUNDING USES

Figure 2.0-3 shows the boundary of the Project site and the six parcels which total approximately 855 gross and 762.8 net farmable acres of lands that have been used for agriculture. **Table 2.0-1** provides the Assessor's Parcel Numbers (APNs), approximate acreage, zoning and current use of each parcel that comprise the Project site.

The Project site is located in the southwestern portion of Imperial County. There are several other approved/built solar projects in the immediate vicinity surrounding the Project site. The other projects include Centinela Solar, the Mount Signal and Calexico Solar projects, Campo Verde Solar, Wistaria Ranch Solar and Imperial Solar Energy Center South. The Project is surrounded on 2 sides by the existing Centinela Solar project and is adjacent to the existing Drew Switchyard, which a majority of the projects in the area interconnect to. The rest of the area is predominantly agricultural with very few residences and agricultural buildings mixed in.

B. GENERAL PLAN AND ZONING DESIGNATIONS

The Imperial County General Plan Land Use Element designates the Project site as "Agriculture" (refer to Figure 4.2-1 in Section 4.2, Land Use). As shown in **Table 2.0-1**, lands on which the Drew Solar Project is proposed are currently zoned A-2 (General Agricultural Zone), A-2-R (General Agricultural Zone/Rural Zone), and A-3 (Heavy Agricultural) (refer to Figure 4.2-2 in Section 4.2, Land Use). Solar energy electrical generators, electrical power generating plants, substation(s), and facilities for the transmission of electrical energy are allowed as conditional uses in Agricultural zones (Land Use Ordinance, Title 9, Division 5, Sections 90508.02 and 90509.02).

**TABLE 2.0-1
PROJECT SITE PARCELS**

APN	Net Acres	Gross Acres	Zoning	Current Use
052-170-039	69.8	80.93	A-2 & A-3	Farmed for flat crops
052-170-067	67.2	72.04	A-2	Farmed for flat crops
052-170-031	157.1	168.61	A-2 & A-2-R	Farmed for flat crops
052-170-032	152.2	178.07	A-2-R	Farmed for flat crops
052-170-056	157.9	168.31	A-2	Farmed for flat crops
052-170-037	158.6	176.24	A-2 & A-2-R	Farmed for flat crops

Sources: Drew Solar 2017; Imperial County Planning & Development Services, 2017; IID Real Estate Department, 2017

Notes: A-2 = Agricultural; General A-2-R = General Agricultural Rural Zone; A-3 = Agricultural, Heavy

The Project is processing a Parcel Map to fix the existing inconsistency with the legal and physical boundary of the SW ¼ Section of the Project Site (APNs: 052-170-039 & 052-170-067), including APN 052-170-030 to the north of the Project Site as part of the Parcel Map. In doing so the net farmable acreage of the Project Site will remain the same (762.8 net acres), and the gross acreage will increase from 844.2 gross acres to approximately 855 gross acres once the Parcel Map is recorded.

Development of a solar facility would preclude the use of approximately 762.8 net farmable acres for agricultural production for life of the Project. The development agreement would enable the CUPs to be valid for a total of 40 years with commencement of construction starting any time within 10 years of CUP approval. At the end of the useful life of the Project, the solar facility would be decommissioned and reclaimed to its original condition.

C. PROJECT COMPONENTS

Each of the components of the proposed Project is described in detail below. The components would be installed as part of construction, in use during operation, and removed and decommissioned as part of reclamation.

The net electrical output of the proposed Project is anticipated to be approximately 100 MWac. The actual net electrical output of the Project will depend upon the technology selected and final design and layout. The design and construction of the buildings, solar arrays (panels, etc.), energy storage facilities, and auxiliary facilities will be consistent with County building standards.

Solar Energy Generation Component - This component includes the construction, operation, and decommissioning of the five proposed solar energy generation parcels (Phases 1-5), inclusive of the shared Phase 5 Operation and Maintenance Complex, substation(s), and supporting transmission and Gen-Tie facilities. This component could be built out under either the Full Build-out Scenario or Phased Build-out Scenario.

Energy Storage Component – This includes the construction, operation, and decommissioning of the proposed energy storage facilities in conjunction with the storage of grid and solar energy generated by the Project. This component could be built out under either the Full Build-out Scenario or Phased Build-out Scenario.

Drew Switchyard and Gen-Tie Component - This component includes the construction, operation and decommissioning of required improvements at the existing Drew Switchyard facility and supporting transmission and Gen-Tie facilities in order to accommodate the Project's proposed utilization of the facility. This component is considered to be built out at one time under both the Full Build-out and Phased Build-out Scenario. Therefore, phased-buildout is not analyzed separately for this component.

Solar Technology

The Project may include only one PV technology or a combination of various PV technologies, including but not limited to crystalline silicon-based systems, thin-film systems, and perovskites.

When sunlight strikes a PV module, the energy absorbed is transferred to electrons in the atoms of the semiconductor causing them to escape from their normal positions and become part of the current in an electrical circuit. The PV modules convert the sunlight directly into low-voltage DC electricity that is subsequently transformed to AC electricity through an inverter. The system only operates when the sun is shining during daylight hours. The system operates at peak output when the sunlight is most intense, though it also produces power in low light conditions.

Fixed-Tilt and Tracker Structures

The Project may include only one PV technology or a combination of various PV technologies, including but not limited to crystalline silicon-based systems, bifacial modules, thin-film systems and perovskites. Depending on the selected manufacturer for the PV modules, the modules will be mounted on fixed-tilt or single-axis tracking structures. The modules will be grouped in nominal 1 to 4MW-AC arrays. Fixed tilt arrays will be oriented in east-west rows and will face in a generally southern orientation with a tilt angle between 10 and 35 degrees to maximize the amount of incidental solar radiation absorbed over the year. Single-axis trackers typically rotate ± 60 degrees (0 degrees is horizontal) along a nominally north-south axis to track the sun's movement throughout the day. Structural support elements will be

2.0 PROJECT DESCRIPTION

constructed of corrosion-resistant steel, aluminum, or equivalent members that are attached to circular piers or I-beam posts that will be driven into the prepared base grade of the Project site. The solar array field is arranged in groups called “blocks.”

Figure 2.0-5 depicts a typical array layout. **Figure 2.0-6** is a graphic showing tracker details. The entire array block is connected to an inverter and transformer station to convert the current from DC to AC and step up the voltage to a higher voltage which is more efficient for transmitting power to the project substation(s).

Inverters and Pad-mounted Transformers

At the center of each array is a power conversion station where inverters take the DC power output from the PV modules and convert it to AC power. **Figure 2.0-7** provides an elevation of a typical inverter station. The adjacent pad-mounted transformer steps the voltage up to a medium voltage level. The medium

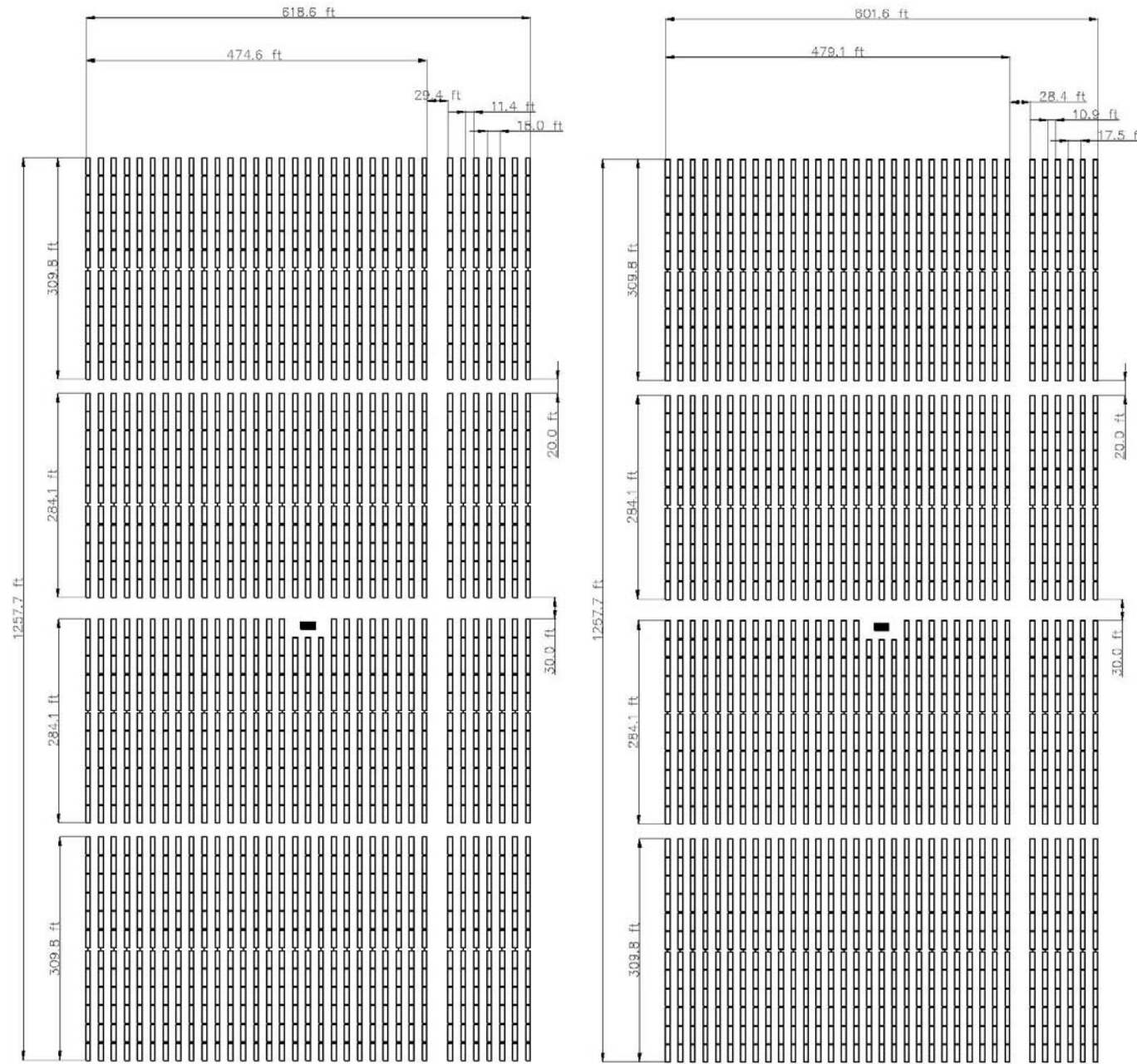
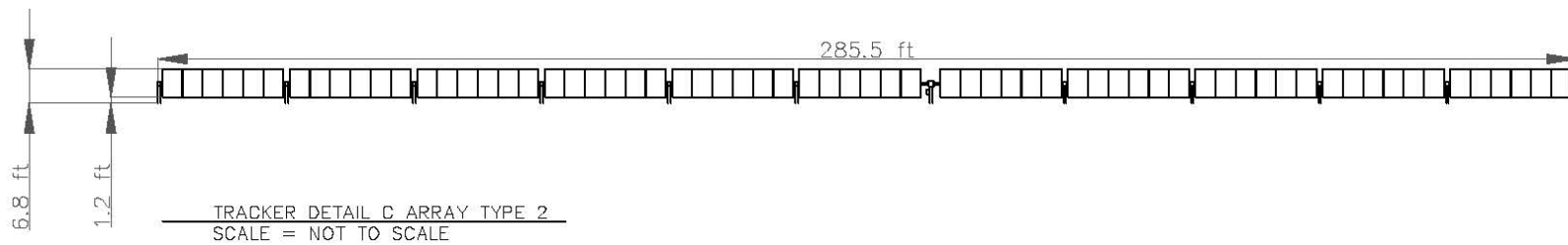
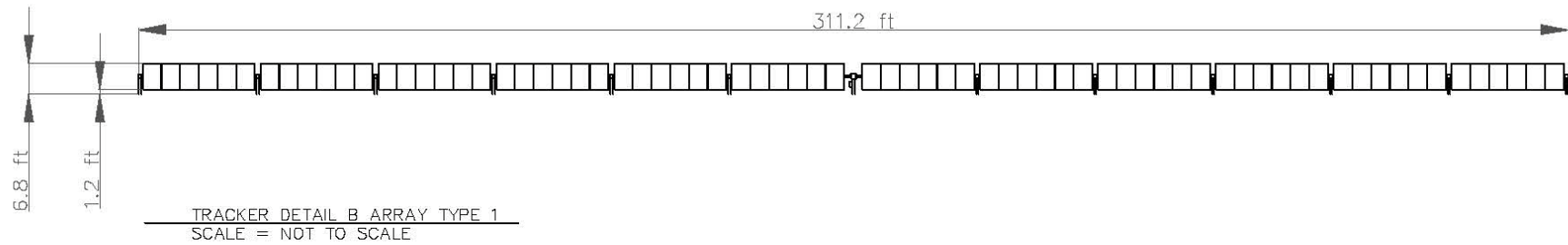
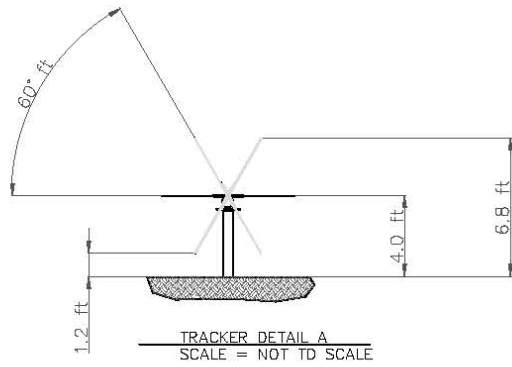


FIGURE 2.0-5

Source: Revolution Labs 2017. ILS

2.0 PROJECT DESCRIPTION



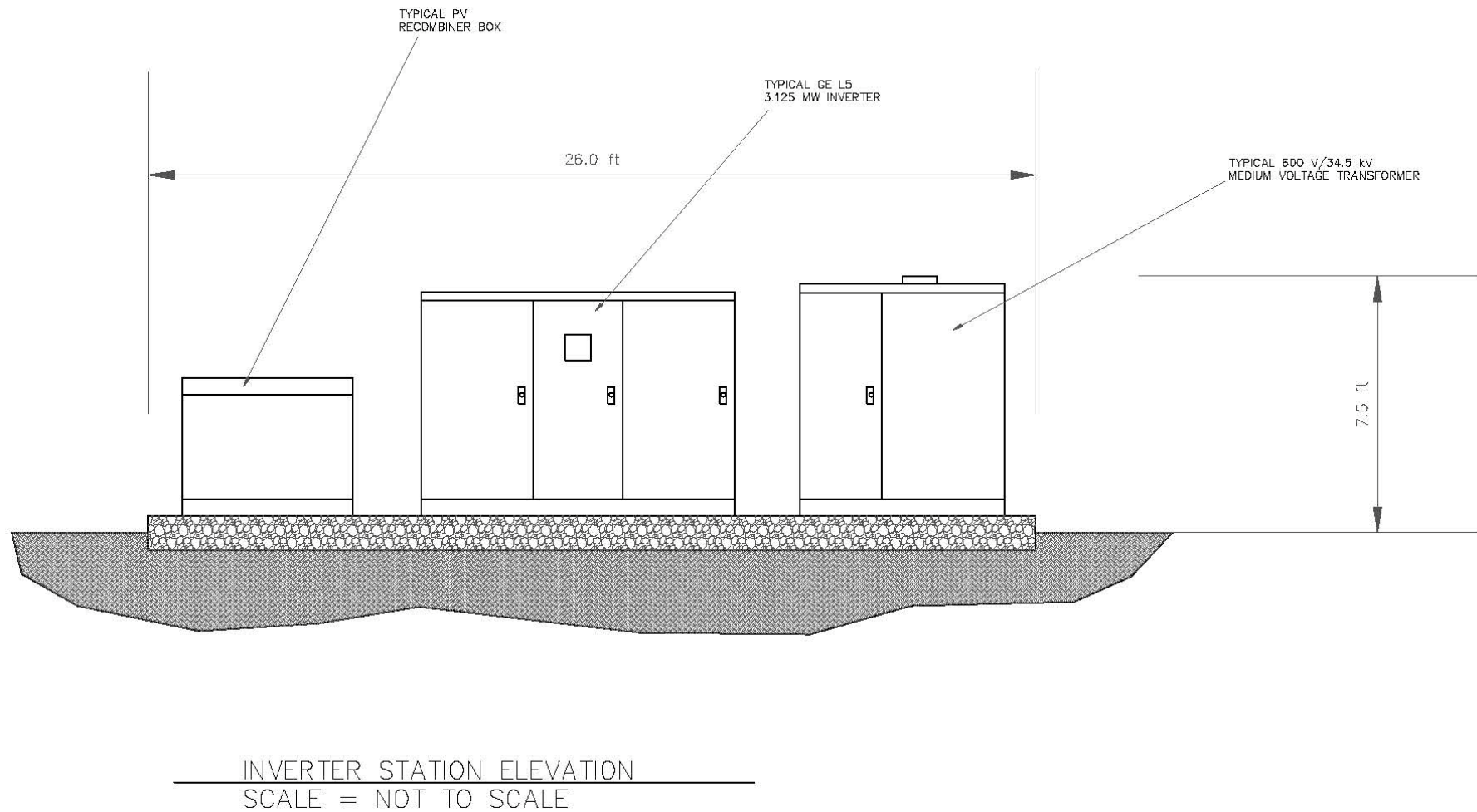


FIGURE 2.0-7
INVERTER STATION ELEVATION

Source: Revolution Labs 2017.

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voltage outputs from each of the pad-mounted transformers are collected together in combining switchgear located at discrete locations on the Project site. The medium voltage output from the combining switchgear will be connected to the Project substation(s) where it will then be stepped up to 230-kV for export to the grid. The Project's Gen-ties will interconnect to the existing Drew Switchyard.

Substation and Switchyard

An on-site substation will step-up the voltage from the collection level voltage to 230-kV. Breakers, buswork, protective relaying, Supervisory Control and Data Acquisition (SCADA), and associated substation equipment will be constructed on the Project site. The communication system may include above or below ground fiber optic cable or microwave tower. The Project will be interconnected to the regional transmission system from the onsite substation(s)/switchyard(s) via the Gen-ties facilities described in this project description. **Figure 2.0-8** depicts a typical substation configuration.

Transmission Interconnection Facilities

The Project plans to connect to San Diego Gas & Electric's (SDG&E) Imperial Valley Substation by way of the existing Drew Switchyard.

Whether or not the Project is built in phases or at one time, the use of collector lines to collect electricity from the array fields to the Project substation(s) would remain similar. Skid mounted enclosed switchgear would be used within panel fields/phases to collect and transmit the electricity from the panel array fields to the Project substation(s).

In order to minimize impacts to the environment, the Project will utilize the existing Drew Switchyard as its point of interconnection. As illustrated in **Figures 2.0 -2, 2.0-3, 2.0-4 and 2.0-9**, the Project's Gen-ties are proposed to extend south from the south end of the Project site across Drew Road and State Route 98 into the existing Drew Switchyard located on APN 052-190-039-000. A new pole may be constructed on the existing Centinela Solar project on APN 052-190-041-000 and its line cutover into the new bay constructed by Drew Solar in the existing Drew Switchyard in order to minimize power line crossings. This will require vehicles and equipment to work at each tower location as well as to utilize pull sites along the Gen-ties. The structures for the 230-kV Gen-ties line are expected to be similar to those shown in **Figure 2.0-10**. If the Project is able to collocate with other facilities in the area, the Project may construct a new pole to the east of the existing pole that is on the northerly side of the existing Drew Switchyard in order to reduce Gen-tie crossings.

Operations and Maintenance (O&M) Building Complex

The Operations and Maintenance (O&M) Building Complexes may contain administrative offices, parts storage, a maintenance shop, plant security systems, a site control center (**Figure 2.0-11**), and plant monitoring equipment. A specific design for the building(s) has not yet been selected as the technology utilized in utility scale solar energy production continues to improve dramatically at a rapid pace. The final layout will be based on the technology selected. The building(s) may have exterior lighting on motion sensors and will have fire and security alarms. The building(s) will be located on a graded area(s) with adjacent worker parking. The parking lot will be surfaced with concrete or asphalt per County standards and have a handicapped parking space. Additionally, the access road/driveway to the parking lot would be surfaced with either concrete asphalt per County standards. The Project will collect wastewater from sanitary facilities such as sinks and toilets in the O&M building(s). This waste stream will be sent to an on-site sanitary waste septic system and leach field to be installed in compliance with standards established by Imperial County Environmental Health Services. Alternatively, the Project may be designed to direct these waste streams to an underground tank for storage until it is pumped out, on a periodic or as-needed basis, and transported for disposal at a licensed waste treatment facility. During periodic major maintenance events, portable restroom facilities may be provided to accommodate

additional maintenance workers. An on-site water treatment facility may be constructed. Each phase may have its own O&M Building Complex, and Phase 5 may have two O&M Building Complexes.

Energy Storage

The Project will likely incorporate an energy storage component and each phase may have its own energy storage component. The field of energy storage is rapidly advancing; thus, a single technology or provider has not been selected for the energy storage portion of the Project. The storage components of the Project will utilize storage technologies that operate based upon the principles of potential including but not limited to compressed air or pumped storage, lithium (ion, oxygen, polymer, phosphate, sulphur), Nickel Metal Hydride, Nickel Cadmium, Lead Acid, antiperovskites or other batteries, including but not limited to solid state batteries that may be approved for commercial use within the United States of America, and flywheels. The storage components may be centralized and located adjacent to the substation or switchgear, or alternatively, the energy storage components may be distributed throughout the plant adjacent to individual power conversion centers. The storage components would be housed in a warehouse type building (**Figure 2.0-12**) or alternatively in smaller modular structures such as cargo shipping containers (**Figure 2.0-13**). The Project may store energy generated onsite as well as energy from the CAISO grid.

The Renewable Energy and Transmission Element identifies public benefits associated with renewable energy. As demonstrated in Table 2.0-2, the Project with energy storage incorporated contributes to and enhances each of the eight public benefits associated with renewable energy generation:

**TABLE 2.0-2
ENERGY STORAGE AND THE PUBLIC BENEFITS ASSOCIATED WITH RENEWABLE ENERGY AND TRANSMISSION**

<u>Public Benefits of Renewable Energy and Transmission</u>	<u>How Energy Storage Achieves the Benefit</u>
Fiscal benefit of sales tax revenues from the purchase of equipment, goods and services.	Equipment purchases related to the design, construction, and operations of energy storage facilities will generate additional sales tax revenues.
Lease benefits to IID, a public agency.	The Project will be built on land owned by the local public utility, IID.
Social and fiscal benefits from increased economic activity and local employment opportunities that do not threaten the economic viability of other industries	The construction and operational phases of the Project will generate increased economic activity by bringing new jobs to the local community.
Improvements in technology to reduce costs of electrical generation	Energy storage enables better energy balancing and great grid reliability by solving the discrepancy between solar energy's peak demand and peak supply times, benefitting both the region and the state in achieving critically needed energy balancing. Energy balancing, in turn, levelizes the cost of energy. By storing excess energy generated during daylight hours, energy storage would increase the supply of energy available during peak demand, thereby offsetting some of the

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	higher costs of energy consumption generally associated with peak nighttime demand.
Reduction in potential greenhouse gases by displacing fossil-fuel-generated electricity with renewable energy power which does not add to the greenhouse effect	Energy storage will help the region and the State achieve greenhouse gas reduction targets by allowing the CAISO to procure electricity from renewable resources held in storage rather than from fossil-fuel sources.
Contribution towards meeting the State of California's RPS	Aid California in meeting its RPS requirements by contributing to the supply of renewable electricity for CAISO's procurement.
Minimization of impacts to local communities, agriculture and sensitive environmental resources	Energy storage leverages existing renewable energy resources and reduces the need for fossil fuel-derived sources of electricity, thus reducing potential air quality and GHG emissions. The Project is sited on previously disturbed agricultural land to minimize impacts to sensitive environmental species. The Project Site will be restored to farmable conditions at the end of the life of the Project.

Additional benefits of energy storage include the following:

Energy storage will likely reduce blackouts and contribute to grid reliability. Customer demand on the grid is highest typically during the summer months, when energy regulators are most concerned about the possibility of brownouts and blackouts. Energy storage will increase the region's energy storage capacity by establishing energy reserves that can be used during this high demand period. Energy storage is a cost-effective and environmentally friendly technology to address ramp, regulation, capacity, ancillary services, system reliability and power quality because smoothing the power supply and providing a spinning reserve are functions usually performed by costly burning of fossil fuels. Further, energy storage can respond rapidly to increased demand / decreased supply (e.g., when clouds block the sun), whereas a conventional steam or gas-fired generator takes much longer and can result in supply deficits during the ramp-up period or when excess energy is kept on the grid and facilities are kept on standby to avoid excessive ramping times. This can make a significant difference when trying to correct frequency issues or meet reliability standards established by the North American Electric Reliability Corporation.

The large amount of intermittent renewable energy located at the Imperial Valley Substation has the potential to create challenges for CAISO and IID due to fluctuating weather conditions. For example, clear skies will generate significant solar resources (more than 1,000 MW) to the Imperial Valley Substation, but, cloud cover could significantly and suddenly reduce that generation to 100 MW. These variations have the potential to disrupt grid reliability. The Project's energy storage component would be capable of storing enough energy to discharge and maintain the 1,000MW output even during extended cloud cover.

The Applicant is proposing to install the energy storage facilities on with the Project Site given its close proximity to the existing Drew Switchyard. This location is ideal to help accommodate the high levels of

intermittent solar energy flowing through the existing Drew Switchyard and thus minimizing the risks of grid instability and outages.

Energy storage promotes stable electricity prices. Energy storage will enhance the Project's solar generation facility by providing for storage of energy generated during peak supply for use during peak demand periods, thus reducing the need to call up more expensive gas peaker plants to meet peak demand. Energy storage coupled with solar will allow the Project to supply stable electricity prices over the long term by eliminating potential fuel price volatility associated with use of fossil fuels, thus promoting stable electricity prices.

Energy Storage maximizes regional investments in transmission infrastructure. Energy storage will help manage transmission congestion, which in turn will help increase overall load carrying capacity. Further, by reducing the demand on transmission and distribution infrastructure during peak generation hours, energy storage will help extend the life of existing transmission infrastructure and defer repair and replacement costs that are often passed on to the public through increased rates.

Site Access / Traffic and Circulation

There are County maintained roads providing access throughout the Project Site. Access to the Project Site will be from Kubler Road, Drew Road, Pulliam Road, and State Route 98. Access to components of the solar field will be controlled through security gates at several entrances. Multiple gate restricted access points will be used during construction, operation and decommissioning.

Roadway and IID Crossings

The Project will include electric and vehicular crossings of State facilities, IID facilities and County facilities. Due to the nature of the Project and the rapidly changing technology, the exact locations of the crossings are not known at this time. However, it should be assumed for California Environmental Quality Act (CEQA) analysis purposes that wherever an Imperial Irrigation District (IID) facility (drain, irrigation canal, electric line, etc.) or County or State facility (road, etc.) intersect the Project, an electric or vehicular access crossing will occur. The Project crossings will not interfere with the purpose or continued use of these Agencies' facilities. For instance, where a drain flows, the Project crossing or access point will still allow the drain to flow.

2.0 PROJECT DESCRIPTION



Source: Drew Solar 2018.

**FIGURE 2.0-8
TYPICAL PROJECT SUBSTATION**



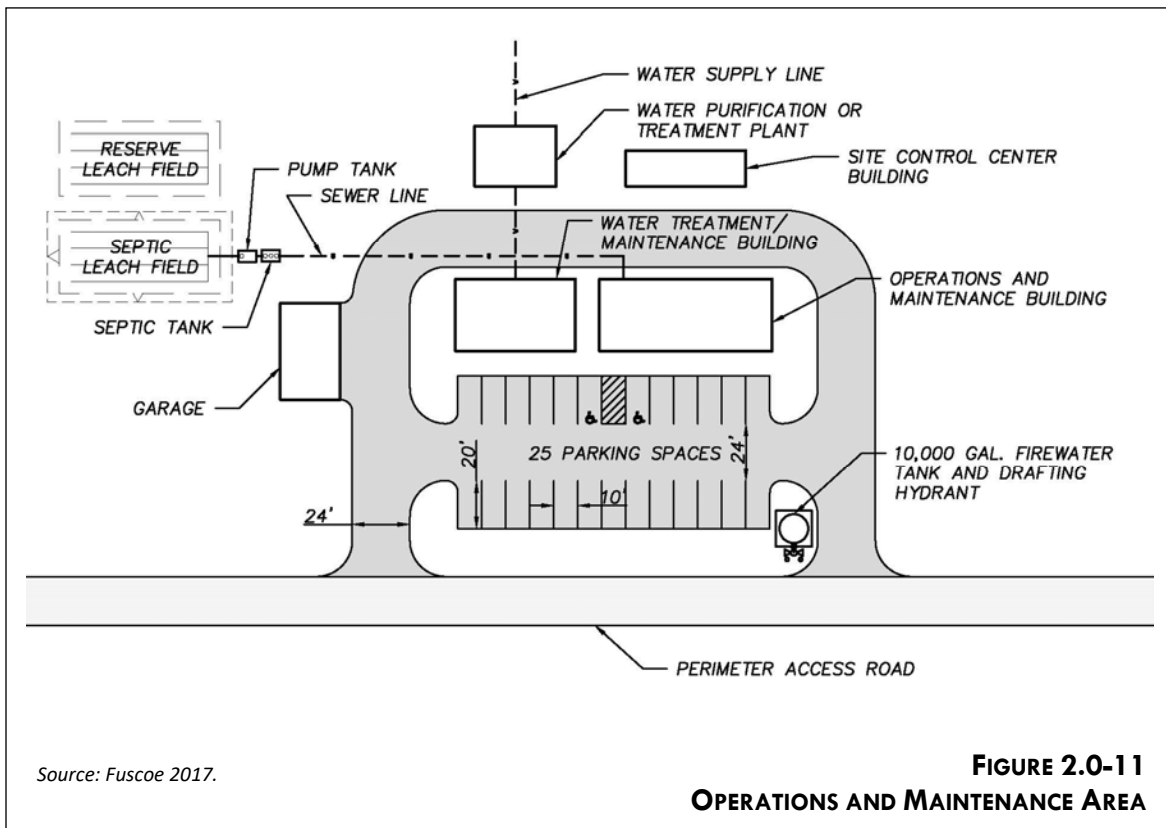
Source: Drew Solar 2018.

**FIGURE 2.0-9 GEN-TIE TO EXISTING DREW
SWITCHYARD**



Source: Drew Solar 2018.

FIGURE 2.0-10
TYPICAL MONOPOLE STRUCTURE



Source: Fuscoe 2017.

FIGURE 2.0-11
OPERATIONS AND MAINTENANCE AREA

2.0 PROJECT DESCRIPTION



Source: Drew Solar 2018.

FIGURE 2.0-12
BATTERY ENERGY STORAGE SYSTEM BUILDING

Electric Service

Permanent electric service may be obtained from IID for the O&M building(s) and auxiliary loads. Temporary electric service will be obtained for primary construction logistical areas. Generator power may be utilized for temporary portable construction trailer(s), construction and/or for decommissioning.

Fire Control

The PV modules and ancillary equipment are constructed of fire-resistant material. Additionally, routine weed abatement and landscape maintenance will occur. As such, the Project represents a negligible increase in fire potential.

However, a Fire Management Plan will be prepared in accordance with Fire Department requirements for access and will not impact the ability to provide emergency access to the Project site. Access to nearby properties will not be hindered or restricted by the Project.

D. PROJECT CONSTRUCTION

Construction Workers

The Project would generate construction jobs. The number of workers on the Project site is expected to vary over the construction period. However, the number of construction workers onsite is expected to average up to 250 workers daily.



Source: Drew Solar 2018.

**FIGURE 2.0-13
BATTERY ENERGY STORAGE SYSTEM CONTAINERS**

2.0 PROJECT DESCRIPTION

Typical construction work hours are expected to be from 7:00 am to 7:00 pm Monday through Friday, and 9:00 am to 5:00 pm on Saturdays. The schedule may change based on a need to comply with various biological mitigation measures, overall construction timing, or worker safety such as avoidance of excessive midday heat. Any deviation from construction work hours allowed in the General Plan Noise Element would require Planning Director approval.

Construction Duration

The construction equipment, materials, and labor involved in building the Project remain similar whether the project is constructed in phases over time or built out over an 18-month period. The 18-month buildout of the entire Project at once results in greater intensity of labor and equipment during the construction period.

Phasing

This EIR contemplates a Phased CUP Scenario and a Full Build-out Scenario. The Phased CUP Scenario refers to the development scenario where the Project is constructed in phases by individual CUP (i.e. CUP 17-0031) or a group of CUPs (i.e. CUP 17-0031, CUP 17-0035 and CUP 18-0001) as appropriate to accommodate market demand. This scenario also refers to the Gen-Ties, electrical collector lines and other on-site and off-site ancillary facilities proposed for development as part of the Project. Each CUP of the project may have its own off-taker and operate independently from the other CUPs. The phases shown on the phasing plan (**Figure 2.0-3**) are conceptual and will not be constructed in any particular order. The phases may be aggregated during construction and operations/maintenance so that multiple phases could be built at one time. All phases are anticipated to utilize proposed Gen-ties that run from the south end of the Project site across Drew Road and State Route 98 into the existing Drew Switchyard located on APN 052-190-039. The phases are anticipated to use main Project switchyard; however, each phase may independently construct its own up to 230-kv step up transformer and switchyard. **Table 2.0-3** provides a list of the conceptual phases along with the APNs and approximate acreage.

The Full Build-out Scenario refers to all six CUPs (including five CUPs for solar energy generating and storage systems and one CUP for energy storage as a component of solar), Gen-Ties, improvements to the existing Drew Switchyard and other on-site and off-site ancillary facilities proposed for development as part of the Project.

If the Project is constructed at once, construction would take place over approximately 18 months. If the phases are constructed over time (up to 10 years from issuance of the CUPs), each phase could take approximately 12 months and construction of some phases may overlap with one another.

TABLE 2.0-3 PHASING - NET & GROSS ACRES		
APN	Net Acreage	Gross Acreage
Phase 1		
052-170-056-000	157.9 Acres	168.31
Phase 2		
052-170-037-000	158.6 Acres	176.24
Phase 3		
052-170-031-000	152.2 Acres	168.61
Phase 4		
052-170-032-000	157.1 Acres	178.07
Phase 5		
052-170-039-000	69.8 Acres	80.93

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052-170-067-000	67.2 Acres	72.04
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Note: The Project is processing a Parcel Map to fix the existing inconsistency with the legal and physical boundary of the SW ¼ Section of the Project Site (APNs: 052-170-039 & 052-170-067), including APN 052-170-030 to the north of the Project Site as part of the Parcel Map. In doing so the net farmable acreage of the Project Site will remain the same (762.8 net acres), and the gross acreage will increase from 844.2 gross acres to approximately 855 gross acres once the Parcel Map is recorded.

Source: Drew Solar 2018.

Temporary Construction Facilities

During construction, temporary facilities will be developed on-site to facilitate the construction process. These facilities may include construction trailers, temporary septic systems or holding tanks, connections to adjacent IID raw water canals, parking areas, material receiving / storage areas, water storage ponds, construction power service, recycling / waste handling areas, and others. These facilities will be located at the construction areas designated on the final site plan(s).

Laydown Areas

At full build-out, most of the Project site will be disturbed by construction of the Project. Temporary construction lay down, construction trailers, and parking areas will be provided within the Project Site. Due to the size of the Project site, the solar field lay down areas may be relocated periodically within the solar field acreage as the project is built out in phases.

Disturbance

**TABLE 2.0-4
CONSERVATIVELY CALCULATED PROJECT DISTURBED ACRES**

Property/Project Component	Disturbed Acres (gross)
Project Site	855
Project Gen-Ties	0.8
Access Roads	N/A
Total Project Disturbance	855.8

Grading and Drainage

Site preparation will be planned and designed to minimize the amount of earth movement required for the Project to the extent feasible. The hydrology design will be given first priority in order to protect the Project's facilities and adjacent facilities including any IID/County facilities from large storm events. It is the intent of the Project to support the panels on driven piles. Additional compaction of the soil in order to support the building and traffic loads as well as the PV module supports may be required and is dependent on final project engineering design.

The existing on-site drainage patterns will be maintained to the greatest extent feasible. It may be necessary to remove, relocate and/or fill in portions of the existing drainage ditches or delivery canals to accommodate the final panel layout for the Project. The final engineering design for these facilities will be reviewed by IID and the County to be sure that the purpose for the facilities (if still needed) will still be met.

Dust Control

Dust generated during construction would be controlled by watering and, as necessary, the use of other dust suppression methods and materials accepted by ICAPCD or CARB. During grading, actively

2.0 PROJECT DESCRIPTION

disturbed on-site areas and unpaved roads would be watered at least three times a day as necessary to reduce fugitive dust emissions. In addition, speeds would be limited to 15-mile per hour (mph) speed during construction.

Water Use

During construction of the Project, water will be required for a variety of construction activities, including dust suppression, earth compaction, the creation of engineered fill, and concrete preparation. Construction-phase water demand will be greatest during site grading which will consist of disc and roll compaction over the site. An estimated total of 1,200 acre-feet of water will be used for the Project dust control and other construction activities during Project construction. An estimated 1,200 acre-feet of water will be used for decommissioning.

Construction Traffic

Daily trip generation during the construction of the Project would be from delivery of equipment and supplies and the commuting of the construction workforce. Deliveries of equipment and supplies to the Project site would also vary over the construction period but have the potential to range from 5 to 40 daily trips, averaging approximately 10 daily trips. Parking for Project-related vehicles will be provided onsite during construction. **Table 2.0-5** summarizes project construction trip generation.

**TABLE 2.0-5
DREW SOLAR PROJECT- CONSTRUCTION TRIP GENERATION**

Proposed Construction Related Traffic	ADT	6-7 AM		7-8 AM		4-5 PM		5-6 PM	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT
Construction Workers on 4-10 Shift (75% of 250) ¹	282	141	0	0	0	0	0	0	141
Construction Workers on 5-8 Shift (25% of 250) ²	94	0	0	47	0	0	47	0	0
Equipment and Construction Trucks (with PCE) ³	60	3	3	3	3	3	3	3	3
Total Traffic During Peak Construction Period	436	144	3	50	3	3	50	3	144
Daily and Higher Peak Hour Used For Analysis	436	144	3					3	144

Notes: 1) Applicant estimates the 4 days at 10 hrs/day (4-10s) shift to include about 188 workers (75% of the total 250 peak work force) with about 25% carpooling (47) and riding with the 75% (141), thus the inbound is 141 trips and the ADT is 282. 2) Applicant estimates the 5 days at 8 hrs/day (5-8) shift to include about 62 workers (25% of the total 250 peak work force) with about 25% carpooling (15) and riding with the 75% (47), thus the inbound is 47 and the ADT is 94. 3) Approx. 10 daily trucks with a Passenger Car Equivalent (PCE) factor of 3 applied to each truck equals 60 ADT (10 trucks x 2 x 3 PCE = 60 ADT) that are anticipated to have a frequency of about 1 in and 1 out per hour for a peak period volume of 6 (with PCE).

Based on the expected trips generated, traffic on the local roads would increase during construction but impacts to current traffic patterns are anticipated to be minimal. With a phased Project, the total number of trips generated during construction would be about the same, but the number of daily trips would be reduced and the number of days to complete construction would be extended resulting in a decrease in intensity.

Storm Water

The Proposed Project would retain to the greatest extent feasible the existing drainage characteristics of the Project site. Existing low-lying areas which receive runoff will continue to do so in the proposed conditions. Shallow on-site retention basins will be utilized. Where on-site soils have the potential to

infiltrate runoff, runoff will be infiltrated. Where infiltration is not feasible, runoff may be detained and slowly released to the IID Drain system such that the peak flowrate of runoff from the 100-year storm event in the proposed condition is equal to or less than it is in the existing condition.

Staging Areas

If the Project is constructed in phases, it is anticipated to be constructed in a counterclockwise manner starting with the parcel that is across the street from the existing Drew Switchyard. It is anticipated that any staging would take place within the parcel that is under construction.

Waste

Small amounts of trash would be generated during construction from packaging materials delivered to the Project site. Construction related waste would be transported to a local landfill authorized to accept this waste for disposal or an appropriate recycling center authorized to accept recyclable materials.

Hazardous Materials

Very little hazardous waste (waste oil and lubricants, spill clean-ups, etc.) is expected to be generated from the Project during construction and decommissioning. Fuel that may be used on site during construction and decommissioning would be stored in secondary containment. The Project will also be required to comply with State laws and County Ordinance restrictions which regulate and control hazardous materials.

Energy Storage systems comprised of compressed air or pumped storage, lithium (ion, oxygen, polymer, phosphate, sulphur), Nickel Metal Hydride, Nickel Cadmium, Lead Acid, antiperovskites or other batteries include materials that run the risk of overheating and catching fire if equipment is not operated properly. The project would operate in accordance with all applicable regulatory requirements, including but not limited to the following, which would mitigate the risk of fires and other hazardous events:

Energy Storage Buildings

- Fire suppression system
- Climate control
- Mechanical ventilation
- Non-corrosive flooring e.g., fiberglass grated flooring

Energy Storage Maintenance

- Operate energy storage systems per manufacture's specifications.
- Monitor energy storage levels and temperatures while operating.
- Ensure temperature controls are set to specified temperatures.
- Observe run time with a full-charged battery.
- Ensure batteries self-discharge.
- Check batteries before placing in storage for irregularities in charge status.

Handling Precautions

2.0 PROJECT DESCRIPTION

- Avoid exposing lithium batteries to excessive vibration.
- Do not keep batteries in high or low temperatures.
- Always handle batteries with caution.
- Place batteries in storage after the building reaches compliant temperature levels.
- Do not use damaged batteries.
- In case of contact with fluid do not rub eyes. Immediately flush eyes.
- Wash hands after handling batteries.
- In the event of contact on clothing, change clothing immediately.

Sanitation

Portable toilets would be located on site during construction and sanitary waste would be removed by a local contractor.

Off-Site Construction Activities

The portion of the Gen-ties crossing the Caltrans right of way over State Route 98 (SR-98) into the existing Drew Switchyard parcel would be approximately 400 feet in length and would be either overhead or underground. A new bay will be constructed inside the existing Drew Switchyard as part of the Project Gen-ties. If the Gen-ties are overhead, there would be one monopole on either side of the SR-98 crossing similar to the monopole that currently exists on the north side of the existing Drew Switchyard. Collector lines will cross Drew Road and IID drains and canals. Drive approaches will be constructed on Drew, Kubler, and Pulliam Roads as well as SR-98.

E. OPERATIONS AND MAINTENANCE

Once construction is completed, the Drew Solar Project begin its operational phase.

Employees

Approximately two to six full-time workers will be employed to operate the generating facility. These personnel will perform maintenance and security functions.

Traffic

No impact to current traffic patterns would result during operation of the Project. Operation of the Project site would be expected to generate approximately 4 to 10 trips per day from maintenance and security personnel.

Security

To ensure the safety of the public and the facility, the property will be fenced, security lighting may be installed, and signs will be posted. Access to the Project site will be controlled, and gates will be installed at the roads entering the property. The fence will be monitored periodically to detect any intrusion into the property. The Project proposes an up to 7-foot chain link fence with 3-strand barb wire placed at the top, extending to a total of up to 8 feet. Landscaping and entry monumentation will be maintained at the entrance to the O&M building(s).

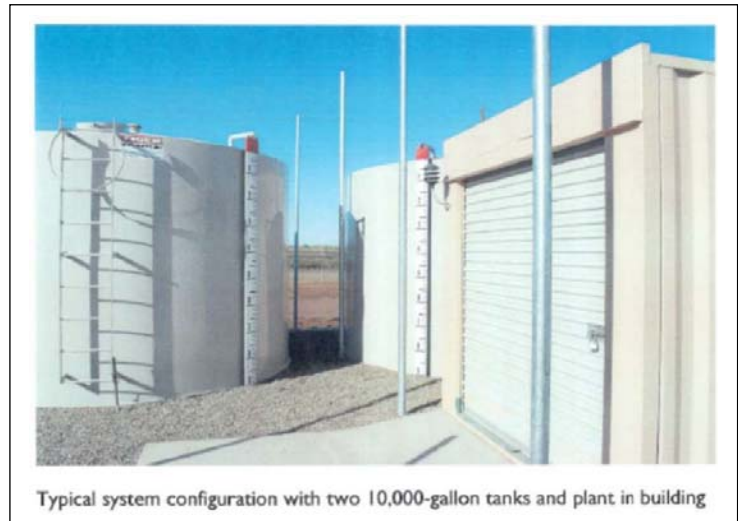
Lighting System

The lighting system will provide operation and maintenance personnel with illumination in both normal and emergency conditions. Lighting will be designed to provide the minimum illumination needed to achieve safety and security objectives and will be shielded and oriented to focus illumination on the desired areas, minimizing light spillover.

Water Use

The Project plans to secure water rights from the IID under the IID's Interim Water Supply Policy for Non- Agricultural Projects. In the event this isn't feasible, the Project will truck water to the Project site for operational purposes, or procure water from IID's applicable water policy/program at that time.

The water used during operations will be used for domestic use and fire protection. Water is typically procured from IID via a long-term Water Supply Agreement with a service pipe connection to an adjacent IID raw water canal. The Project may also use water to wash the solar modules should it be determined to be beneficial to the Project. The Project anticipates a requirement of approximately 60 acre-feet per year during plant operation. Water for fire protection will be stored in a 10,000-gallon tank onsite (similar to that shown in the image above). Project operational water use will be significantly less than the estimated total of 1,200 acre-feet of water to be used during construction, and also significantly less than the estimated total of 1,200 acre-feet of water to be used for decommissioning.



Noise

The primary noise sources during operation of the Project are anticipated to be from inverter tracking motors and blowers (that are used to remove condensation from solar panels), which would be distributed throughout the facility.

Additional noise may be generated by equipment within the substation; typically this includes switches, protection and control equipment, transformers, and the incoming transmission lines. The noise generated by transmission lines and switches has previously been analyzed to be 25 dBA at 50 feet. Transformers within the substation would generate noise levels similar to those at the inverters. Substation switches do not generate an audible noise, and circuit breakers (70 dBA at 65 feet) would not be a common noise source, as they would only operate for short periods of time during an emergency event in order to protect the switches and transformers within the substation.

Communications Systems

The Project will utilize telephone and internet services that will be provided via overhead or underground lines, microwave tower or via cellular service obtained from a local provider.

Waste

Some waste material would be generated during normal operations, and would be hauled off-site. Sanitary waste generated during operations would go to project septic systems and/or periodically be pumped and hauled off-site and disposed of by a licensed contractor.

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The Applicant will provide appropriate training and supervision of on-site personnel throughout construction of all CUPs and regularly during operation of the project regarding management of materials and wastes, and responding to hazardous releases or spills or other Project site emergencies. This training will include the procedures to follow during any Project site emergency, and appropriate reporting of spills, releases, or other emergencies to Imperial County, and local emergency service providers. Either directly or through its contractors, the Applicant will hire several personnel to oversee all aspects of a hazardous materials management plan and follow Best Management Practices (BMPs).

Panel Washing & Project Water Use

Solar panels may be washed on a periodic basis if it determined to be beneficial to the Project. Solar panels would be washed up to four times per year. Approximately 14 acre-feet of water per year of the 60 acre feet of water per year required for Project operations and maintenance will be used for panel washing. Fire protection is estimated to be 1 acre foot of water per year, sanitary water is estimated to be 5 acre feet of water per year, dust suppression is estimated to be 35 acre feet of water per year, and potable water is estimated to be 5 acre feet of water per year.

Weed and Vegetation Management

Invasive / weedy species would be controlled and any non-invasive vegetation that re-establishes within the Project site would be controlled within the solar field. Vegetation growing within the boundaries of the Project Site would be periodically removed manually and/or treated with herbicides. The Applicant would be required to prepare a Pest Management Plan for submission to the Imperial County Agricultural Commission.

Miscellaneous

Other maintenance activities that would be conducted include periodic testing of equipment, inspection and repair of project components, and maintenance of on-site roads and drainage systems (i.e. retention basin[s]).

Electricity Consumption

The Proposed Project may consume an estimated 4.4 MW-hours (Station Service, Trackers, and backfeed) of electrical energy daily from the IID power system. This energy would be used to operate the solar panel trackers, the on-site security system and the solar facility monitoring and control system when the solar panels are not generating power.

Air Quality

Normal operations of the Project would not result in any direct air emissions from the electricity production process as the PV solar panels convert sunlight directly into DC electricity. No fossil fuels are consumed in the process and no pollutants are emitted during normal operations. Daily air pollutant emission sources are anticipated to be limited to vehicular traffic and small engines associated with operations and maintenance activities.

Hazardous Material Handling and Storage

The Project would not use or store large quantities of hazardous chemicals within the Project site during normal operations. Any hazardous materials brought to the Project site would be required to comply with all applicable local, state and federal regulations.

F. DECOMMISSIONING AND RECLAMATION PLANS

The Project is processing a Development Agreement with Imperial County to enable and control a phased build-out of the Project that is capable of meeting changing market demands by authorizing initiation of the CUP or CUPs anytime within a 10 year period. Thereafter, the CUPs are valid for the

remaining period of 40 years from the date of the CUP approval. The requested Development Agreement would provide flexibility to allow the start of construction to commence for up to 10 years after the CUPs are approved. The proposed Project is expected to operate for 30 to 40 years. At the end of its useful life, the Applicant proposes to decommission the Project and reclaim the area associated with surface disturbance. Roads that benefit agricultural activities would be left in place.

The planned operational life of the facility is approximately 30 years. However, if the facility continues to be economically viable, it could be operated for a longer period. The Project will create a decommissioning plan that will be implemented at the end of the Project's life, and will adhere to Imperial County's decommissioning requirements, including, but not limited to:

- Description of the proposed decommissioning measures for the facility and for all appurtenances constructed as part of the facility.
- Description of the activities necessary to restore the Project site to its previous condition.
- Presentation of the costs associated with the proposed decommissioning measures. Discussion of conformance with applicable regulations and with local and regional plans.

In the phased buildout, the phases will be decommissioned independently of one another.

I. DESIGN FEATURES AND BEST MANAGEMENT PRACTICES

Table 2.0-6 identifies draft Applicant-proposed measures that would be incorporated into the proposed Project to reduce impacts to resources.

**TABLE 2.0-6
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF THE DREW SOLAR PROJECT**

AESTHETICS
Visibility
The Project will provide landscaping at Project entrances and the operations and maintenance buildings.
AIR QUALITY
Comply with APCD Rule 800 during construction, including but not limited to the following: Stabilize all disturbed areas with water, tarps, dust suppressants, or soil binders. Most construction equipment will be equipped with EPA Tier 2 or better engine designation. Bulk Materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul Trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material. Clean all Track-Out or Carry-Out at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an Urban area. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
BIOLOGICAL RESOURCES
The project will complete preconstruction clearance surveys for burrowing owl within 30 days prior to construction. If active burrows are present within the project footprint, the following design features will be implemented. The owls will be passively relocated. This includes covering or excavating all burrows and installing one-way doors into occupied burrows. This will allow any animals inside to leave the burrow, but will exclude any animals from re-entering the burrow. The

TABLE 2.0-6
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF THE DREW SOLAR PROJECT

burrows should then be excavated and filled to prevent reuse. The proposed project shall also comply with the following mitigation measures:

MM-BIO-1 General Avoidance and Minimization Measures

Debris/Non-native Vegetation/Pollution

- Fully covered trash receptacles that are animal-proof will be installed and used onsite to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash.
- No litter or debris will be discharged into state-jurisdictional waters.
- Work areas shall be kept clean of debris, such as trash, and construction materials.

Vehicle and Equipment Restrictions and Maintenance

- Night-time construction should be minimized to the extent possible. However, if night-time activity (e.g., equipment maintenance) is necessary, then the speed limit shall be 10 mph.
- Vehicle operation within jurisdictional resources when surface water is present will be prohibited except as necessary to perform work in IID facilities pursuant to ACOE, RWQCB, and/or CDFW permits and/or authorizations. Any equipment or vehicles driven and/or operated within or adjacent to a state-jurisdictional channel will be checked and maintained by the operator daily to prevent leaks of oil or other petroleum products that could be deleterious to aquatic life if introduced to the watercourse.
- Vehicles and equipment access will be limited to the identified impact areas and speed limit of 15 mph will be enforced. The work areas and sensitive areas will be flagged prior to construction in order to ensure construction activities remain within the approved work limits. During operations and maintenance, vehicles and equipment will be restricted from entering sensitive habitat, and limited to maintenance access roads, where feasible, and the minimal area necessary to perform the work.
- Staging and storage areas for spoils, equipment, materials, fuels, lubricants, and solvents will be located outside the state-jurisdictional channels and within the designated impact area. Stationary equipment, such as motors, pumps, generators, compressors, and welders, located adjacent to state-jurisdictional waters shall be positioned over drip-pans or other containment. Prior to refueling and lubrication, vehicles and other equipment shall be moved away from the jurisdictional waters.

TABLE 2.0-6
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF THE DREW SOLAR PROJECT

	<i>Other Restrictions on Activities and Personnel</i> • No pets, such as cats or dogs, permitted on the Project site during construction or operations and maintenance. • Any contractor, employee, or agency personnel who kills, injures, or traps a wildlife species shall immediately report the incident to the Project biologist during construction and the operations manager during operations and maintenance. • All pipes, culverts, or similar structures with a diameter of 4 inches or more that are stored at a construction site for one or more overnight periods shall be covered to prevent entry to nesting birds and other wildlife.
MM-BIO-2	Environmental Awareness Training, Biological Monitoring, and Compliance <i>Worker Environmental Awareness Program and Ongoing Training</i> Prior to the initiation of any on-site grading, all construction/contractor personnel working on site must complete training through a Worker Environmental Awareness Program (WEAP). New construction workers engaged in construction activities (e.g., grading, utility installation, etc.) shall complete WEAP training within the first week of deployment on the Project site. Additionally, operational staff shall complete WEAP training prior to deployment on the Project site. <i>Biological Monitoring and Compliance Documentation</i> The Project biologist shall perform the biological monitoring and compliance documentation for the Project during construction, including the following: • Prior to the initiation of any on-site grading, the Project biologist will document that required pre-construction surveys and/or relocation efforts have been implemented. • The Project biologist will periodically monitor activities during initial grading. • The Project biologist will note any evidence of trash and, if present, communicate the presence and requirement to remove the trash to the construction manager. • The Project Biologist shall have the following minimum qualifications: (1) Have a bachelor's degree in biological sciences, zoology, botany, ecology or a closely related field; (2) Have at least 2 years of experience in biological compliance for construction projects; and (3) Have at least 1 year of field experience with

2.0 PROJECT DESCRIPTION

TABLE 2.0-6
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF THE DREW SOLAR PROJECT

biological resources found in the geographic region of the Project.	
MM-BIO-3	Burrowing Owl Surveys and Avoidance/Relocation. No more than 14 days prior to ground-disturbing activities (vegetation clearance, grading), a qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct pre-construction take avoidance surveys on and within 200 meters (656 feet) of the construction zone (where safe and legally accessible) to identify occupied breeding or wintering burrowing owl burrows. The two-pass take avoidance burrowing owl surveys shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (2012 Staff Report; CDFW 2012) and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any suitably sized burrows with fresh burrowing owl sign or presence of burrowing owls. As each burrow is investigated, biologists shall also look for signs of American badger and desert kit fox. Copies of the burrowing owl survey results will be submitted to the CDFW. If burrowing owls are detected on site, no ground-disturbing activities will be permitted within 200 meters (656 feet) of an occupied burrow during the breeding season (February 1 to August 31), unless otherwise authorized by CDFW. During the nonbreeding season (September 1 to January 31), ground-disturbing work can proceed near active burrows as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW. If avoidance of active burrows is infeasible during the nonbreeding season, then, before breeding behavior is exhibited and after the burrow is confirmed empty by site surveillance and/or scoping, a qualified biologist shall implement a passive relocation program in accordance with Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 Staff Report. Passive relocation consists of excluding burrowing owls from occupied burrows by closing or collapsing the burrows and providing suitable artificial burrows nearby for the excluded burrowing owls. Where required buffering will not be feasible, passive relocation is an option in consultation with CDFW, but it is preferred to install appropriate artificial burrows (in accordance with the negotiated Plan) and then let the owls decide whether they would like to abandon the existing burrow. Only burrows that are in danger by construction should be collapsed if at all possible. A Burrowing Owl Relocation Plan will be prepared and approved by CDFW prior to commencement of burrowing owl exclusion activities if this method of mitigation is required. The plan will detail the procedures of the passive relocation effort, the location of constructed replacement burrows, design of replacement burrows, and post relocation monitoring requirements.
MM-BIO-4	Nesting Bird Pre-construction Surveys and Avoidance Plan. The Project biologist shall conduct pre-construction surveys no earlier than 7 days prior

TABLE 2.0-6
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF THE DREW SOLAR PROJECT

	to any on-site grading and construction activities that occurs during the nesting season defined as February 1 – September 15 or as determined by the Project biologist. Pre-construction surveys shall be conducted within the designated construction area and a 500-foot buffer (where safe and legally accessible). Burrowing owl measures are addressed in MM-BIO-3. The purpose of the pre-construction surveys will be to determine whether occupied nests are present in the construction zone or within 500 feet of the construction zone boundary on lands that are legally accessible. If occupied nests are found, then limits of construction to avoid occupied nests shall be established by the Project biologist in the field with flagging, fencing, or other appropriate barriers (e.g., 250 feet around active passerine nests to 500 feet around active raptor nests), and construction personnel shall be instructed on the sensitivity of nest areas. The Project biologist may adjust the 250-foot or 500-foot setback at his or her discretion depending on the species and the location of the nest (e.g., if the nest is well protected in an area buffered by dense vegetation the setback may be reduced). Once a Project biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, construction may proceed.
MM-BIO-5	All transmission towers and lines are designed to conform to Avian Power Line Interaction Committee (APLIC) standards. APLIC standards identify the necessary physical separation between energized and/or grounded structures, conductors, hardware, or equipment to avoid the potential for that to be bridged by birds, thus avoiding the potential for electrocution. The Proposed Project shall implement recommendations by the APLIC (2006, 2012) to protect raptors and other birds.
CULTURAL RESOURCES	
	Archaeological monitoring shall occur during drilling activities for the Gen-ties, and if only disturbed sediments or other sediments and formations are identified that do not have the potential to contain archaeological resources, then monitoring may be reduced or terminated.
	In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the Project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards can evaluate the significance of the find and determine whether or not additional study is warranted. If the discovery is clearly not significant (e.g., and isolate) the archaeologist may simply record the find and allow work to continue. If the discovery proves potentially significant under CEQA, additional work such as preparation of an

2.0 PROJECT DESCRIPTION

**TABLE 2.0-6
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF THE DREW SOLAR PROJECT**

archaeological treatment plan, testing, or data recovery may be warranted.
In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC must immediately notify those persons it believes to be the MLD from the deceased Native American. The MLD shall complete inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.
HAZARDS AND HAZARDOUS MATERIALS
Prior to commencement of construction of a CUP, all trash and debris will be removed from the CUP parcels of the Project and properly disposed.
HYDROLOGY AND WATER QUALITY
<i>Flood Hazard</i>
The Project will make best efforts to avoid constructing facilities within a flood hazard zone; however, in the event some facilities are required to be constructed in flood hazard zone, the Project will design its facilities to meet Imperial County Building Standards. The project will be designed to comply with Imperial County and IID storm water retention standards.
<i>Construction Activities</i>
Prior to the issuance of the first grading permit, the developer shall prepare and submit a Storm Water Pollution Prevention Plan (SWPPP), and receive coverage under the General Construction National Pollutant Discharge Elimination System Permit from the California State Water Resources Control Board. The SWPPP shall include source control and treatment control BMPs. Possible source control BMPs include, but are not limited to: • trash storage; • integrated pest management; • efficient irrigation and landscape design; and, • property owner educational materials regarding source control management. Treatment control BMPs will be comprised of detention basins to remove trash and pollutants such as sediment, nutrients, metals, bacteria, oil and grease, and organics.
GEOLOGY AND SOILS
Prior to approval of final engineering and grading plans for the Project, the County shall verify that all recommendations contained in the Geotechnical Investigation Report have been incorporated into all final engineering and grading plans. This report identifies specific measures for mitigating geotechnical conditions on the Project site, and addresses site preparation, foundations and settlements, slabs-on-grade, concrete mixes and corrosivity, seismic design, and pavement design. The County's Public Works Department shall review grading plans prior to finalization, to verify plan compliance with the recommendations of the Geotechnical Investigation Report. All development on the Project site shall be in accordance with Title 24, California Code of Regulations.

**TABLE 2.0-6
APPLICANT PROPOSED MEASURES INCLUDED AS PART OF THE DREW SOLAR PROJECT**

TRANSPORTATION AND CIRCULATION
Construction traffic will minimize use of unpaved roads to the extent feasible. Roads will be photographed prior to construction and Project related impacts to County roads will be repaired. Before construction a Traffic Control Plan will be prepared for the Imperial County Department of Public Works, and a Traffic Management Plan will be prepared for Caltrans for State Route 98 encroachments.
PUBLIC HEALTH AND SAFETY
<i>Fire Prevention</i>
A Fire Prevention and Response Plan (FPRP) will be developed and implemented during construction, operation, and maintenance of the Project.
<i>Security</i>
The Project will contract with a security company to protect the facility. A perimeter fence with 3 strands of barbed wire will be placed along the Project perimeter to keep people out of the facility.
NOISE
The use of noise-generating and vibration-generating construction equipment will not begin before 7:00 a.m. during weekdays or 9:00 a.m. on Saturday per the County General Plan Noise Element.

2.2 ALTERNATIVES

2.2.1 ALTERNATIVE 1 - REDUCED PRIME FARMLAND ALTERNATIVE

This alternative would exclude the portion of the proposed Project west of Drew Road (CUPs 17-0035 & 18-0001), and would reduce potential impacts to Prime Farmland.

2.2.2 ALTERNATIVE 2 - NO PROJECT ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(1) requires that a No Project Alternative be analyzed in order to allow the decision-makers to compare the impacts of approving a proposed Project with the impacts of not approving the proposed Project. Under the No Project Alternative, the proposed Drew Solar Project would not be developed. No GPA, Zone Change, Variance or CUP applications would be approved. The Project site could remain in its existing condition as agricultural land owned by the IID.

These are discussed in detail in Chapter 6.0, Alternatives.

2.3 INTENDED USES OF THE EIR/AUTHORIZING ACTIONS

The EIR is intended to provide documentation pursuant to CEQA to cover all local, regional, and state permits and approvals which may be needed or are desirable in order to implement the proposed project. Discretionary actions and approvals by the Imperial County Planning Commission and/or Board of Supervisors for the proposed Project or its alternatives may include, but are not limited to:

2.0 PROJECT DESCRIPTION

2.3.1 DISCRETIONARY ACTIONS AND APPROVALS

A. COUNTY OF IMPERIAL

In conformance with Sections 15050 and 15367 of the CEQA Guidelines, the County of Imperial has been designated the "lead agency," defined as, "the public agency which has the principal responsibility for carrying out or approving a project." Discretionary actions and approvals by the Imperial County Planning Commission and/or Board of Supervisors for the proposed Project or its alternatives may include, but are not limited to:

Development Agreement

The Project is processing a Development Agreement with Imperial County to enable and control a phased build-out of the Project that is capable of meeting changing market demands by authorizing initiation of the CUP or CUPs anytime within a 10 year period. Thereafter, the CUPs are valid for the remaining period of 40 years from the date of the CUP approval. The requested Development Agreement would provide flexibility to allow the start of construction to commence for up to 10 years after the CUPs are approved.

Certification of the Final EIR

After the required public review for the Draft EIR, Imperial County will respond to written comments, edit the document, and produce a Final EIR to be considered for certification by the Board of Supervisors prior to making a decision on the Project.

Findings

Following certification of the EIR, the Board of Supervisors must approve Findings pursuant to CEQA Guidelines Section 15091.

Mitigation Monitoring and Reporting Program

A Mitigation Monitoring and Reporting Program (MMRP) will be adopted as required by CEQA Guidelines Section 15097 to ensure that mitigation measures identified in the EIR are implemented as appropriate.

General Plan Amendment

The proposed Project will require approval of a General Plan Amendment (GPA) (17-0006) for amendment of the Renewable Energy & Transmission Element to create an Island Overlay for the Project Site, and amendment of the requirements for said Island Overlay. The Project shares a common boundary to an existing transmission source (i.e. the existing Drew Switchyard) and is adjacent to the existing Centinela Solar Farm.

Zone Change

Zone Change (ZC 17-0007) to add the RE Overlay Zone to the Project Site.

Variance

Variance (V 17-0003) for the entire proposed Project Area, including the existing Drew Switchyard, for power pole structures that are over 120 feet in height. With approval of the Variance, the proposed structures could be up to 180 feet in height.

Conditional Use Permits

The proposed Project will require a total of six CUPs (CUP 17-0031, CUP 17-0032, CUP 17-0033, CUP 17-0034, CUP 17-0035 and CUP 18-0001). Five CUPs will be required to develop solar energy generating

systems including potential energy storage on lands zoned A-2, A-2-R, and A-3 per Title 9, Division 5: Zoning Areas Established, Chapter 8, Section 90508.02 and 90509.02; and one CUP (CUP 18-0001) to develop energy storage as a component of solar on lands currently zoned A-2 and A-3, per Title 9, Division 5: Zoning Areas Established, Chapter 8, Sections 90508.02 and 90509.02 (A-2 and A-3).

Development Agreement

The Project is processing a Development Agreement with Imperial County to enable and control a phased build-out of the Project that is capable of meeting changing market demands by authorizing initiation of the CUP or CUPs anytime within a 10 year period. Thereafter, the CUPs are valid for the remaining period of 40 years from the date of the CUP approval. The requested Development Agreement would provide flexibility to allow the start of construction to commence for up to 10 years after the CUPs are approved.

Parcel Map

The Project is processing a Parcel Map to fix the existing inconsistency with the legal and physical boundary of the SW ¼ Section of the Project Site (APNs: 052-170-039 & 052-170-067), including APN 052-170-030 to the north of the Project Site as part of the Parcel Map. In doing so the net farmable acreage of the Project Site will remain the same (762.8 net acres), and the gross acreage will increase from 844.2 gross acres to approximately 855 gross acres once the Parcel Map is recorded.

Lot Tie Agreements

Lot Tie Agreement(s) to hold some or all of the parcels that are part of the Project together as a single parcel in order to reduce/eliminate the setbacks for interior property lines of parcels that are part of the Project and adjacent to one another.

B. DISCRETIONARY ACTIONS AND APPROVALS BY OTHER AGENCIES

Responsible Agencies are those agencies that have discretionary approval over one or more actions involved with development of the proposed Project. Trustee Agencies are state agencies that have discretionary approval or jurisdiction by law over natural resources affected by a project. These agencies may include, but are not limited to the following:

- California Public Utility Commission (Authority to Enter into Power Purchase Agreement)
- California Department of Fish and Wildlife (Streambed Alteration Agreement)
- United States Fish and Wildlife Service (Section 7 Consultation)
- California Regional Water Quality Control Board (401 Water Quality Certification)
- United States Army Corps of Engineers (404 permit)
- Imperial County Air Pollution Control District
 - o Authority to Construct Permit for emergency backup generators

2.0 PROJECT DESCRIPTION

2.3.2 SUBSEQUENT/CONCURRENT ENTITLEMENTS TO IMPLEMENT THE PROPOSED PROJECT

A variety of ministerial actions and permits may be required by Imperial County to implement the components of the Proposed Project, including, but not limited to:

- Grading Plan for the solar field and energy storage site parcels: ICPDSD
- Construction Traffic Control Plan: ICDPW
- Building Permits: ICPDSD
- Dust Control Plan (Imperial County Air Pollution Control District)
- Rule 310 Exemption: ICAPCD
- Site Plan and Architectural Review: ICPDSD
- Construction Traffic Control Plan: ICDPW
- Encroachment Permits from for access to the project parcels from County roads, and for any proposed Country road crossings: ICDPW
- Occupancy Permits: ICPDSD
- On-site Water Treatment Permit: ICPDSD / ICEHS
- Private Sewage Disposal Permit to construct and operate a septic system and leach field for the O&M building(s), if proposed for the Proposed Project: ICEHS
- Ag Reclamation Plan/Decommissioning Plan: ICPDSD/ICDPW
- Minor-modifications to CUP to implement changes responsive to market conditions or changes imposed by other agencies with jurisdiction over the Proposed Project: ICPDSD
- Vacation of easements: ICDPW
- Abandonment of rights-of-way: ICDPW
- Pest Management Plan: Imperial County Agricultural Commissioner's Office
- Review of Plans/Access and Fire Water Requirements: Imperial County Fire Department

2.3.3 ACTIONS AND APPROVALS BY OTHER AGENCIES

Responsible Agencies are those agencies that have approval over one or more actions involved with development of the Proposed Project. Trustee Agencies are state agencies that have approval or jurisdiction by law over natural resources affected by a project. These agencies may include, but are not limited to the following:

IMPERIAL IRRIGATION DISTRICT (IID)

Various approvals may be required from IID in conjunction with implementation of the proposed Project.

For the purposes of CEQA, wherever an IID facility (drain, irrigation canal, electric line, etc.) intersects the Project, an encroachment will occur as the Proposed Project would cross IID facilities with access points and electrical project electrical crossings. The Proposed Project may also drain into IID drain facilities. Due to the preliminary nature of the Project and the rapidly changing technology, the exact locations of proposed access and drainage encroachments, and project electrical crossings, are not known at this time; however approximate access points and crossing locations have been provided in **Figure 2.0-3**.

The Project encroachments/crossings will not interfere with the purpose of IID's facilities. The following IID approvals, although not discretionary approvals, include, but are not limited to:

- Encroachment Permits/Agreements
- Electrical Crossings
- Water Supply Agreements
- Backfeed Service Agreement
- Electric Service Agreement

CALIFORNIA DEPARTMENT OF TRANSPORTATION

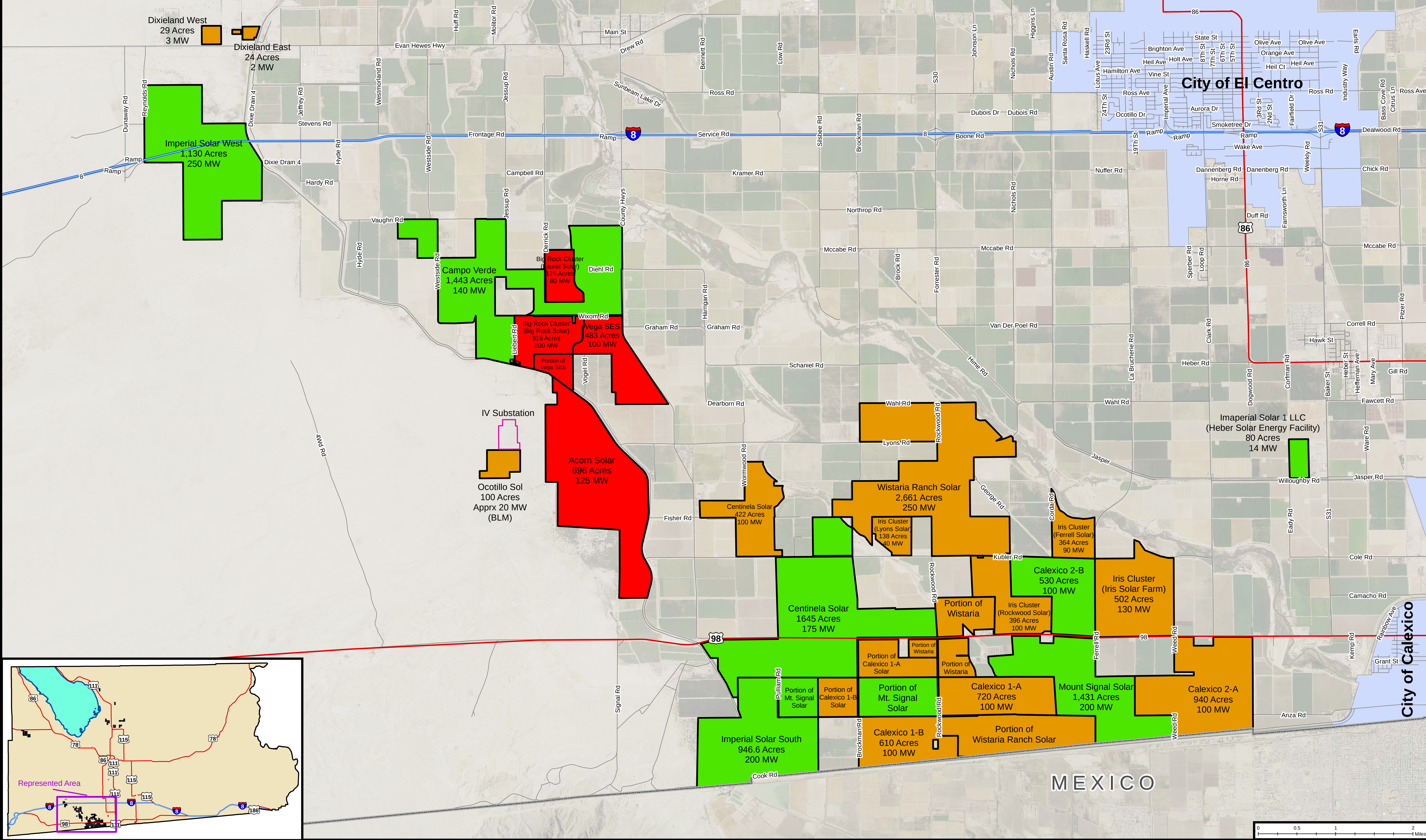
Project gen-tie lines will cross SR-98, and project access points are proposed along SR-98. Although not a discretionary approval, these crossings will require encroachment permits from the California Department of Transportation (Caltrans), as well as approval of a water pollution control program and transportation management plan by Caltrans.

California State Water Resources Control Board

General Construction Storm Water Permit Notice of Intent/Storm Water Pollution Prevention Plan

Appendix K

Imperial County Solar Farm Map



Imperial County Solar Farm Projects

South End Projects

Project Status	
Operational	Approved - Under Construction
Approved - Not Built	Pending Entitlement

Legend:

- Cities
- IV Substation
- Roads
- US Highways
- Interstate

North Arrow

Page 23 of 333

Sources: IC Assessors, IC Planning Dept., Aerial: NAIP 2014. created by Derek Newland

UPDATED: August 28, 2017

Appendix L

Cumulative Project (New Development) Information

Solar Farm Average Traffic Generation Rates

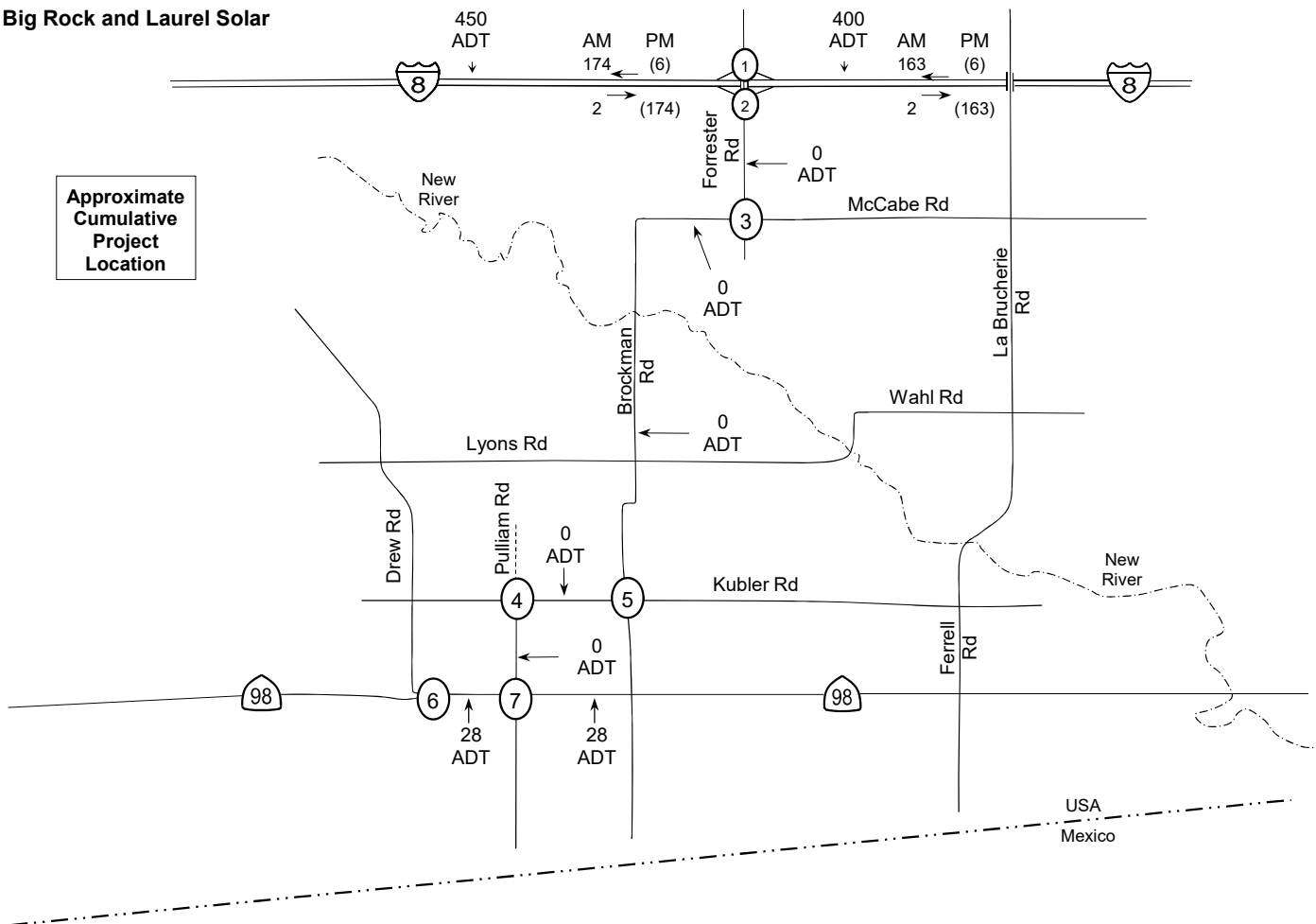
Several cumulative projects did not have technical studies and therefore did not have reported cumulative project traffic generation. Therefore, an average traffic generation rate from other existing solar farm projects was calculated based on the number of megawatts (MW). The following tables list the traffic generation associated with each cumulative project and the associated MW.

Project	Mega Watts	ADT	ADT / MW	AM				PM			
				IN		OUT		IN		OUT	
				IN/MW		OUT/MW		IN/MW		OUT/MW	
Mount Signal Solar Farm I	200	522	2.61	162	0.81	0	0.00	0	0.00	162	0.81
Imperial Solar South	200	680	3.40	265	1.33	6	0.03	15	0.08	265	1.33
Imperial Solar West	250	750	3.00	300	1.20	6	0.02	15	0.06	300	1.20
Imperial Valley Solar	750	1736	2.31	772	1.03	0	0.00	0	0.00	772	1.03
Average Rates			2.83	1.09		0.01		0.03		1.09	

The above rates were used to calculate the traffic associated with the following cumulative projects.

MW		ADT	IN	OUT	IN	OUT
<u>Proposed Cumulative Projects</u>						
Big Rock and Laurel Solar	200	566	218	3	7	218
Calexico I-A	100	283	109	1	3	109
Calexico I-B	100	283	109	1	3	109
Calexico 2-A	100	283	109	1	3	109
Centinela Phase 2	100	283	109	1	3	109
Iris Solar Cluster	360	1019	393	5	12	393
Vega Solar	100	283	109	1	3	109

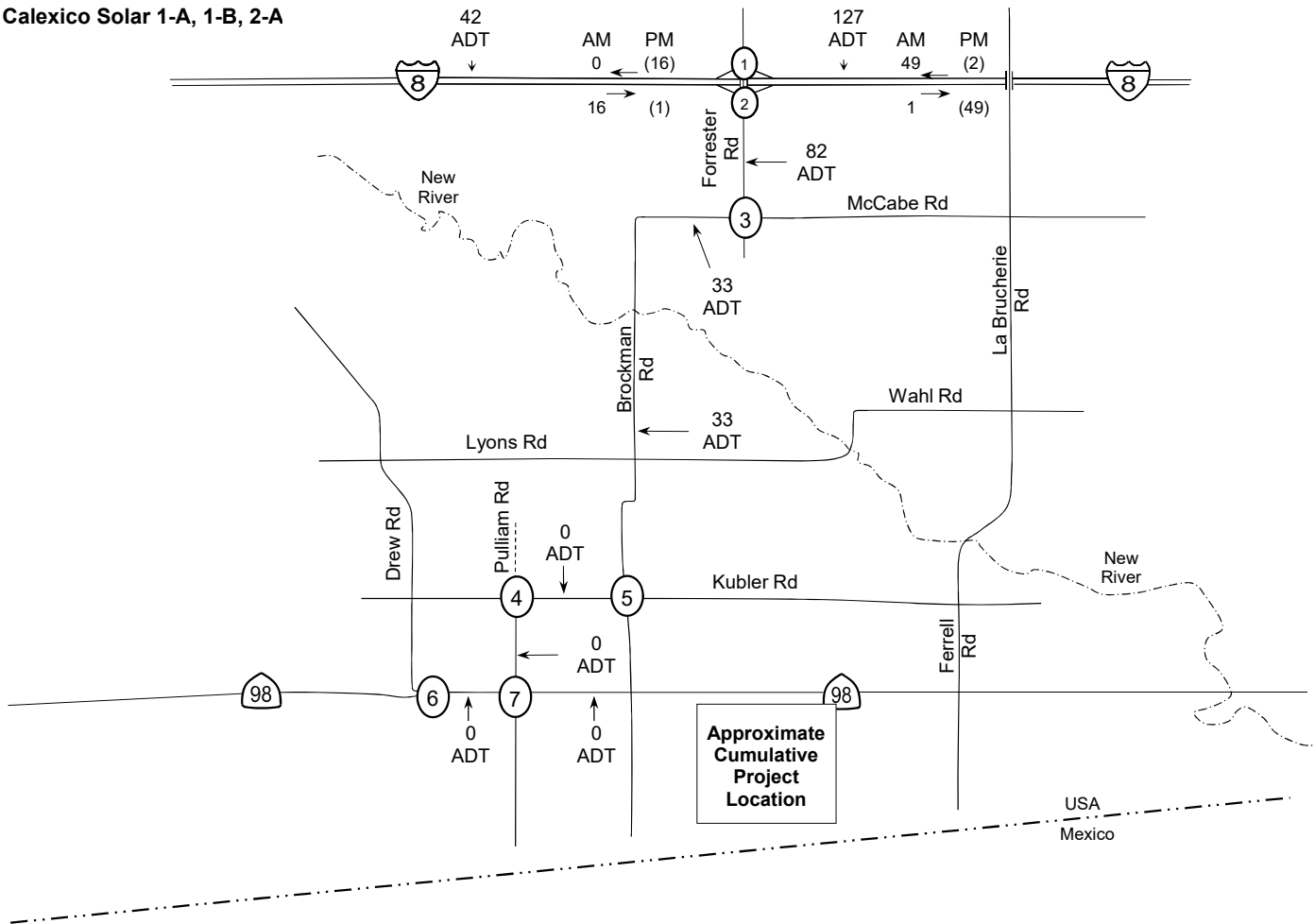
Big Rock and Laurel Solar



	LEGEND XX AM peak hour volumes at intersections (YY) PM peak hour volumes at intersections. an empty bracket () represents a 0 PM volume Z,ZZZ ADT volumes shown along segments (#) Intersection Reference Number to LOS Tables Existing Roadways Existing Unpaved Roadway	



Calexico Solar 1-A, 1-B, 2-A



Forrester Rd 33 (1) 1 49 (2) 0 (16) 0 (33) I-8 WB Ramp	I-8 EB Ramp 82 (3) 2 16 (1) 0 (49) 1 (49) Forrester Rd	33 (1) 65 (3) 3 0 (33) 1 (65) McCabe Rd
Pulliam Rd 33 (1) 4 0 (33) 0 (49) Kubler Rd	Brockman Rd 33 (1) 5 0 (33) 0 (49) Kubler Rd	Drew Rd 33 (1) 6 0 (33) 0 (49) SR-98
Pulliam Rd 33 (1) 7 0 (33) 0 (49) SR-98	LEGEND XX AM peak hour volumes at intersections (YY) PM peak hour volumes at intersections. an empty bracket () represents a 0 PM volume Z,ZZZ ADT volumes shown along segments # Intersection Reference Number to LOS Tables Existing Roadways Existing Unpaved Roadway	



4.0 Project Description

The proposed Battery Energy Storage System will incorporate traditional lithium-ion batteries. The Project is proposed to be constructed in two phases, with Phase 1 designed to store up to 5 megawatt-hours of energy and Phase 2 up to 100 megawatt-hours of energy. Construction for Phase 1 is proposed to start in late 2016 and construction for Phase 2 is expected to begin in 2018.

4.1 Project Phase 1 Construction Trip Generation

Phase 1 construction (planned for late 2016) will occur over a period of approximately 66 days to install the foundations and connect the components to the existing controls system and project substation. Approximately 12 workers will be on site for 6 to 8 weeks generally from sunrise to 2:30 PM. In addition to the construction workers, three technicians will work an additional 3 to 6 weeks to commission and debug the system integration. Work hours for three technicians will be approximately from 8 PM to 5 AM to avoid interference with the facility when solar power is being generated. Phase 1 deliveries will occur throughout the construction period; however, peak deliveries are anticipated to occur in Week 3 with approximately 4 truck deliveries in the morning and 1 truck delivery in the afternoon. A water truck is anticipated to deliver water with an average of less than one truck per day; however, to be conservative one daily water truck is included in the trip generation. For trip generation purposes, truck trips are converted to a Passenger Car Equivalent (PCE) by multiplying each truck by a factor of 3 due to size and speed constraints. For Phase 1 the peak construction traffic is calculated at 66 ADT with 39 morning peak hour trips (27 inbound and 12 outbound) and 21 afternoon peak hour trips (3 inbound and 18 outbound) as shown in **Table 6**.

TABLE 6: PHASE 1 PROJECT TRIP GENERATION (PASSENGER CAR EQUIVALENT)

Phase 1 Construction Related Traffic	Daily Vehicles	ADT with PCE ²	Morning Peak		Afternoon Peak	
			IN	OUT	IN	OUT
Daytime Construction Workers (12 with no PCE) ¹	12	24	12	0	0	12
Nighttime Technicians 8 pm to 5 am (3 with no PCE) ¹	3	6	0	0	0	0
Equipment Deliveries and Construction Trucks (with PCE of 3) ²	5	30	12	12	3	3
Water Truck (with PCE of 3) ²	1	6	3	0	0	3
Phase 1 Total Traffic During Peak Construction Period	21	66	27	12	3	18

ADT: Average Daily Trips. PCE: Passenger Car Equivalent factor of 3 applied to delivery and water trucks to provide an equivalent number of passenger cars. 1) Number of construction workers and construction trucks provided by applicant. 2) Passenger Car Equivalent (PCE) factor of 3 applied to each truck.

4.2 Project Phase 2 Construction Trip Generation

Phase 2 construction (expected in 2018) will occur over a period of approximately 160 days and will include site preparation; civil and foundation work (conduit, equipment pads, concrete foundations); building works (form and pour slab) framing, sheathing, roofing, mechanical, lighting and electrical, fire suppression); data support installation; batteries (install battery racks, install batteries in racks); electrical works (pull and test cable, set and test equipment, point of

interconnection work); certificate of occupancy; and commissioning. Approximately 30 workers will be on site generally from sunrise to 2:30 PM. In addition to the construction workers, three technicians will work an additional 3 to 6 weeks to commission and debug the system integration. Work hours for three technicians will be approximately from 8 PM to 5 AM to avoid interference with the facility when solar power is being generated. Phase 2 deliveries will occur throughout the construction period; however, peak deliveries are anticipated to occur in Month 3 with approximately 5 truck deliveries in the morning and 4 truck deliveries in the afternoon. A water truck is anticipated to deliver water with an average of less than one truck per day; therefore, to be conservative one daily water truck is included in the trip generation. For trip generation purposes, truck trips are converted to a Passenger Car Equivalent (PCE) by multiplying each truck by a factor of 3 due to size and speed constraints. For Phase 2 the peak construction traffic is calculated at 126 ADT with 63 morning peak hour trips (48 inbound and 15 outbound) and 57 afternoon peak hour trips (12 inbound and 45 outbound) as shown in **Table 7**.

TABLE 7: PHASE 2 PROJECT TRIP GENERATION (PASSENGER CAR EQUIVALENT)

Phase 2 Construction Related Traffic	Daily Vehicles	ADT with PCE ²	Morning Peak		Afternoon Peak	
			IN	OUT	IN	OUT
Daytime Construction Workers (12 with no PCE) ¹	30	60	30	0	0	30
Nighttime Technicians 8 pm to 5 am (3 with no PCE) ¹	3	6	0	0	0	0
Equipment Deliveries and Construction Trucks (with PCE of 3) ²	9	54	15	15	12	12
Water Truck (with PCE of 3) ²	1	6	3	0	0	3
Phase 2 Total Traffic During Peak Construction Period	43	126	48	15	12	45

ADT: Average Daily Trips. PCE: Passenger Car Equivalent factor of 3 applied to delivery and water trucks to provide an equivalent number of passenger cars. 1) Number of construction workers and construction trucks provided by applicant. 2) Passenger Car Equivalent (PCE) factor of 3 applied to each truck.

The construction is anticipated to occur Monday through Friday; however, if extra work days are required, they would occur on Saturdays.

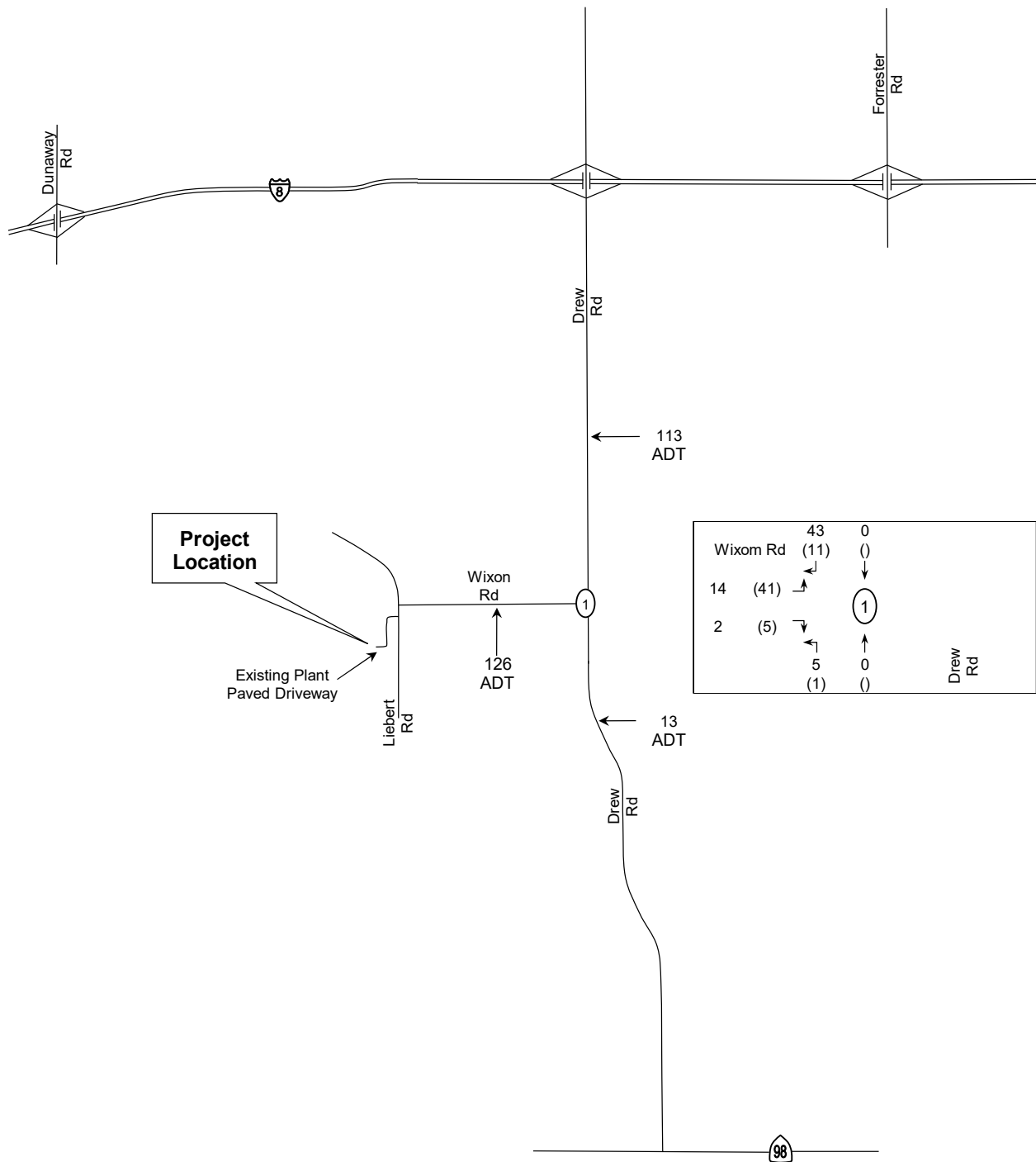
4.3 Project Operations and Maintenance Trip Generation

The post construction operations and maintenance of the Battery Energy Storage Facility will be monitored by existing six operators currently on-site as part of the existing Campo Verde Solar Facility operations. No additional full time staff is anticipated as part of the Battery Energy Storage Facility; however, technicians will be brought in if necessary, thus there is no anticipated new trip generation for the maintenance and project operations. Therefore, this traffic analysis is based on the higher and temporary construction traffic.

4.4 Construction Trip Distribution and Assignment

The trip distribution is based on the proximity to I-8 and SR-98, anticipated delivery of equipment, and construction workforce origination as shown in shown in **Figure 7**. The assignment of phase 1 construction traffic is shown in **Figure 8** while phase 2 construction traffic is shown in **Figure 9**.

Figure 9: Project Trip Assignment (Phase 2)



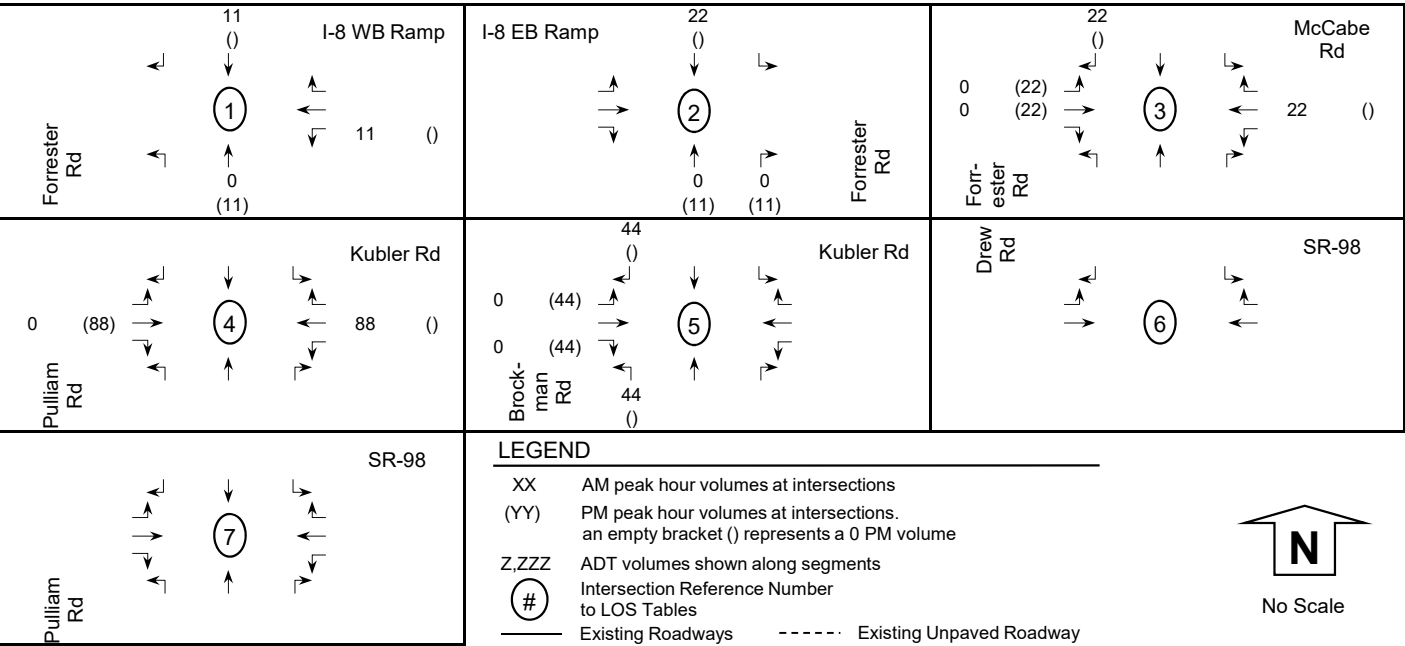
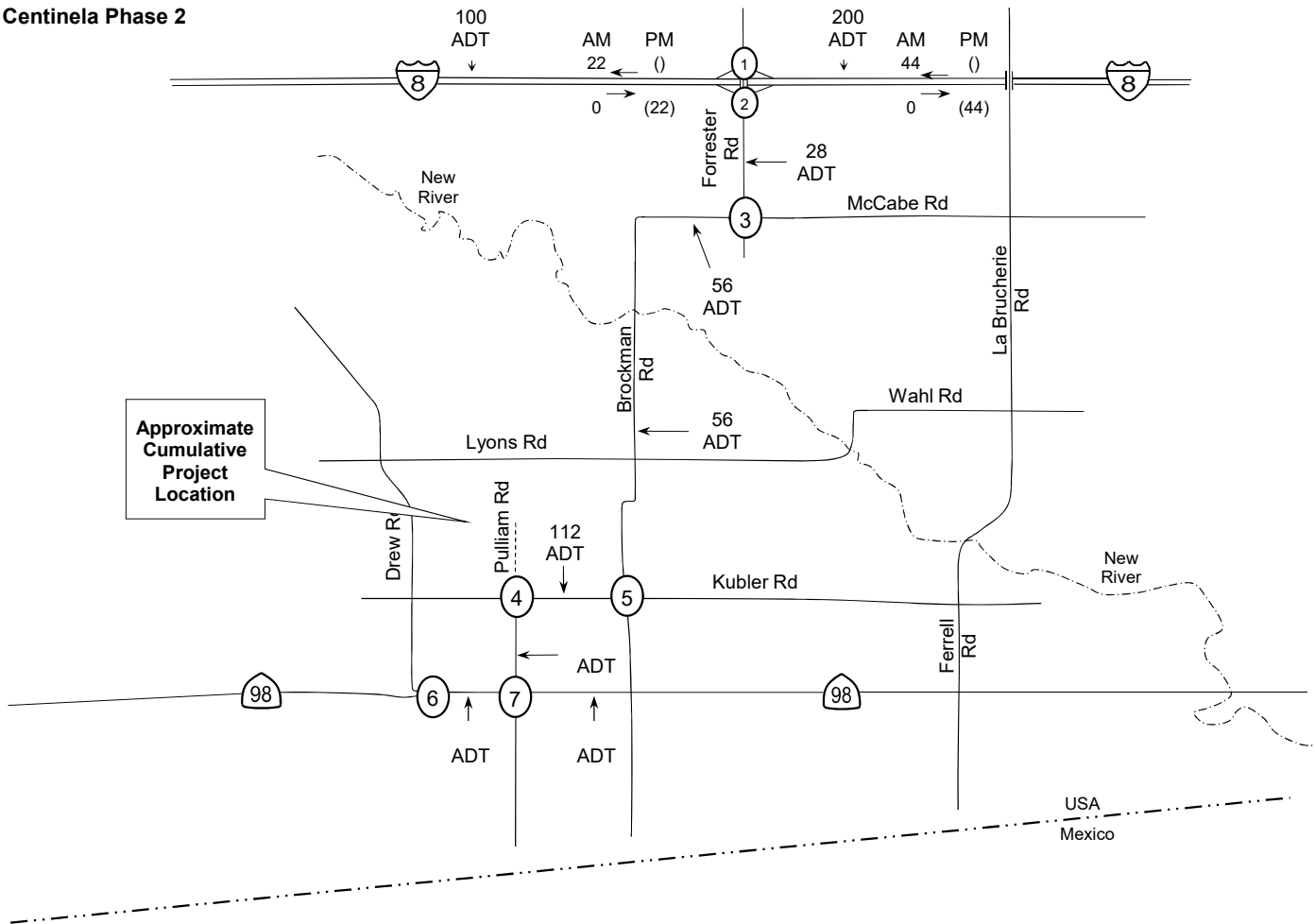
LEGEND

- XX AM peak hour volumes at intersections
- (YY) PM peak hour volumes at intersections
- Z,ZZZ ADT volumes shown along segments
- (#) Intersection Reference Number to LOS Tables
- Existing Roads
- () Represents 0 PM volume



No Scale

Centinela Phase 2





Jim Minnick
DIRECTOR

Imperial County Planning & Development Services Planning / Building / Parks & Recreation

TO: Commissioner Charles Baker
Commissioner Dennis Logue
Commissioner Sandy Carver
Commissioner Charles Lucas
Commissioner Mike Goodsell

FROM: Jim Minnick, Secretary
Airport Land Use Commission

SUBJECT: Public Hearing to consider the proposed Coyne Ranch
Specific Plan, General Plan Amendment, Zone Change, Tract
Map for consistency with the 1996 Airport Land Use
Compatibility Plan (**ALUCP 13-17**)

DATE OF REPORT: September 26, 2017

AGENDA ITEM NO: 1

HEARING DATE: October 18, 2017

HEARING TIME: 6:00 p.m.

HEARING LOCATION: County Administrative Center
Board of Supervisors Chambers
940 Main Street
El Centro, CA 92243

SECRETARY'S RECOMMENDATION

It is Staff's recommendation that the attached proposed project(s) for the proposed Coyne Ranch Specific Plan, General Plan Amendment, Zone Change & Tract Map (within the ALUCP's "C" Zone") could be deemed consistent with the 1996 Airport Land Use Compatibility Plan.

SECRETARY'S REPORT

Project Location:

The project is located on a 129 acre parcel within the Seeley Urban Area plan on the Northwest corner of Ross Road and Bennett Road; APN 051-450-009-000; legally described as that portion of the Par 1 PM 2285 of TR 189 Township 16 Range 12-13 129.45 acres.

The specific location of the proposed project location is found within the attached Imperial County Airport Compatibility Map, Zone C, of the 1996 Airport Land Use Compatibility Plan.

Project Description:

The Planning & Development Services Department received the attached proposed Coyne Ranch Specific Plan 16-0001, General Plan Amendment, Zone Change 16-0002 and Tract Map 989 on September 2017. The proposed Specific Plan project is a multi-year build out residential development. The project will be built out in four (4) phases, and will include up to 546 residential units.

The proposed Specific Plan, General Plan Amendment, Zone Change & Major Subdivision have been submitted for the Airport Land Use Commission's review and determination of consistency with the 1996 Airport Land Use Compatibility Plan (ALUCP).

The proposed site is located within the attached "C Zone" of the Imperial County Airport's Compatibility Map, ALUCP Figure 3G.

The ALUCP's Compatibility Criteria for the C Zone, "Common Traffic Pattern zone, indicates a maximum density of six (6) dwelling units/per acre. The project is proposing a possible total of 546 residential units on the 129.45 acre parcel. This calculates to 4.21 units per acre. The development of 435 single family homes on 77 acres equals 5.65 units per acre, however, a portion of the proposed Specific Plan allows up to 111 multi-family units on 7.55 acres. This calculation of (14.70 per acre) which puts a small portion of the total project area over the 6 unit per acre limit per the Class C Airport Land Use restrictions.

Other uses (people/ac) ² for a maximum of 200 per acre and a required open Land³ of 15% of project site. (129 acres x 15%) = 19.35 acres of required open space appears to meet ALUC limits.

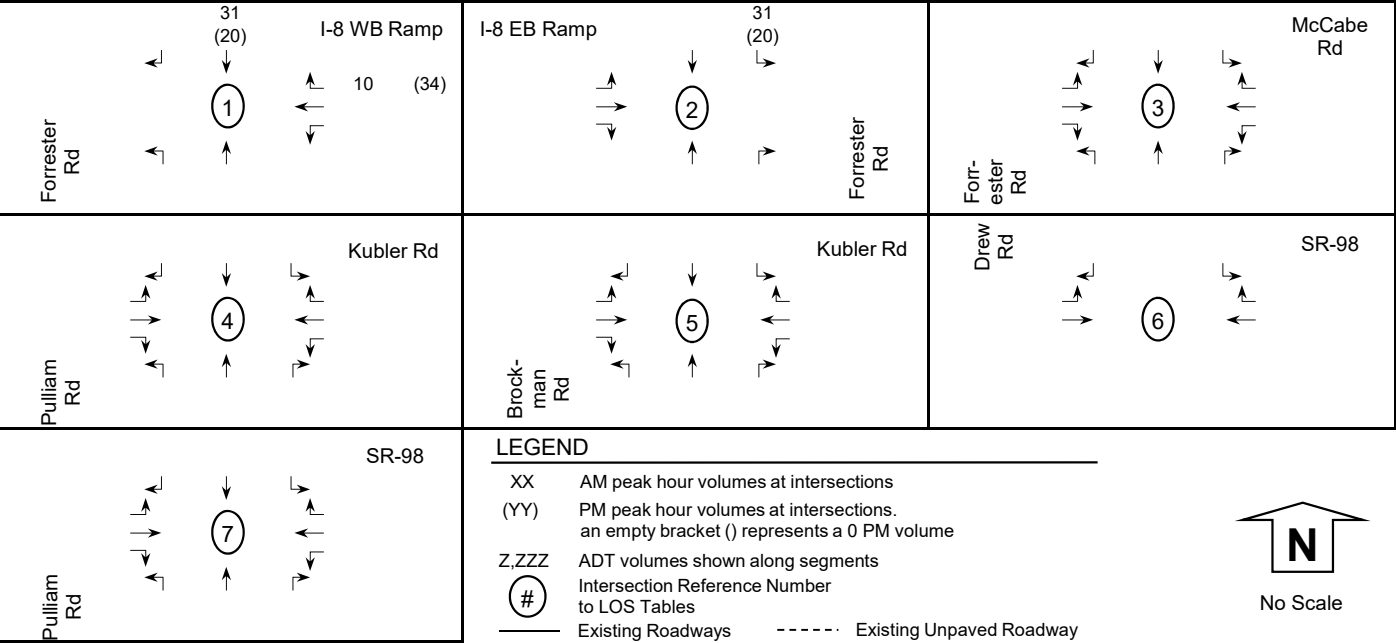
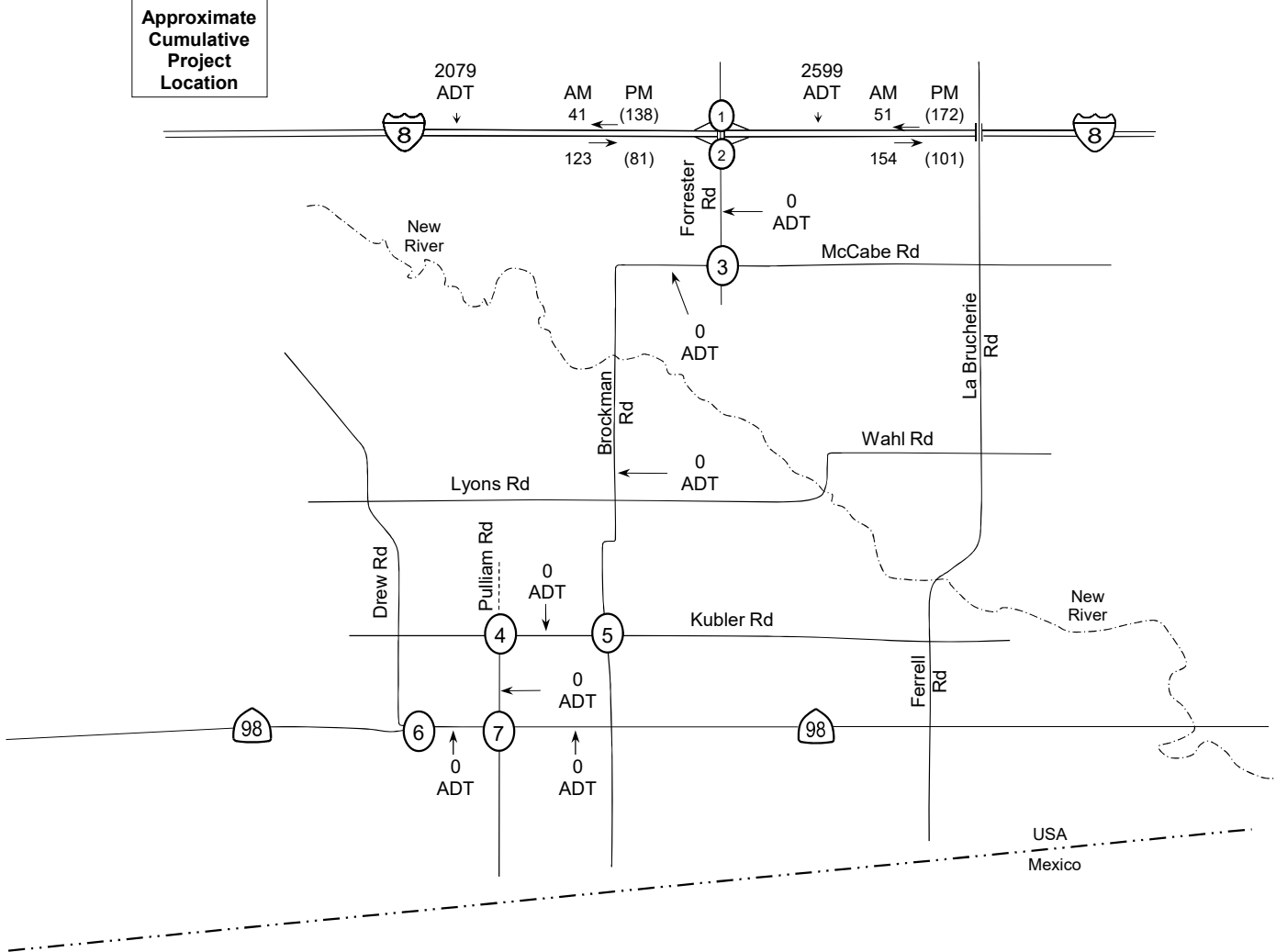
General Plan/ALUCP Analysis:

The Airport Land Use Compatibility Plan (ALUCP), Chapter 2, Section 1.3. 2 (a) & (b), provides "Statutory Requirements" by the Commission, which include:

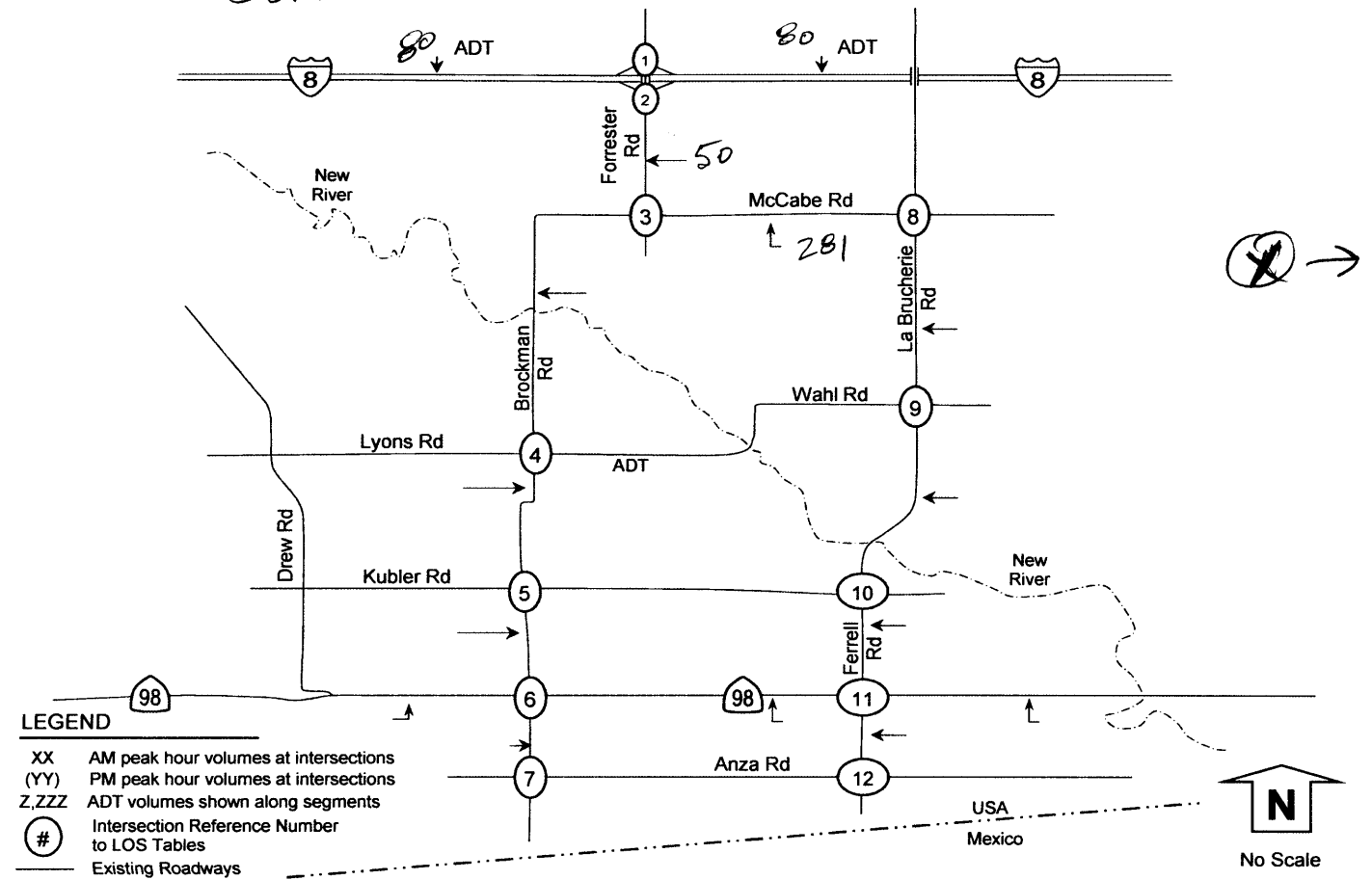
"As required by State law, (a) the adoption or approval of any amendment to a general or specific plan affecting the Commission's geographic area of concern as indicated in " (Section 1.3.2 (a), pg. 2-3), &

"Other Project Review- State law empowers the Commission to review additional types of land use "actions, regulations, and permits." as shown on page 2-3

Coyne Ranch Specific Plan



CUMULATIVE PROJECT: COUNTY CENTER II PHASE 1A #1B



Forrester Rd 5 (0) I-8 WB Ramp 1 2 (0) I-8 EB Ramp 2 (0) 2 Forrester Rd McCabe Rd 3 0 (7)	Lyons Rd Brockman Rd 4 Kubler Rd Brockman Rd 5 Anza Rd Brockman Rd 7 McCabe Rd La Brucherie Rd 8 28 (10) 52 (19) 24 (34) 12 (18) McCabe Rd La Brucherie Rd 9 Wahl Rd La Brucherie Rd 9	SR-98 Brockman Rd 6 Anza Rd Brockman Rd 7 McCabe Rd La Brucherie Rd 8 28 (10) 52 (19) 24 (34) 12 (18) McCabe Rd La Brucherie Rd 9 Wahl Rd La Brucherie Rd 9
La Brucherie Rd Ferrell Rd 10 Kubler Rd Ferrell Rd 11 SR-98 Ferrell Rd 11 Anza Rd Ferrell Rd 12	La Brucherie Rd Ferrell Rd 10 Kubler Rd Ferrell Rd 11 SR-98 Ferrell Rd 11 Anza Rd Ferrell Rd 12	La Brucherie Rd Ferrell Rd 10 Kubler Rd Ferrell Rd 11 SR-98 Ferrell Rd 11 Anza Rd Ferrell Rd 12

Figure 8: Project Assignment (Phase 1A)

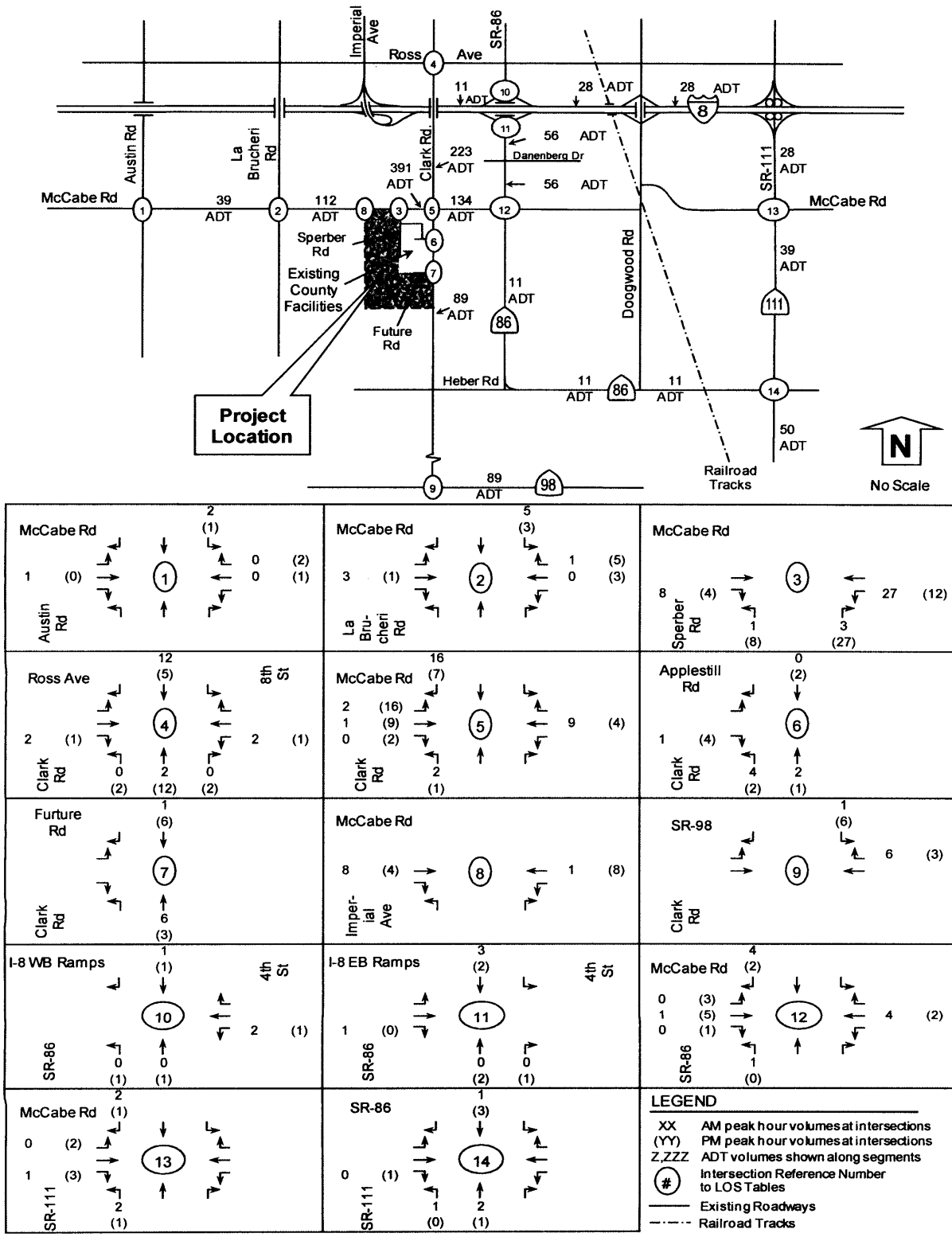
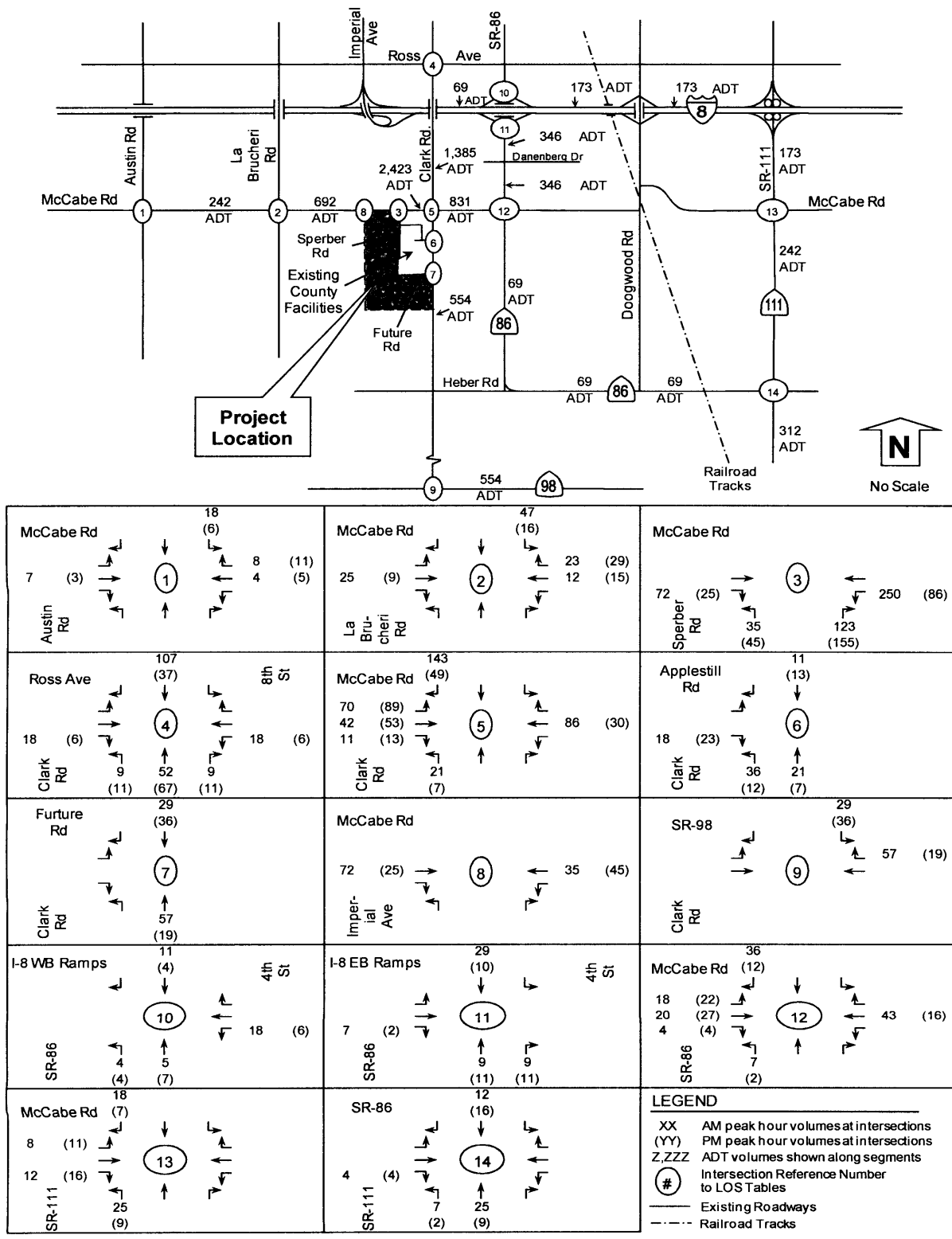
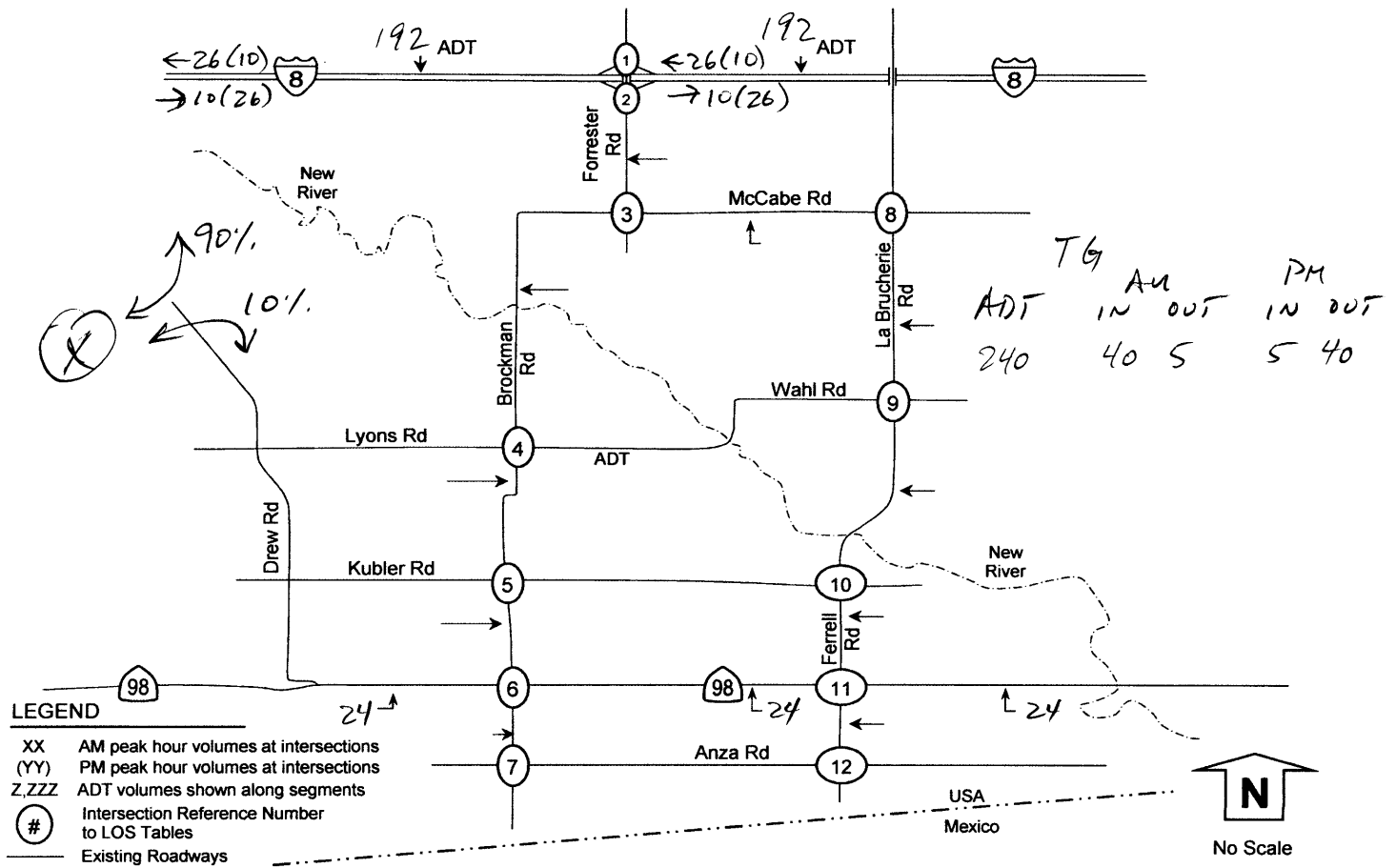


Figure 10: Project Assignment (Phase 1B)

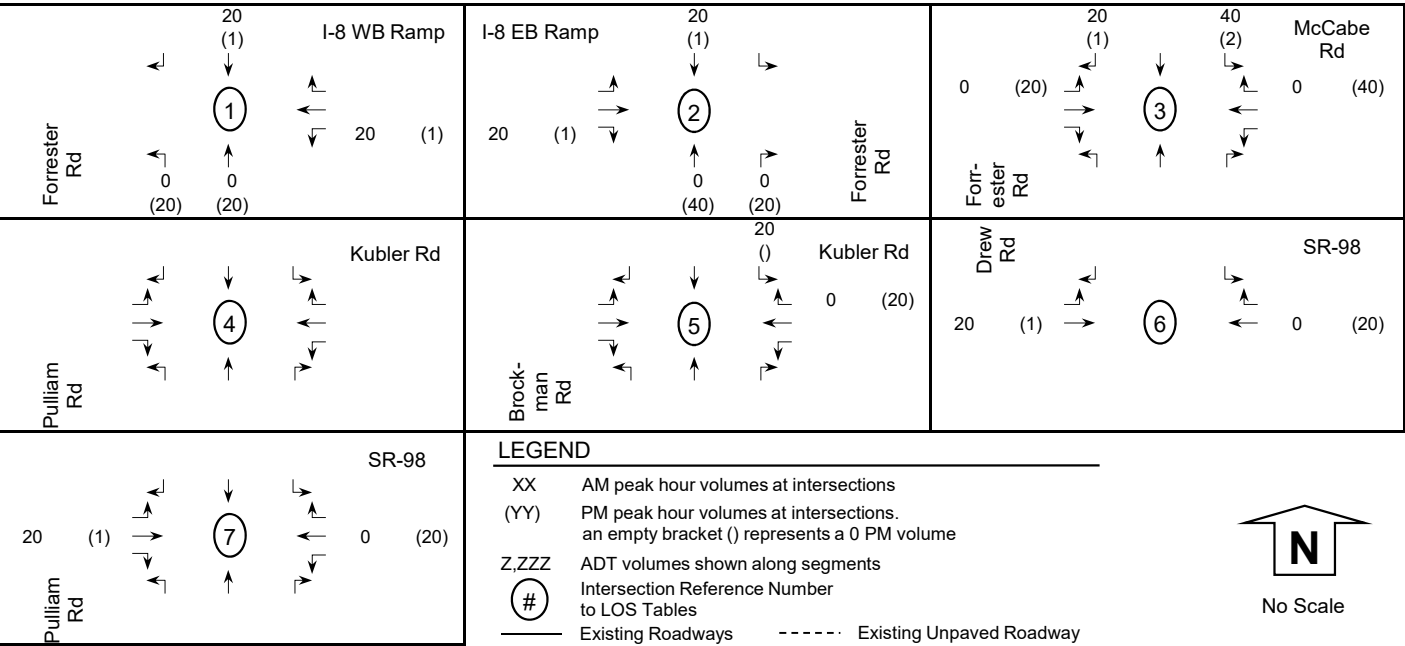
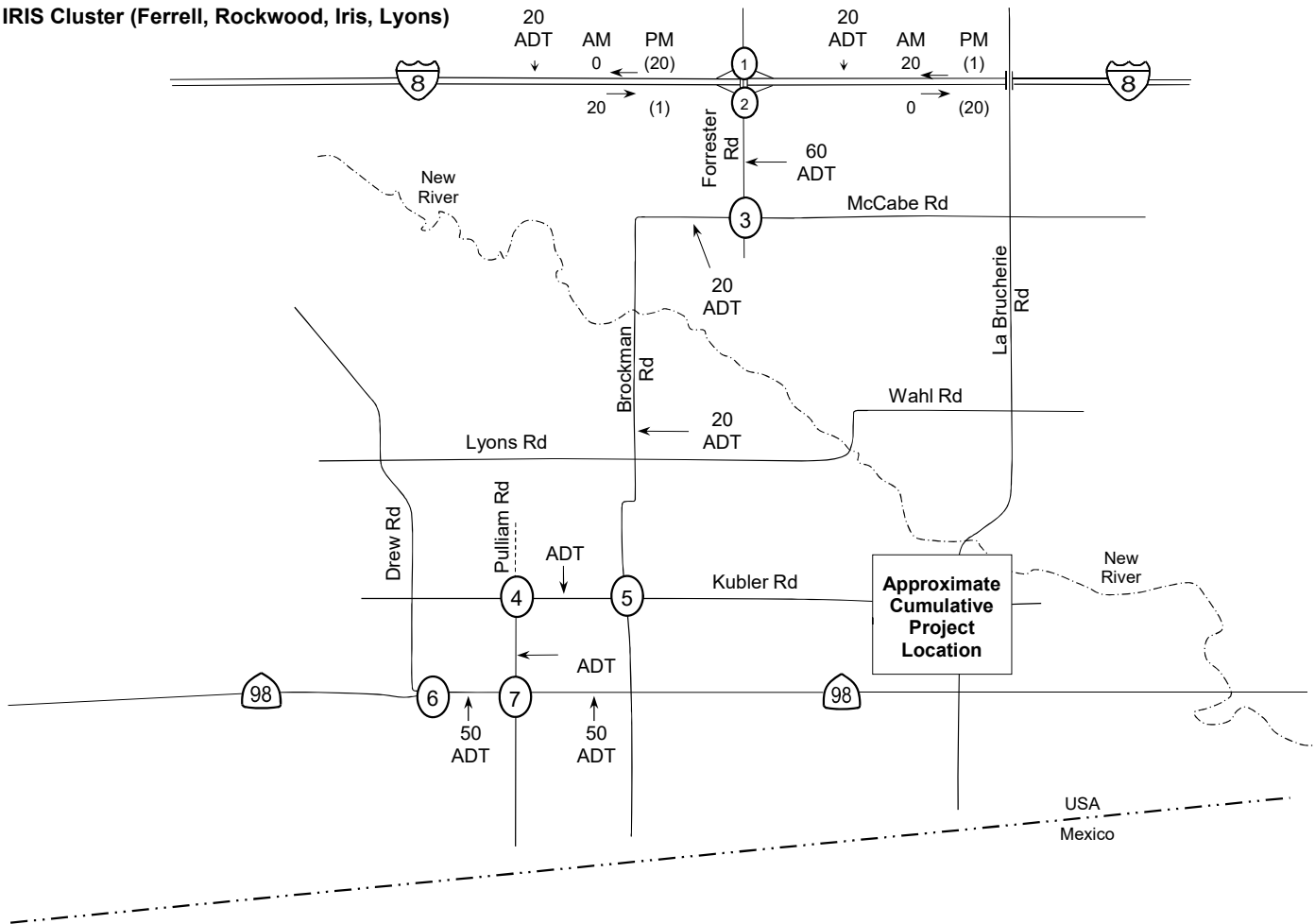


CUMULATIVE PROJECTS: IV SUBSTATION & OGDILLO SOLAR



Forrester Rd I-8 WB Ramp 1	I-8 EB Ramp 2 Forrester Rd	McCabe Rd 3
Brockman Rd Lyons Rd 4	Brockman Rd Kubler Rd 5	Brockman Rd SR-98 6 0(4) 4(0)
Brockman Rd Anza Rd 7	La Brucherie Rd McCabe Rd 8	La Brucherie Rd Wahl Rd 9
La Brucherie Rd Kubler Rd 10	Ferrell Rd SR-98 11 0(4) 4(0)	Ferrell Rd Anza Rd 12

IRIS Cluster (Ferrell, Rockwood, Iris, Lyons)



4.0 Project Description

The project is a solar photovoltaic energy-generating facility capable of producing approximately 250 megawatts of electricity on approximately 2,793 acres. The project is located approximately 8 miles west of the City of Calexico in the Mt. Signal area of Imperial Valley. The project is located on privately owned, agricultural land.

4.1 Project Trip Generation and Phases/Phasing

The project trip generation consists of a construction phase and operations phase. The construction phase will have the highest intensity followed by an operations phase with significantly fewer trips. This section describes the construction and operations trip generation. Project description details are included in **Appendix J**.

The project may be phased over time; therefore, four possible phases were analyzed. This included the entire project being constructed early in 2013 (existing conditions scenario), the entire project being constructed on a typical schedule that accounts for time needed to obtain permits and financing for the project in 2016 (near-term scenario), the entire project being construct in 2019 (2024 minus 5 years for a mid-point scenario of the CUP), and the entire project being delayed due to market forces until 2024 (long-term scenario).

4.1.1 Project Construction Trip Generation

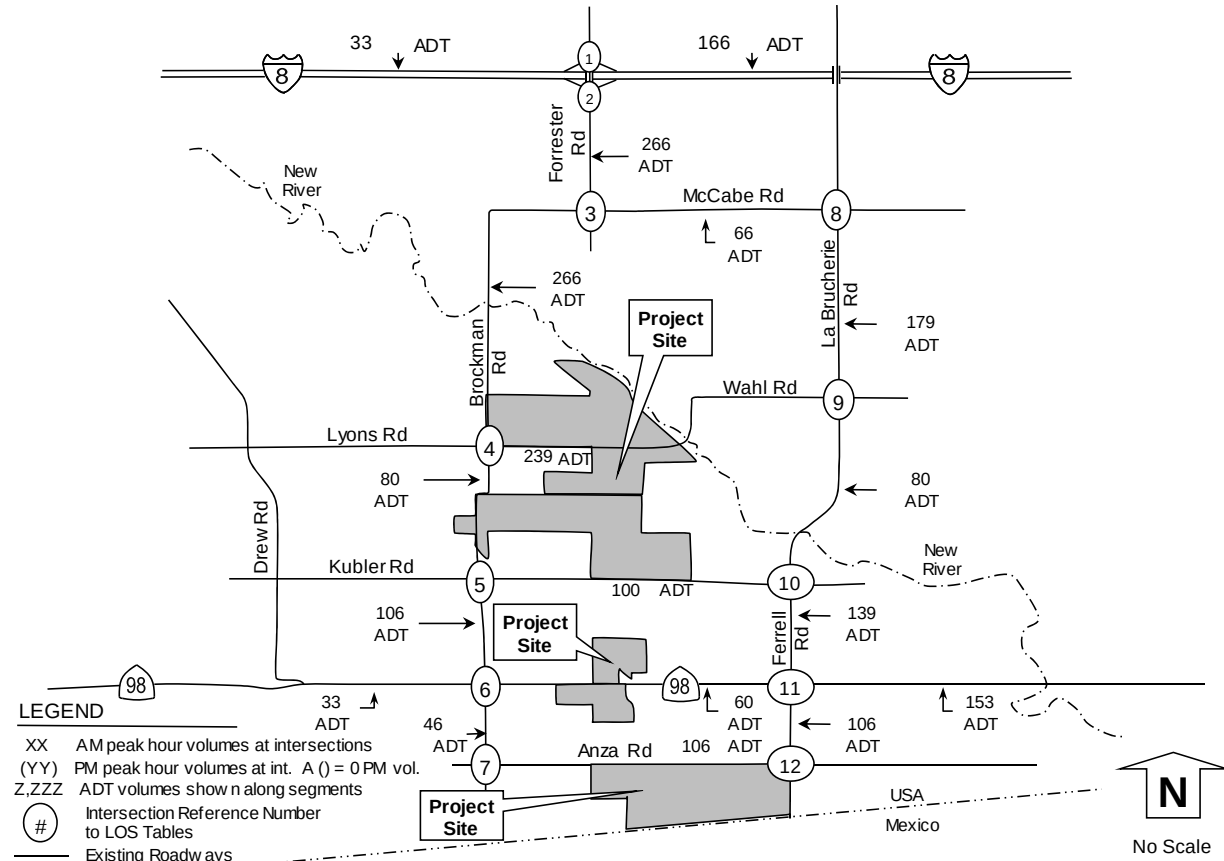
Construction of the project includes site preparation, foundation construction, delivery of equipment and supplies, erection of major equipment and structures, installation of control systems, and start-up/testing. These construction activities are expected to require approximately 18 months. According to the Applicant, the construction workforce is expected to start in 2015 and reach the highest concentration in spring of 2016 (for the near-term scenario) with an average of 250 workers and a possible peak of up to 350 daily workers. Based on the applicant's experience in the current construction of IV Solar South, about 75% of the workers follow a 4 day at 10 hours per day (4-10) schedule, about 25% follow a 5 day at 8 hours per day (5-8) schedule, and roughly 25% of the workers carpool. The workers also have different start and end times between the 4-10 and 5-8 schedule. The 4-10 workers typically arrive at 6am and depart at 5pm while the 8-5 workers typically arrive at 7am and depart at 4pm. This analysis is based on the higher concentration (75%) of 4-10 workers that arrive a 6am and depart at 5pm. The worker and construction truck traffic is calculated at 664 ADT with 209 AM peak hour trips (203 inbound and 6 outbound) and 209 PM peak hour trips (6 inbound and 203 outbound) as shown in **Table 8**.

TABLE 8: PROJECT CONSTRUCTION TRIP GENERATION

Proposed Construction Related Traffic	ADT	6:00 AM		7:00 AM		4:00 PM		5:00 PM	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT
Construction Workers on 4-10 Shift (75% of 350) ¹	394	197	0	0	0	0	0	0	197
Construction Workers on 5-8 Shift (25% of 350) ²	132	0	0	66	0	0	66	0	0
Equipment and Construction Trucks (with PCE) ³	138	6	6	6	6	6	6	6	6
Total Traffic During Peak Construction Period	664	203	6	72	6	6	72	6	203
Daily and Higher Peak Hour Used For Analysis	664	203	6					6	203

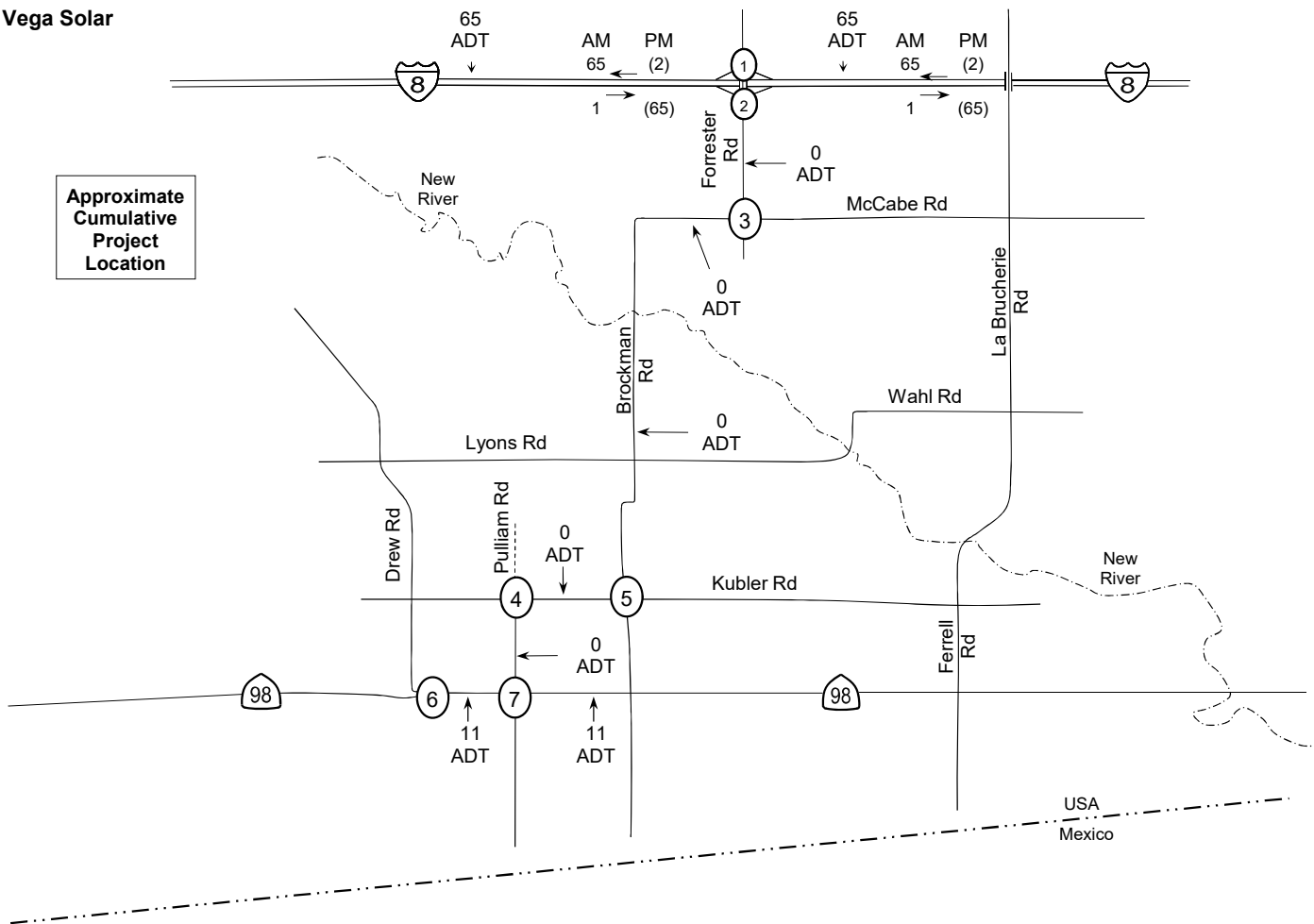
Notes: 1) Applicant estimates the 4 days at 10 hrs/day (4-10) shift to include about 75% of the total 350 peak work force with about 25% carpooling. 2) Applicant estimates the 5 days at 8 hrs/day (5-8) shift to include about 25% of the total 350 peak work forces with about 25% carpooling. 3) About 23 daily trucks with a Passenger Car Equivalent (PCE) factor of 3 applied to each truck equals 138 ADT (23 trucks x 2 x 3 PCE = 138 ADT) that are anticipated to have a frequency of about 2 per hour for a peak period volume of 6 (with PCE).

Figure 7: Project Construction Traffic



Forrester Rd 0 0 20 (1) 1 (20)		I-8 WB Ramp 0 0 51 (2)		I-8 EB Ramp 0 0 10 (3) 1 (30)		Forrester Rd 71 0 2 (51) 0 (10)		McCabe Rd 71 0 10 (10) 0 (10)		Forrester Rd 2 0 0 (71) 0 (10)		McCabe Rd 10 (1) 0 (10) 0 (10)		SR-98 6 2 2 (6) 0 (12)		Wahl Rd 0 0 0 (14) 0 (2)		Anza Rd 0 0 0 (14) 0 (14)		La Brucherie Rd 0 0 0 (6) 0 (24)		Kubler Rd 0 0 0 (18) 0 (18)		SR-98 18 (1) 18 (10) 10 (10)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd 0 0 0 (1) 0 (1)		Wahl Rd 0 0 0 (1) 0 (1)		Anza Rd 0 0 0 (1) 0 (1)		Forrester Rd 0 0 0 (1) 0 (1)		McCabe Rd
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Vega Solar



I-8 WB Ramp Forrester Rd 1	I-8 EB Ramp Forrester Rd 2	McCabe Rd Forrester Rd 3
Kubler Rd Pulliam Rd 4	Kubler Rd Brockman Rd 5	Drew Rd SR-98 6
SR-98 Pulliam Rd 7	LEGEND XX AM peak hour volumes at intersections (YY) PM peak hour volumes at intersections. an empty bracket () represents a 0 PM volume Z,ZZZ ADT volumes shown along segments (#) Intersection Reference Number to LOS Tables Existing Roadways Existing Unpaved Roadway	

No Scale

I-8 Forecasted Background Cumulative

Freeway Segment	I-8 Drew Rd to Forrester Rd				I-8 Forrester Rd to Imperial Ave			
	Forecasted Year 2017				Forecasted Year 2017			
ADT	14,000				17,200			
Peak Hour	A M		P M		A M		P M	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor (2)	0.1346	0.1346	0.1631	0.1631	0.1346	0.1346	0.1631	0.1631
D Factor (3)	0.4770	0.5230	0.4958	0.5042	0.4770	0.5230	0.4958	0.5042
Truck Factor (4)	0.8712	0.8712	0.8712	0.8712	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	1,032	1,131	1,299	1,321	1,318	1,446	1,661	1,689
5% of background	52	57	65	66	66	72	83	84

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2017 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2017 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2015 report).

Appendix M

Year 2017 + Project Construction Intersection LOS Calculations

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	76	0	83	12	98	0	0	148	67
Future Vol, veh/h	0	0	0	76	0	83	12	98	0	0	148	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	83	0	90	13	107	0	0	161	73
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				331	367	107	234	0	-	-	-	0
Stage 1				133	133	-	-	-	-	-	-	-
Stage 2				198	234	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				664	562	947	1333	-	0	0	-	-
Stage 1				893	786	-	-	-	0	0	-	-
Stage 2				835	711	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				657	0	947	1333	-	-	-	-	-
Mov Cap-2 Maneuver				657	0	-	-	-	-	-	-	-
Stage 1				884	0	-	-	-	-	-	-	-
Stage 2				835	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10.2		0.8		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1333	-	657	947	-	-						
HCM Lane V/C Ratio	0.01	-	0.126	0.095	-	-						
HCM Control Delay (s)	7.7	0	11.3	9.2	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile Q(veh)	0	-	0.4	0.3	-	-						

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰			↰	
Traffic Vol, veh/h	57	1	9	0	0	0	0	56	21	75	144	0
Future Vol, veh/h	57	1	9	0	0	0	0	56	21	75	144	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	1	10	0	0	0	0	61	23	82	157	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	394	405	157				-	0	0	84	0	0
Stage 1	321	321	-				-	-	-	-	-	-
Stage 2	73	84	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	611	535	889				0	-	-	1513	-	0
Stage 1	735	652	-				0	-	-	-	-	0
Stage 2	950	825	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	575	0	889				-	-	-	1513	-	-
Mov Cap-2 Maneuver	575	0	-				-	-	-	-	-	-
Stage 1	692	0	-				-	-	-	-	-	-
Stage 2	950	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	11.6						0		2.6			
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	575	889	1513	-						
HCM Lane V/C Ratio	-	-	0.11	0.011	0.054	-						
HCM Control Delay (s)	-	-	12	9.1	7.5	0						
HCM Lane LOS	-	-	B	A	A	A						
HCM 95th %tile O(veh)	-	-	0.4	0	0.2	-						

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	14	2	1	44	33	4	3	1	77	7	70
Future Vol, veh/h	15	14	2	1	44	33	4	3	1	77	7	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	15	2	1	48	36	4	3	1	84	8	76
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	84	0	0	17	0	0	158	134	16	118	117	66
Stage 1	-	-	-	-	-	-	48	48	-	68	68	-
Stage 2	-	-	-	-	-	-	110	86	-	50	49	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1513	-	-	1600	-	-	808	757	1063	858	773	998
Stage 1	-	-	-	-	-	-	965	855	-	942	838	-
Stage 2	-	-	-	-	-	-	895	824	-	963	854	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1513	-	-	1600	-	-	734	748	1063	847	764	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	734	748	-	847	764	-
Stage 1	-	-	-	-	-	-	954	846	-	932	837	-
Stage 2	-	-	-	-	-	-	818	823	-	948	845	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.6			0.1			9.7			9.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	769	1513	-	-	1600	-	-	905				
HCM Lane V/C Ratio	0.011	0.011	-	-	0.001	-	-	0.185				
HCM Control Delay (s)	9.7	7.4	0	-	7.3	0	-	9.9				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.7				

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	1	43	44	0	1	1	2	0	0	0
Future Vol, veh/h	0	2	1	43	44	0	1	1	2	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	1	47	48	0	1	1	2	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	3	0	0	145	145	3	146	145	48
Stage 1	-	-	-	-	-	-	3	3	-	142	142	-
Stage 2	-	-	-	-	-	-	142	142	-	4	3	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1559	-	-	1619	-	-	824	746	1081	823	746	1021
Stage 1	-	-	-	-	-	-	1020	893	-	861	779	-
Stage 2	-	-	-	-	-	-	861	779	-	1018	893	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1559	-	-	1619	-	-	805	724	1081	802	724	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	805	724	-	802	724	-
Stage 1	-	-	-	-	-	-	1020	893	-	861	756	-
Stage 2	-	-	-	-	-	-	835	756	-	1015	893	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.6			9			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	894	1559	-	-	1619	-	-	-				
HCM Lane V/C Ratio	0.005	-	-	-	0.029	-	-	-				
HCM Control Delay (s)	9	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	-				

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	1	0	1	0	2	0	11	0	4	13	88
Future Vol, veh/h	5	1	0	1	0	2	0	11	0	4	13	88
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	1	0	1	0	2	0	12	0	4	14	96
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	83	82	62	83	130	12	110	0	0	12	0	0
Stage 1	70	70	-	12	12	-	-	-	-	-	-	-
Stage 2	13	12	-	71	118	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	904	808	1003	904	761	1069	1480	-	-	1607	-	-
Stage 1	940	837	-	1009	886	-	-	-	-	-	-	-
Stage 2	1007	886	-	939	798	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	900	806	1003	901	759	1069	1480	-	-	1607	-	-
Mov Cap-2 Maneuver	900	806	-	901	759	-	-	-	-	-	-	-
Stage 1	940	834	-	1009	886	-	-	-	-	-	-	-
Stage 2	1005	886	-	935	796	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		8.6			0			0.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1480	-	-	883	1006	1607	-	-				
HCM Lane V/C Ratio	-	-	-	0.007	0.003	0.003	-	-				
HCM Control Delay (s)	0	-	-	9.1	8.6	7.2	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0	0	0	-	-				

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	40	43	33	3	5
Future Vol, veh/h	10	40	43	33	3	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, %	2	2	2	2	2	2
Mvmt Flow	11	43	47	36	3	5

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	83	0	0 130 65
Stage 1	-	-	- 65 -
Stage 2	-	-	- 65 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1514	-	- 864 999
Stage 1	-	-	- 958 -
Stage 2	-	-	- 958 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1514	-	- 858 999
Mov Cap-2 Maneuver	-	-	- 858 -
Stage 1	-	-	- 951 -
Stage 2	-	-	- 958 -

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1514	-	-	-	941
HCM Lane V/C Ratio	0.007	-	-	-	0.009
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	36	0	1	66	7	12	1	1	0	0	22
Future Vol, veh/h	0	36	0	1	66	7	12	1	1	0	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	39	0	1	72	8	13	1	1	0	0	24
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	39	0	0	129	121	39	118	117	76
Stage 1	-	-	-	-	-	-	39	39	-	78	78	-
Stage 2	-	-	-	-	-	-	90	82	-	40	39	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1518	-	-	1571	-	-	844	769	1033	858	773	985
Stage 1	-	-	-	-	-	-	976	862	-	931	830	-
Stage 2	-	-	-	-	-	-	917	827	-	975	862	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1518	-	-	1571	-	-	823	768	1033	855	772	985
Mov Cap-2 Maneuver	-	-	-	-	-	-	823	768	-	855	772	-
Stage 1	-	-	-	-	-	-	976	862	-	931	829	-
Stage 2	-	-	-	-	-	-	894	826	-	973	862	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			9.4			8.7		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	831	1518	-	-	1571	-	-	985				
HCM Lane V/C Ratio	0.018	-	-	-	0.001	-	-	0.024				
HCM Control Delay (s)	9.4	0	-	-	7.3	0	-	8.7				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	36	78	22	0	0
Future Vol, veh/h	7	36	78	22	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	39	85	24	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	109	0	-	0	152	97
Stage 1	-	-	-	-	97	-
Stage 2	-	-	-	-	55	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1481	-	-	-	840	959
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	968	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1481	-	-	-	835	959
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	968	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.2	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1481	-	-	-	-	
HCM Lane V/C Ratio	0.005	-	-	-	-	
HCM Control Delay (s)	7.4	0	-	-	0	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	17	0	71	8	147	0	0	193	54
Future Vol, veh/h	0	0	0	17	0	71	8	147	0	0	193	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	18	0	77	9	160	0	0	210	59
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				418	447	160	269	0	-	-	-	0
Stage 1				178	178	-	-	-	-	-	-	-
Stage 2				240	269	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				591	506	885	1295	-	0	0	-	-
Stage 1				853	752	-	-	-	0	0	-	-
Stage 2				800	687	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				586	0	885	1295	-	-	-	-	-
Mov Cap-2 Maneuver				586	0	-	-	-	-	-	-	-
Stage 1				846	0	-	-	-	-	-	-	-
Stage 2				800	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				9.8		0.4		0				
HCM LOS				A								
Minor Lane/Major Mvmt		NBL	NBTWBLn1WBLn2		SBT	SBR						
Capacity (veh/h)		1295	-	586	885	-	-					
HCM Lane V/C Ratio		0.007	-	0.032	0.087	-	-					
HCM Control Delay (s)		7.8	0	11.3	9.5	-	-					
HCM Lane LOS		A	A	B	A	-	-					
HCM 95th %tile O(veh)		0	-	0.1	0.3	-	-					

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↖			↕	
Traffic Vol, veh/h	84	0	4	0	0	0	0	69	57	168	43	0
Future Vol, veh/h	84	0	4	0	0	0	0	69	57	168	43	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	91	0	4	0	0	0	0	75	62	183	47	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	519	550	47				-	0	0	137	0	0
Stage 1	413	413	-				-	-	-	-	-	-
Stage 2	106	137	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	517	443	1022				0	-	-	1447	-	0
Stage 1	668	594	-				0	-	-	-	-	0
Stage 2	918	783	-				0	-	-	-	-	0
Platoon blocked, %							-	-	-			
Mov Cap-1 Maneuver	450	0	1022				-	-	-	1447	-	-
Mov Cap-2 Maneuver	450	0	-				-	-	-	-	-	-
Stage 1	581	0	-				-	-	-	-	-	-
Stage 2	918	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	14.7						0		6.2			
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	450	1022	1447	-						
HCM Lane V/C Ratio	-	-	0.203	0.004	0.126	-						
HCM Control Delay (s)	-	-	15	8.5	7.8	0						
HCM Lane LOS	-	-	C	A	A	A						
HCM 95th %tile O(veh)	-	-	0.8	0	0.4	-						

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	81	58	1	0	8	37	5	5	1	51	1	5
Future Vol, veh/h	81	58	1	0	8	37	5	5	1	51	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	63	1	0	9	40	5	5	1	55	1	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	64	0	0	272	289	64	272	269	29
Stage 1	-	-	-	-	-	-	240	240	-	29	29	-
Stage 2	-	-	-	-	-	-	32	49	-	243	240	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1558	-	-	1538	-	-	680	621	1000	680	637	1046
Stage 1	-	-	-	-	-	-	763	707	-	988	871	-
Stage 2	-	-	-	-	-	-	984	854	-	761	707	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1538	-	-	645	584	1000	644	599	1046
Mov Cap-2 Maneuver	-	-	-	-	-	-	645	584	-	644	599	-
Stage 1	-	-	-	-	-	-	718	665	-	930	871	-
Stage 2	-	-	-	-	-	-	978	854	-	709	665	-
Approach	EB		WB				NB			SB		
HCM Control Delay, s	4.3		0				10.8			11		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	635	1558	-	-	1538	-	-	666				
HCM Lane V/C Ratio	0.019	0.057	-	-	-	-	-	0.093				
HCM Control Delay (s)	10.8	7.4	0	-	0	-	-	11				
HCM Lane LOS	B	A	A	-	A	-	-	B				
HCM 95th %tile O(veh)	0.1	0.2	-	-	0	-	-	0.3				

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	46	0	2	2	0	0	0	43	1	0	0
Future Vol, veh/h	0	46	0	2	2	0	0	0	43	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	50	0	2	2	0	0	0	47	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	50	0	0	56	56	50	80	56	2
Stage 1	-	-	-	-	-	-	50	50	-	6	6	-
Stage 2	-	-	-	-	-	-	6	6	-	74	50	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1620	-	-	1557	-	-	941	835	1018	908	835	1082
Stage 1	-	-	-	-	-	-	963	853	-	1016	891	-
Stage 2	-	-	-	-	-	-	1016	891	-	935	853	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1557	-	-	940	834	1018	865	834	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	940	834	-	865	834	-
Stage 1	-	-	-	-	-	-	963	853	-	1016	890	-
Stage 2	-	-	-	-	-	-	1015	890	-	892	853	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.7			8.7			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	1018	1620	-	-	1557	-	-	865				
HCM Lane V/C Ratio	0.046	-	-	-	0.001	-	-	0.001				
HCM Control Delay (s)	8.7	0	-	-	7.3	0	-	9.2				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	86	3	1	2	2	0	0	7	0	3	10	2
Future Vol, veh/h	86	3	1	2	2	0	0	7	0	3	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	93	3	1	2	2	0	0	8	0	3	11	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	27	26	12	28	27	8	13	0	0	8	0	0
Stage 1	18	18	-	8	8	-	-	-	-	-	-	-
Stage 2	9	8	-	20	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	983	867	1069	981	866	1074	1606	-	-	1612	-	-
Stage 1	1001	880	-	1013	889	-	-	-	-	-	-	-
Stage 2	1012	889	-	999	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	980	865	1069	976	864	1074	1606	-	-	1612	-	-
Mov Cap-2 Maneuver	980	865	-	976	864	-	-	-	-	-	-	-
Stage 1	1001	878	-	1013	889	-	-	-	-	-	-	-
Stage 2	1010	889	-	992	878	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		8.9			0			1.4			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1606	-	-	977	917	1612	-	-				
HCM Lane V/C Ratio	-	-	-	0.1	0.005	0.002	-	-				
HCM Control Delay (s)	0	-	-	9.1	8.9	7.2	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.3	0	0	-	-				

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	55	34	11	35	9
Future Vol, veh/h	0	55	34	11	35	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	37	12	38	10
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	49	0	-	0	103	43
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1558	-	-	-	895	1027
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	963	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1558	-	-	-	895	1027
Mov Cap-2 Maneuver	-	-	-	-	895	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	963	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.1		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1558	-	-	-	919	
HCM Lane V/C Ratio	-	-	-	-	0.052	
HCM Control Delay (s)	0	-	-	-	9.1	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

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	22	91	0	0	37	0	0	0	1	7	0	1
Future Vol, veh/h	22	91	0	0	37	0	0	0	1	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	99	0	0	40	0	0	0	1	8	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	40	0	0	99	0	0	188	187	99	188	187	40
Stage 1	-	-	-	-	-	-	147	147	-	40	40	-
Stage 2	-	-	-	-	-	-	41	40	-	148	147	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1570	-	-	1494	-	-	772	708	957	772	708	1031
Stage 1	-	-	-	-	-	-	856	775	-	975	862	-
Stage 2	-	-	-	-	-	-	974	862	-	855	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1570	-	-	1494	-	-	762	697	957	762	697	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	762	697	-	762	697	-
Stage 1	-	-	-	-	-	-	842	763	-	959	862	-
Stage 2	-	-	-	-	-	-	973	862	-	840	763	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			0			8.8			9.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	957	1570	-	-	1494	-	-	788				
HCM Lane V/C Ratio	0.001	0.015	-	-	-	-	-	0.011				
HCM Control Delay (s)	8.8	7.3	0	-	0	-	-	9.6				
HCM Lane LOS	A	A	A	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0				

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	91	38	0	22	7
Future Vol, veh/h	0	91	38	0	22	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, %	2	2	2	2	2	2
Mvmt Flow	0	99	41	0	24	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	41	0	0 140 41
Stage 1	-	-	- 41 -
Stage 2	-	-	- 99 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1568	-	- 853 1030
Stage 1	-	-	- 981 -
Stage 2	-	-	- 925 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1568	-	- 853 1030
Mov Cap-2 Maneuver	-	-	- 853 -
Stage 1	-	-	- 981 -
Stage 2	-	-	- 925 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1568	-	-	-	890
HCM Lane V/C Ratio	-	-	-	-	0.035
HCM Control Delay (s)	0	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Appendix N

Year 2017 + Project Construction + Cumulative Intersection LOS Calculations

AM 2017 + Cumulative
1: Forrester Road & I-8 WB Ramp

HCM 2010 TWSC

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	171	0	93	12	110	0	0	246	78
Future Vol, veh/h	0	0	0	171	0	93	12	110	0	0	246	78
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	186	0	101	13	120	0	0	267	85
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				456	498	120	352	0	-	-	-	0
Stage 1				146	146	-	-	-	-	-	-	-
Stage 2				310	352	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				562	474	931	1207	-	0	0	-	-
Stage 1				881	776	-	-	-	0	0	-	-
Stage 2				744	632	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				555	0	931	1207	-	-	-	-	-
Mov Cap-2 Maneuver				555	0	-	-	-	-	-	-	-
Stage 1				870	0	-	-	-	-	-	-	-
Stage 2				744	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				12.8		0.8		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1207	-	555	931	-	-						
HCM Lane V/C Ratio	0.011	-	0.335	0.109	-	-						
HCM Control Delay (s)	8	0	14.7	9.3	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile Q(veh)	0	-	1.5	0.4	-	-						

AM 2017 + Cumulative
2: Forrester Road & I-8 EB Ramp

HCM 2010 TWSC

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰			↰	
Traffic Vol, veh/h	57	1	57	0	0	0	0	57	23	106	286	0
Future Vol, veh/h	57	1	57	0	0	0	0	57	23	106	286	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	1	62	0	0	0	0	62	25	115	311	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	616	628	311				-	0	0	87	0	0
Stage 1	541	541	-				-	-	-	-	-	-
Stage 2	75	87	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	454	400	729				0	-	-	1509	-	0
Stage 1	583	521	-				0	-	-	-	-	0
Stage 2	948	823	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	412	0	729				-	-	-	1509	-	-
Mov Cap-2 Maneuver	412	0	-				-	-	-	-	-	-
Stage 1	529	0	-				-	-	-	-	-	-
Stage 2	948	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	12.9						0		2.1			
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	412	729	1509	-						
HCM Lane V/C Ratio	-	-	0.153	0.085	0.076	-						
HCM Control Delay (s)	-	-	15.3	10.4	7.6	0						
HCM Lane LOS	-	-	C	B	A	A						
HCM 95th %tile O(veh)	-	-	0.5	0.3	0.2	-						

Intersection												
Int Delay, s/veh	9.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	13	2	1	47	35	4	3	1	199	7	158
Future Vol, veh/h	16	13	2	1	47	35	4	3	1	199	7	158
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	14	2	1	51	38	4	3	1	216	8	172
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	89	0	0	16	0	0	211	140	15	123	122	70
Stage 1	-	-	-	-	-	-	49	49	-	72	72	-
Stage 2	-	-	-	-	-	-	162	91	-	51	50	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1506	-	-	1602	-	-	746	751	1065	852	768	993
Stage 1	-	-	-	-	-	-	964	854	-	938	835	-
Stage 2	-	-	-	-	-	-	840	820	-	962	853	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1506	-	-	1602	-	-	606	742	1065	841	759	993
Mov Cap-2 Maneuver	-	-	-	-	-	-	606	742	-	841	759	-
Stage 1	-	-	-	-	-	-	953	845	-	928	834	-
Stage 2	-	-	-	-	-	-	688	819	-	947	844	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.8			0.1			10.3			12.1		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	691	1506	-	-	1602	-	-	899				
HCM Lane V/C Ratio	0.013	0.012	-	-	0.001	-	-	0.44				
HCM Control Delay (s)	10.3	7.4	0	-	7.2	0	-	12.1				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	2.3				

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	1	0	89	0	1	1	1	0	0	0
Future Vol, veh/h	0	1	1	0	89	0	1	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	1	0	97	0	1	1	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	97	0	0	2	0	0	99	99	2	100	99	97
Stage 1	-	-	-	-	-	-	2	2	-	97	97	-
Stage 2	-	-	-	-	-	-	97	97	-	3	2	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1496	-	-	1620	-	-	883	791	1082	881	791	959
Stage 1	-	-	-	-	-	-	1021	894	-	910	815	-
Stage 2	-	-	-	-	-	-	910	815	-	1020	894	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1496	-	-	1620	-	-	883	791	1082	879	791	959
Mov Cap-2 Maneuver	-	-	-	-	-	-	883	791	-	879	791	-
Stage 1	-	-	-	-	-	-	1021	894	-	910	815	-
Stage 2	-	-	-	-	-	-	910	815	-	1018	894	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	903	1496	-	-	1620	-	-	-				
HCM Lane V/C Ratio	0.004	-	-	-	-	-	-	-				
HCM Control Delay (s)	9	0	-	-	0	-	-	0				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	-				

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	3	0	1	0	6	44	12	0	28	33	46
Future Vol, veh/h	3	3	0	1	0	6	44	12	0	28	33	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	0	1	0	7	48	13	0	30	36	50
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	234	230	61	232	255	13	86	0	0	13	0	0
Stage 1	121	121	-	109	109	-	-	-	-	-	-	-
Stage 2	113	109	-	123	146	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	721	670	1004	723	649	1067	1510	-	-	1606	-	-
Stage 1	883	796	-	896	805	-	-	-	-	-	-	-
Stage 2	892	805	-	881	776	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	689	636	1004	692	616	1067	1510	-	-	1606	-	-
Mov Cap-2 Maneuver	689	636	-	692	616	-	-	-	-	-	-	-
Stage 1	855	780	-	867	779	-	-	-	-	-	-	-
Stage 2	858	779	-	860	760	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.5		8.7		5.9		1.9					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1510	-	-	661	990	1606	-	-				
HCM Lane V/C Ratio	0.032	-	-	0.01	0.008	0.019	-	-				
HCM Control Delay (s)	7.5	0	-	10.5	8.7	7.3	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile O(veh)	0.1	-	-	0	0	0.1	-	-				

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	55	47	31	4	5
Future Vol, veh/h	3	55	47	31	4	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, %	2	2	2	2	2	2
Mvmt Flow	3	60	51	34	4	5

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	85	0	0 134 68
Stage 1	-	-	- 68 -
Stage 2	-	-	- 66 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1512	-	- 860 995
Stage 1	-	-	- 955 -
Stage 2	-	-	- 957 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1512	-	- 858 995
Mov Cap-2 Maneuver	-	-	- 858 -
Stage 1	-	-	- 953 -
Stage 2	-	-	- 957 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1512	-	-	-	929
HCM Lane V/C Ratio	0.002	-	-	-	0.011
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	59	0	1	68	0	12	1	1	0	0	0
Future Vol, veh/h	0	59	0	1	68	0	12	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	64	0	1	74	0	13	1	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	74	0	0	64	0	0	140	140	64	141	140	74
Stage 1	-	-	-	-	-	-	64	64	-	76	76	-
Stage 2	-	-	-	-	-	-	76	76	-	65	64	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1526	-	-	1538	-	-	830	751	1000	829	751	988
Stage 1	-	-	-	-	-	-	947	842	-	933	832	-
Stage 2	-	-	-	-	-	-	933	832	-	946	842	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1526	-	-	1538	-	-	829	750	1000	827	750	988
Mov Cap-2 Maneuver	-	-	-	-	-	-	829	750	-	827	750	-
Stage 1	-	-	-	-	-	-	947	842	-	933	831	-
Stage 2	-	-	-	-	-	-	932	831	-	944	842	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			9.4			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	833	1526	-	-	1538	-	-	-				
HCM Lane V/C Ratio	0.018	-	-	-	0.001	-	-	-				
HCM Control Delay (s)	9.4	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	-				

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	59	80	0	0	0
Future Vol, veh/h	0	59	80	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	64	87	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	87	0	0 151 87
Stage 1	-	-	- 87 -
Stage 2	-	-	- 64 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1509	-	- 841 971
Stage 1	-	-	- 936 -
Stage 2	-	-	- 959 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1509	-	- 841 971
Mov Cap-2 Maneuver	-	-	- 841 -
Stage 1	-	-	- 936 -
Stage 2	-	-	- 959 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1509	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	21	0	105	56	214	0	0	216	54
Future Vol, veh/h	0	0	0	21	0	105	56	214	0	0	216	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	23	0	114	61	233	0	0	235	59
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				620	649	233	294	0	-	-	-	0
Stage 1				355	355	-	-	-	-	-	-	-
Stage 2				265	294	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				452	389	806	1268	-	0	0	-	-
Stage 1				710	630	-	-	-	0	0	-	-
Stage 2				779	670	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				427	0	806	1268	-	-	-	-	-
Mov Cap-2 Maneuver				427	0	-	-	-	-	-	-	-
Stage 1				671	0	-	-	-	-	-	-	-
Stage 2				779	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10.8		1.7		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1268	-	427	806	-	-						
HCM Lane V/C Ratio	0.048	-	0.053	0.142	-	-						
HCM Control Delay (s)	8	0	13.9	10.2	-	-						
HCM Lane LOS	A	A	B	B	-	-						
HCM 95th %tile O(veh)	0.2	-	0.2	0.5	-	-						

PM 2017 + Cumulative
2: Forrester Road & I-8 EB Ramp

HCM 2010 TWSC

Intersection													
Int Delay, s/veh	5.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕	↗					↖			↕		
Traffic Vol, veh/h	95	0	6	0	0	0	0	184	152	188	49	0	
Future Vol, veh/h	95	0	6	0	0	0	0	184	152	188	49	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	103	0	7	0	0	0	0	200	165	204	53	0	
Major/Minor	Minor2			Major1				Major2					
Conflicting Flow All	744	826	53					-	0	0	365	0	0
Stage 1	461	461	-					-	-	-	-	-	-
Stage 2	283	365	-					-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22					-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-					-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-					-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318					-	-	-	2.218	-	-
Pot Cap-1 Maneuver	382	307	1014					0	-	-	1194	-	0
Stage 1	635	565	-					0	-	-	-	-	0
Stage 2	765	623	-					0	-	-	-	-	0
Platoon blocked, %								-	-	-			
Mov Cap-1 Maneuver	315	0	1014					-	-	-	1194	-	-
Mov Cap-2 Maneuver	315	0	-					-	-	-	-	-	-
Stage 1	523	0	-					-	-	-	-	-	-
Stage 2	765	0	-					-	-	-	-	-	-
Approach	EB			NB				SB					
HCM Control Delay, s	21.1			0				6.9					
HCM LOS	C												
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT							
Capacity (veh/h)	-	-	315	1014	1194	-							
HCM Lane V/C Ratio	-	-	0.328	0.006	0.171	-							
HCM Control Delay (s)	-	-	21.9	8.6	8.6	0							
HCM Lane LOS	-	-	C	A	A	A							
HCM 95th %tile Q(veh)	-	-	1.4	0	0.6	-							

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	169	61	1	0	7	159	5	5	1	57	1	8
Future Vol, veh/h	169	61	1	0	7	159	5	5	1	57	1	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	184	66	1	0	8	173	5	5	1	62	1	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	181	0	0	67	0	0	535	616	67	533	530	95
Stage 1	-	-	-	-	-	-	435	435	-	95	95	-
Stage 2	-	-	-	-	-	-	100	181	-	438	435	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1394	-	-	1535	-	-	456	406	997	458	455	962
Stage 1	-	-	-	-	-	-	600	580	-	912	816	-
Stage 2	-	-	-	-	-	-	906	750	-	597	580	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1394	-	-	1535	-	-	404	350	997	405	393	962
Mov Cap-2 Maneuver	-	-	-	-	-	-	404	350	-	405	393	-
Stage 1	-	-	-	-	-	-	518	501	-	787	816	-
Stage 2	-	-	-	-	-	-	897	750	-	509	501	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.8			0			14.3			14.9		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	398	1394	-	-	1535	-	-	435				
HCM Lane V/C Ratio	0.03	0.132	-	-	-	-	-	0.165				
HCM Control Delay (s)	14.3	8	0	-	0	-	-	14.9				
HCM Lane LOS	B	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.1	0.5	-	-	0	-	-	0.6				

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	91	0	1	1	0	0	0	0	1	0	0
Future Vol, veh/h	0	91	0	1	1	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	99	0	1	1	0	0	0	0	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	99	0	0	102	102	99	102	102	1
Stage 1	-	-	-	-	-	-	99	99	-	3	3	-
Stage 2	-	-	-	-	-	-	3	3	-	99	99	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1494	-	-	879	788	957	879	788	1084
Stage 1	-	-	-	-	-	-	907	813	-	1020	893	-
Stage 2	-	-	-	-	-	-	1020	893	-	907	813	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1494	-	-	878	787	957	878	787	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	878	787	-	878	787	-
Stage 1	-	-	-	-	-	-	907	813	-	1020	892	-
Stage 2	-	-	-	-	-	-	1019	892	-	907	813	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.7			0			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1622	-	-	1494	-	-	878				
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	0.001				
HCM Control Delay (s)	0	0	-	-	7.4	0	-	9.1				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	3	45	12	4	20	0	27	0	3	11	0
Future Vol, veh/h	44	3	45	12	4	20	0	27	0	3	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	3	49	13	4	22	0	29	0	3	12	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	60	47	12	73	47	29	12	0	0	29	0	0
Stage 1	18	18	-	29	29	-	-	-	-	-	-	-
Stage 2	42	29	-	44	18	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	936	845	1069	918	845	1046	1607	-	-	1584	-	-
Stage 1	1001	880	-	988	871	-	-	-	-	-	-	-
Stage 2	972	871	-	970	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	912	843	1069	872	843	1046	1607	-	-	1584	-	-
Mov Cap-2 Maneuver	912	843	-	872	843	-	-	-	-	-	-	-
Stage 1	1001	878	-	988	871	-	-	-	-	-	-	-
Stage 2	947	871	-	920	878	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.1		8.9		0		1.6					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1607	-	-	980	957	1584	-	-				
HCM Lane V/C Ratio	-	-	-	0.102	0.041	0.002	-	-				
HCM Control Delay (s)	0	-	-	9.1	8.9	7.3	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.3	0.1	0	-	-				

Intersection

Int Delay, s/veh 2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	60	49	11	33	2
Future Vol, veh/h	0	60	49	11	33	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	65	53	12	36	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	65	0	0 124 59
Stage 1	-	-	- 59 -
Stage 2	-	-	- 65 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1537	-	- 871 1007
Stage 1	-	-	- 964 -
Stage 2	-	-	- 958 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1537	-	- 871 1007
Mov Cap-2 Maneuver	-	-	- 871 -
Stage 1	-	-	- 964 -
Stage 2	-	-	- 958 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1537	-	-	-	878
HCM Lane V/C Ratio	-	-	-	-	0.043
HCM Control Delay (s)	0	-	-	-	9.3
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	94	0	0	59	0	0	0	1	0	0	1
Future Vol, veh/h	0	94	0	0	59	0	0	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	102	0	0	64	0	0	0	1	0	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	64	0	0	102	0	0	167	166	102	167	166	64
Stage 1	-	-	-	-	-	-	102	102	-	64	64	-
Stage 2	-	-	-	-	-	-	65	64	-	103	102	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1538	-	-	1490	-	-	797	727	953	797	727	1000
Stage 1	-	-	-	-	-	-	904	811	-	947	842	-
Stage 2	-	-	-	-	-	-	946	842	-	903	811	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1538	-	-	1490	-	-	796	727	953	796	727	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-	796	727	-	796	727	-
Stage 1	-	-	-	-	-	-	904	811	-	947	842	-
Stage 2	-	-	-	-	-	-	945	842	-	902	811	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			8.8			8.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	953	1538	-	-	1490	-	-	1000				
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	0.001				
HCM Control Delay (s)	8.8	0	-	-	0	-	-	8.6				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	94	60	0	0	0
Future Vol, veh/h	0	94	60	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	102	65	0	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	65	0	-	0	167	65
Stage 1	-	-	-	-	65	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1537	-	-	-	823	999
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	922	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1537	-	-	-	823	999
Mov Cap-2 Maneuver	-	-	-	-	823	-
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	922	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1537	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	207	0	93	12	110	0	0	268	78
Future Vol, veh/h	0	0	0	207	0	93	12	110	0	0	268	78
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	225	0	101	13	120	0	0	291	85
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				480	522	120	376	0	-	-	-	0
Stage 1				146	146	-	-	-	-	-	-	-
Stage 2				334	376	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				545	459	931	1182	-	0	0	-	-
Stage 1				881	776	-	-	-	0	0	-	-
Stage 2				725	616	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				538	0	931	1182	-	-	-	-	-
Mov Cap-2 Maneuver				538	0	-	-	-	-	-	-	-
Stage 1				870	0	-	-	-	-	-	-	-
Stage 2				725	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				14.2		0.8		0				
HCM LOS				B								
Minor Lane/Major Mvmt		NBL	NBT	WBLn1	WBLn2	SBT	SBR					
Capacity (veh/h)		1182	-	538	931	-	-					
HCM Lane V/C Ratio		0.011	-	0.418	0.109	-	-					
HCM Control Delay (s)		8.1	0	16.4	9.3	-	-					
HCM Lane LOS		A	A	C	A	-	-					
HCM 95th %tile O(veh)		0	-	2	0.4	-	-					

AM 2017 + Cumulative + Project
2: Forrester Road & I-8 EB Ramp

HCM 2010 TWSC

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰			↰	
Traffic Vol, veh/h	57	1	57	0	0	0	0	57	24	106	344	0
Future Vol, veh/h	57	1	57	0	0	0	0	57	24	106	344	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	1	62	0	0	0	0	62	26	115	374	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	679	692	374				-	0	0	88	0	0
Stage 1	604	604	-				-	-	-	-	-	-
Stage 2	75	88	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	417	367	672				0	-	-	1508	-	0
Stage 1	546	488	-				0	-	-	-	-	0
Stage 2	948	822	-				0	-	-	-	-	0
Platoon blocked, %							-	-	-			
Mov Cap-1 Maneuver	377	0	672				-	-	-	1508	-	-
Mov Cap-2 Maneuver	377	0	-				-	-	-	-	-	-
Stage 1	494	0	-				-	-	-	-	-	-
Stage 2	948	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	13.7						0		1.8			
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	377	672	1508	-						
HCM Lane V/C Ratio	-	-	0.167	0.092	0.076	-						
HCM Control Delay (s)	-	-	16.5	10.9	7.6	0						
HCM Lane LOS	-	-	C	B	A	A						
HCM 95th %tile O(veh)	-	-	0.6	0.3	0.2	-						

Intersection												
Int Delay, s/veh	10.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	14	2	1	76	35	4	3	1	199	7	216
Future Vol, veh/h	17	14	2	1	76	35	4	3	1	199	7	216
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	15	2	1	83	38	4	3	1	216	8	235
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	121	0	0	17	0	0	278	175	16	158	157	102
Stage 1	-	-	-	-	-	-	52	52	-	104	104	-
Stage 2	-	-	-	-	-	-	226	123	-	54	53	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1467	-	-	1600	-	-	674	718	1063	808	735	953
Stage 1	-	-	-	-	-	-	961	852	-	902	809	-
Stage 2	-	-	-	-	-	-	777	794	-	958	851	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1467	-	-	1600	-	-	499	709	1063	797	725	953
Mov Cap-2 Maneuver	-	-	-	-	-	-	499	709	-	797	725	-
Stage 1	-	-	-	-	-	-	949	842	-	891	808	-
Stage 2	-	-	-	-	-	-	579	793	-	942	841	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.9			0.1			11			13.7		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	607	1467	-	-	1600	-	-	868				
HCM Lane V/C Ratio	0.014	0.013	-	-	0.001	-	-	0.528				
HCM Control Delay (s)	11	7.5	0	-	7.3	0	-	13.7				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	3.2				

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	1	43	132	0	1	1	2	0	0	0
Future Vol, veh/h	0	2	1	43	132	0	1	1	2	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	1	47	143	0	1	1	2	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	143	0	0	3	0	0	240	240	3	241	240	143
Stage 1	-	-	-	-	-	-	3	3	-	237	237	-
Stage 2	-	-	-	-	-	-	237	237	-	4	3	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1440	-	-	1619	-	-	714	661	1081	713	661	905
Stage 1	-	-	-	-	-	-	1020	893	-	766	709	-
Stage 2	-	-	-	-	-	-	766	709	-	1018	893	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1440	-	-	1619	-	-	697	640	1081	693	640	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	697	640	-	693	640	-
Stage 1	-	-	-	-	-	-	1020	893	-	766	686	-
Stage 2	-	-	-	-	-	-	741	686	-	1015	893	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.8			9.4			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	825	1440	-	-	1619	-	-	-				
HCM Lane V/C Ratio	0.005	-	-	-	0.029	-	-	-				
HCM Control Delay (s)	9.4	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0.1	-	-	-				

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	3	0	1	0	6	44	12	0	28	33	132
Future Vol, veh/h	5	3	0	1	0	6	44	12	0	28	33	132
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	3	0	1	0	7	48	13	0	30	36	143
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	281	277	108	278	348	13	179	0	0	13	0	0
Stage 1	168	168	-	109	109	-	-	-	-	-	-	-
Stage 2	113	109	-	169	239	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	671	631	946	674	576	1067	1397	-	-	1606	-	-
Stage 1	834	759	-	896	805	-	-	-	-	-	-	-
Stage 2	892	805	-	833	708	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	639	596	946	643	544	1067	1397	-	-	1606	-	-
Mov Cap-2 Maneuver	639	596	-	643	544	-	-	-	-	-	-	-
Stage 1	805	743	-	865	777	-	-	-	-	-	-	-
Stage 2	856	777	-	812	693	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.9		8.7		6		1.1					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1397	-	-	622	975	1606	-	-				
HCM Lane V/C Ratio	0.034	-	-	0.014	0.008	0.019	-	-				
HCM Control Delay (s)	7.7	0	-	10.9	8.7	7.3	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile O(veh)	0.1	-	-	0	0	0.1	-	-				

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	62	47	60	5	5
Future Vol, veh/h	10	62	47	60	5	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, %	2	2	2	2	2	2
Mvmt Flow	11	67	51	65	5	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	116	0	-	0	173	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	89	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1473	-	-	-	817	975
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1473	-	-	-	810	975
Mov Cap-2 Maneuver	-	-	-	-	810	-
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	934	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		9.1		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1473	-	-	-	885	
HCM Lane V/C Ratio	0.007	-	-	-	0.012	
HCM Control Delay (s)	7.5	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0	-	-	-	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	0	60	0	1	97	7	12	1	1	0	0	22
Future Vol, veh/h	0	60	0	1	97	7	12	1	1	0	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	65	0	1	105	8	13	1	1	0	0	24
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	113	0	0	65	0	0	188	180	65	177	176	109
Stage 1	-	-	-	-	-	-	65	65	-	111	111	-
Stage 2	-	-	-	-	-	-	123	115	-	66	65	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1476	-	-	1537	-	-	772	714	999	785	717	945
Stage 1	-	-	-	-	-	-	946	841	-	894	804	-
Stage 2	-	-	-	-	-	-	881	800	-	945	841	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1476	-	-	1537	-	-	752	713	999	783	716	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	752	713	-	783	716	-
Stage 1	-	-	-	-	-	-	946	841	-	894	803	-
Stage 2	-	-	-	-	-	-	858	799	-	943	841	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			9.8			8.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	762	1476	-	-	1537	-	-	945				
HCM Lane V/C Ratio	0.02	-	-	-	0.001	-	-	0.025				
HCM Control Delay (s)	9.8	0	-	-	7.3	0	-	8.9				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	60	109	22	0	0
Future Vol, veh/h	7	60	109	22	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	65	118	24	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	142	0	-	0	211	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	81	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1441	-	-	-	777	920
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	942	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1441	-	-	-	772	920
Mov Cap-2 Maneuver	-	-	-	-	772	-
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	942	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1441	-	-	-	-	
HCM Lane V/C Ratio	0.005	-	-	-	-	
HCM Control Delay (s)	7.5	0	-	-	0	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	22	0	105	56	236	0	0	216	54
Future Vol, veh/h	0	0	0	22	0	105	56	236	0	0	216	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	24	0	114	61	257	0	0	235	59
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				644	673	257	294	0	-	-	-	0
Stage 1				379	379	-	-	-	-	-	-	-
Stage 2				265	294	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				437	377	782	1268	-	0	0	-	-
Stage 1				692	615	-	-	-	0	0	-	-
Stage 2				779	670	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				413	0	782	1268	-	-	-	-	-
Mov Cap-2 Maneuver				413	0	-	-	-	-	-	-	-
Stage 1				653	0	-	-	-	-	-	-	-
Stage 2				779	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				11.1		1.5		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1268	-	413	782	-	-						
HCM Lane V/C Ratio	0.048	-	0.058	0.146	-	-						
HCM Control Delay (s)	8	0	14.3	10.4	-	-						
HCM Lane LOS	A	A	B	B	-	-						
HCM 95th %tile O(veh)	0.2	-	0.2	0.5	-	-						

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↖			↕	
Traffic Vol, veh/h	95	0	6	0	0	0	0	206	188	188	50	0
Future Vol, veh/h	95	0	6	0	0	0	0	206	188	188	50	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	103	0	7	0	0	0	0	224	204	204	54	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	788	890	54				-	0	0	428	0	0
Stage 1	462	462	-				-	-	-	-	-	-
Stage 2	326	428	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	360	282	1013				0	-	-	1131	-	0
Stage 1	634	565	-				0	-	-	-	-	0
Stage 2	731	585	-				0	-	-	-	-	0
Platoon blocked, %							-	-	-			
Mov Cap-1 Maneuver	293	0	1013				-	-	-	1131	-	-
Mov Cap-2 Maneuver	293	0	-				-	-	-	-	-	-
Stage 1	516	0	-				-	-	-	-	-	-
Stage 2	731	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	22.9						0		7			
HCM LOS	C											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	293	1013	1131	-						
HCM Lane V/C Ratio	-	-	0.352	0.006	0.181	-						
HCM Control Delay (s)	-	-	23.8	8.6	8.9	0						
HCM Lane LOS	-	-	C	A	A	A						
HCM 95th %tile O(veh)	-	-	1.5	0	0.7	-						

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	227	90	1	0	8	159	5	5	1	57	1	9
Future Vol, veh/h	227	90	1	0	8	159	5	5	1	57	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	247	98	1	0	9	173	5	5	1	62	1	10
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	182	0	0	99	0	0	694	775	99	692	689	96
Stage 1	-	-	-	-	-	-	593	593	-	96	96	-
Stage 2	-	-	-	-	-	-	101	182	-	596	593	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1393	-	-	1494	-	-	357	329	957	358	369	960
Stage 1	-	-	-	-	-	-	492	493	-	911	815	-
Stage 2	-	-	-	-	-	-	905	749	-	490	493	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1393	-	-	1494	-	-	301	267	957	301	300	960
Mov Cap-2 Maneuver	-	-	-	-	-	-	301	267	-	301	300	-
Stage 1	-	-	-	-	-	-	400	400	-	740	815	-
Stage 2	-	-	-	-	-	-	895	749	-	392	400	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.8			0			17.4			18.9		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	302	1393	-	-	1494	-	-	332				
HCM Lane V/C Ratio	0.04	0.177	-	-	-	-	-	0.219				
HCM Control Delay (s)	17.4	8.1	0	-	0	-	-	18.9				
HCM Lane LOS	C	A	A	-	A	-	-	C				
HCM 95th %tile O(veh)	0.1	0.6	-	-	0	-	-	0.8				

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	134	0	2	2	0	0	0	43	1	0	0
Future Vol, veh/h	0	134	0	2	2	0	0	0	43	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	146	0	2	2	0	0	0	47	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	146	0	0	152	152	146	176	152	2
Stage 1	-	-	-	-	-	-	146	146	-	6	6	-
Stage 2	-	-	-	-	-	-	6	6	-	170	146	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1620	-	-	1436	-	-	815	740	901	786	740	1082
Stage 1	-	-	-	-	-	-	857	776	-	1016	891	-
Stage 2	-	-	-	-	-	-	1016	891	-	832	776	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1436	-	-	814	739	901	744	739	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	814	739	-	744	739	-
Stage 1	-	-	-	-	-	-	857	776	-	1016	890	-
Stage 2	-	-	-	-	-	-	1015	890	-	789	776	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.8			9.2			9.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	901	1620	-	-	1436	-	-	744				
HCM Lane V/C Ratio	0.052	-	-	-	0.002	-	-	0.001				
HCM Control Delay (s)	9.2	0	-	-	7.5	0	-	9.8				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0.2	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	8.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	130	3	45	12	4	20	0	27	0	3	11	2
Future Vol, veh/h	130	3	45	12	4	20	0	27	0	3	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	141	3	49	13	4	22	0	29	0	3	12	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	61	48	13	74	49	29	14	0	0	29	0	0
Stage 1	19	19	-	29	29	-	-	-	-	-	-	-
Stage 2	42	29	-	45	20	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	934	844	1067	916	843	1046	1604	-	-	1584	-	-
Stage 1	1000	880	-	988	871	-	-	-	-	-	-	-
Stage 2	972	871	-	969	879	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	910	842	1067	870	841	1046	1604	-	-	1584	-	-
Mov Cap-2 Maneuver	910	842	-	870	841	-	-	-	-	-	-	-
Stage 1	1000	878	-	988	871	-	-	-	-	-	-	-
Stage 2	947	871	-	919	877	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.8		8.9			0			1.4			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1604	-	-	944	956	1584	-	-				
HCM Lane V/C Ratio	-	-	-	0.205	0.041	0.002	-	-				
HCM Control Delay (s)	0	-	-	9.8	8.9	7.3	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.8	0.1	0	-	-				

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	60	56	12	62	9
Future Vol, veh/h	0	60	56	12	62	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	65	61	13	67	10

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	74	0	0 133 68
Stage 1	-	-	- 68 -
Stage 2	-	-	- 65 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1526	-	- 861 995
Stage 1	-	-	- 955 -
Stage 2	-	-	- 958 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1526	-	- 861 995
Mov Cap-2 Maneuver	-	-	- 861 -
Stage 1	-	-	- 955 -
Stage 2	-	-	- 958 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1526	-	-	-	876
HCM Lane V/C Ratio	-	-	-	-	0.088
HCM Control Delay (s)	0	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

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	22	123	0	0	60	0	0	0	1	7	0	1
Future Vol, veh/h	22	123	0	0	60	0	0	0	1	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	134	0	0	65	0	0	0	1	8	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	134	0	0	248	247	134	248	247	65
Stage 1	-	-	-	-	-	-	182	182	-	65	65	-
Stage 2	-	-	-	-	-	-	66	65	-	183	182	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1537	-	-	1451	-	-	706	655	915	706	655	999
Stage 1	-	-	-	-	-	-	820	749	-	946	841	-
Stage 2	-	-	-	-	-	-	945	841	-	819	749	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1537	-	-	1451	-	-	696	644	915	696	644	999
Mov Cap-2 Maneuver	-	-	-	-	-	-	696	644	-	696	644	-
Stage 1	-	-	-	-	-	-	806	736	-	930	841	-
Stage 2	-	-	-	-	-	-	944	841	-	804	736	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			0			8.9			10		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	915	1537	-	-	1451	-	-	723				
HCM Lane V/C Ratio	0.001	0.016	-	-	-	-	-	0.012				
HCM Control Delay (s)	8.9	7.4	0	-	0	-	-	10				
HCM Lane LOS	A	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	123	61	0	22	7
Future Vol, veh/h	0	123	61	0	22	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, %	2	2	2	2	2	2
Mvmt Flow	0	134	66	0	24	8
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	66	0	-	0	200	66
Stage 1	-	-	-	-	66	-
Stage 2	-	-	-	-	134	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1536	-	-	-	789	998
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1536	-	-	-	789	998
Mov Cap-2 Maneuver	-	-	-	-	789	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	892	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.5		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1536	-	-	-	831	
HCM Lane V/C Ratio	-	-	-	-	0.038	
HCM Control Delay (s)	0	-	-	-	9.5	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Appendix O

Growth Factor Support Data

CALIFORNIA COUNTY-LEVEL ECONOMIC FORECAST 2015 - 2040

September 2015

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IMPERIAL COUNTY ECONOMIC FORECAST

Imperial County is located at the extreme southeastern edge of California, adjacent to San Diego County. It is the home of the Salton Sea, the largest lake in the state. Imperial County has a population of 181,100 people and a total of 64,500 wage and salary jobs. The income per capita is \$32,219 and the average salary per worker is \$45,715, both of which represent the lowest levels among all Southern California counties.

Imperial County's economy is heavily agricultural. With approximately 10,700 farm workers, the county is responsible for more than \$2 billion of agricultural output per year. Its most prevalent commodities are cattle, alfalfa, broccoli, and lettuce. The public sector also plays a large role in the region's economy, and with 17,900 workers, it is the county's largest employment sector. A substantial number of the government jobs in Imperial County are related to the two state correctional facilities, which employ a combined total of 2,300 staff and house 6,700 inmates.

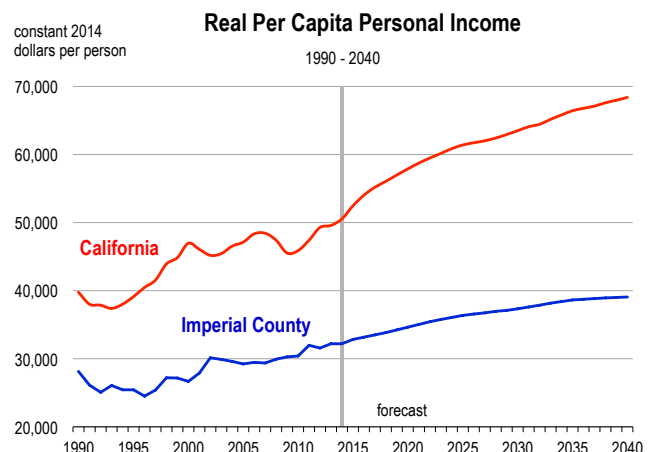
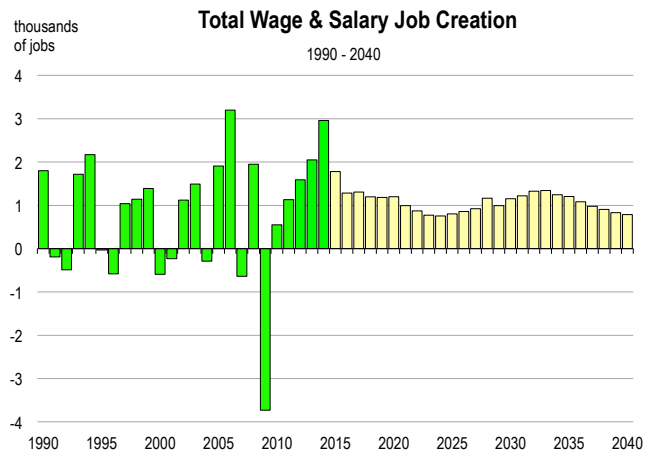
Across Southern California, employment increased by 2.6 percent in 2014. Imperial County gained 3,000 wage and salary jobs, representing a growth rate of 4.8 percent. Farm employment increased by 6.6 percent, while non-farm employment grew by 4.5 percent. Although the unemployment rate remains very high, it improved substantially, falling from 24.9 percent in 2013 to 23.6 percent in 2014.

In 2014, the largest employment gains were observed in wholesale and retail trade (+1,200 jobs), education and healthcare (+1,100 jobs), agriculture (+660 jobs), and construction (+340 jobs). The largest losses were observed in manufacturing (-800 jobs).

Between 2009 and 2014, the Imperial County population grew at an average rate of 0.9 percent per year. This growth was entirely due to the natural increase (new births), as overall net migration was negative.

FORECAST HIGHLIGHTS

- Total employment is expected to increase by 2.8 percent in 2015. From 2015 to 2020, the growth rate will average 1.8 percent per year. Over the same period, agricultural employment will be relatively flat.
- Average salaries are currently well below the California state average, and will remain so over the forecast horizon. Adjusted for inflation, average salaries in Imperial County will rise by an average of 0.9 percent per year from 2015 to 2020.
- The sectors that will create the most jobs between 2015 and 2020 are education and healthcare, government, and wholesale and retail trade. Together, these industries will account for 85 percent of net job creation in the county.



- The population will continue to grow faster than the state average. Annual growth in the 2015 to 2020 period will average 1.5 percent.
- Net migration is expected to turn positive in 2016. Over the 2015-2020 period, an average of 530 net migrants will enter the county each year.
- Real income per capita, adjusted for inflation, is projected to increase by 1.9 percent in 2015. Between 2015 and 2020, growth will average 1.1 percent per year.
- Total taxable sales, adjusted for inflation, are expected to increase by an average of 1.7 percent per year between 2015 and 2020.
- Industrial production is expected to increase by 4.9 percent in 2015. From 2015 to 2020, the growth rate of industrial production is expected to average 4.0 percent per year.
- Farm production is forecasted to increase by 0.3 percent per year between 2015 and 2020. The principal farm products in the county are cattle and leaf lettuce.

County	2010 Census Population	2016 Census Estimate Population
Imperial County	174,528	180,883
10 Year Overall Percent Growth:		3.6%
Average Percent Growth/Year:		0.6%

Source: Population data from U.S. Census Bureau (<http://www.census.gov>).

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QuickFacts
Imperial County, California

What's New & FAQs >
Tell us what you think >

QuickFacts provides statistics for all states and counties, and for cities and towns with a *population of 5,000 or more*.

Table

Imperial County, California

PEOPLE

Population

i
Population estimates, July 1, 2016, (V2016)
180,883

i
Population estimates base, April 1, 2010, (V2016)
174,528

i
Population, percent change - April 1, 2010 (estimates base) to July 1, 2016, (V2016)
3.6%

i
Population, Census, April 1, 2010
174,528

Appendix P

Year 2019 Intersection LOS Calculations

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	41	0	86	12	102	0	0	131	69
Future Vol, veh/h	0	0	0	41	0	86	12	102	0	0	131	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	45	0	93	13	111	0	0	142	75
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				317	354	111	217	0	-	-	-	0
Stage 1				137	137	-	-	-	-	-	-	-
Stage 2				180	217	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				676	571	942	1353	-	0	0	-	-
Stage 1				890	783	-	-	-	0	0	-	-
Stage 2				851	723	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				669	0	942	1353	-	-	-	-	-
Mov Cap-2 Maneuver				669	0	-	-	-	-	-	-	-
Stage 1				881	0	-	-	-	-	-	-	-
Stage 2				851	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				9.7		0.8		0				
HCM LOS				A								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1353	-	669	942	-	-						
HCM Lane V/C Ratio	0.01	-	0.067	0.099	-	-						
HCM Control Delay (s)	7.7	0	10.8	9.2	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile Q(veh)	0	-	0.2	0.3	-	-						

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰			↰	
Traffic Vol, veh/h	59	1	9	0	0	0	0	58	21	78	89	0
Future Vol, veh/h	59	1	9	0	0	0	0	58	21	78	89	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	1	10	0	0	0	0	63	23	85	97	0
Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	342	353	97				-	0	0	86	0	0
Stage 1	267	267	-				-	-	-	-	-	-
Stage 2	75	86	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	654	572	959				0	-	-	1510	-	0
Stage 1	778	688	-				0	-	-	-	-	0
Stage 2	948	824	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	615	0	959				-	-	-	1510	-	-
Mov Cap-2 Maneuver	615	0	-				-	-	-	-	-	-
Stage 1	732	0	-				-	-	-	-	-	-
Stage 2	948	0	-				-	-	-	-	-	-
Approach	EB						NB			SB		
HCM Control Delay, s	11.1						0			3.5		
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	615	959	1510	-						
HCM Lane V/C Ratio	-	-	0.106	0.01	0.056	-						
HCM Control Delay (s)	-	-	11.5	8.8	7.5	0						
HCM Lane LOS	-	-	B	A	A	A						
HCM 95th %tile O(veh)	-	-	0.4	0	0.2	-						

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	13	2	1	16	34	4	3	1	80	7	12
Future Vol, veh/h	15	13	2	1	16	34	4	3	1	80	7	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	14	2	1	17	37	4	3	1	87	8	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	16	0	0	95	103	15	87	86	36
Stage 1	-	-	-	-	-	-	47	47	-	38	38	-
Stage 2	-	-	-	-	-	-	48	56	-	49	48	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1551	-	-	1602	-	-	888	787	1065	899	804	1037
Stage 1	-	-	-	-	-	-	967	856	-	977	863	-
Stage 2	-	-	-	-	-	-	965	848	-	964	855	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1551	-	-	1602	-	-	863	778	1065	887	795	1037
Mov Cap-2 Maneuver	-	-	-	-	-	-	863	778	-	887	795	-
Stage 1	-	-	-	-	-	-	957	847	-	967	862	-
Stage 2	-	-	-	-	-	-	944	847	-	950	846	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.7			0.1			9.3			9.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	848	1551	-	-	1602	-	-	895				
HCM Lane V/C Ratio	0.01	0.011	-	-	0.001	-	-	0.12				
HCM Control Delay (s)	9.3	7.3	0	-	7.2	0	-	9.6				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4				

Intersection

Int Delay, s/veh 4.3

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

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	2	0	0	3	3	2	4	3	1
Stage 1	-	-	-	-	-	-	2	2	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	3	2	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1620	-	-	1019	893	1082	1017	893	1084
Stage 1	-	-	-	-	-	-	1021	894	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1020	894	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1622	-	-	1620	-	-	1019	893	1082	1015	893	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1019	893	-	1015	893	-
Stage 1	-	-	-	-	-	-	1021	894	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1018	894	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	992	1622	-	-	1620	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-	-	-	-
HCM Control Delay (s)	8.6	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	0	1	0	2	0	11	0	4	13	2
Future Vol, veh/h	3	1	0	1	0	2	0	11	0	4	13	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	0	1	0	2	0	12	0	4	14	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	36	35	15	36	36	12	16	0	0	12	0	0
Stage 1	23	23	-	12	12	-	-	-	-	-	-	-
Stage 2	13	12	-	24	24	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	970	857	1065	970	856	1069	1602	-	-	1607	-	-
Stage 1	995	876	-	1009	886	-	-	-	-	-	-	-
Stage 2	1007	886	-	994	875	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	966	854	1065	967	853	1069	1602	-	-	1607	-	-
Mov Cap-2 Maneuver	966	854	-	967	853	-	-	-	-	-	-	-
Stage 1	995	873	-	1009	886	-	-	-	-	-	-	-
Stage 2	1005	886	-	990	872	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.9		8.5			0			1.5			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1602	-	-	935 1033	1607	-	-					
HCM Lane V/C Ratio	-	-	-	0.005 0.003	0.003	-	-					
HCM Control Delay (s)	0	-	-	8.9 8.5	7.2	0	-					
HCM Lane LOS	A	-	-	A A	A	A	-					
HCM 95th %tile Q(veh)	0	-	-	0 0	0	-	-					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	34	45	4	2	5
Future Vol, veh/h	3	34	45	4	2	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, %	2	2	2	2	2	2
Mvmt Flow	3	37	49	4	2	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	53	0	-	0	94	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	43	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1553	-	-	-	906	1017
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1553	-	-	-	904	1017
Mov Cap-2 Maneuver	-	-	-	-	904	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	979	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.6	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1553	-	-	-	982	
HCM Lane V/C Ratio	0.002	-	-	-	0.008	
HCM Control Delay (s)	7.3	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	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	0	36	0	1	38	0	12	1	1	0	0	0
Future Vol, veh/h	0	36	0	1	38	0	12	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	39	0	1	41	0	13	1	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	41	0	0	39	0	0	82	82	39	83	82	41
Stage 1	-	-	-	-	-	-	39	39	-	43	43	-
Stage 2	-	-	-	-	-	-	43	43	-	40	39	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1571	-	-	905	808	1033	904	808	1030
Stage 1	-	-	-	-	-	-	976	862	-	971	859	-
Stage 2	-	-	-	-	-	-	971	859	-	975	862	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1568	-	-	1571	-	-	904	807	1033	901	807	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	904	807	-	901	807	-
Stage 1	-	-	-	-	-	-	976	862	-	971	858	-
Stage 2	-	-	-	-	-	-	970	858	-	973	862	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			9.1			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	904	1568	-	-	1571	-	-	-				
HCM Lane V/C Ratio	0.017	-	-	-	0.001	-	-	-				
HCM Control Delay (s)	9.1	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	36	51	0	0	0
Future Vol, veh/h	0	36	51	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	39	55	0	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	55	0	-	0	94	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1550	-	-	-	906	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	983	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1550	-	-	-	906	1012
Mov Cap-2 Maneuver	-	-	-	-	906	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	983	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1550	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↕		↕			↕	
Traffic Vol, veh/h	0	0	0	17	0	74	8	130	0	0	200	56
Future Vol, veh/h	0	0	0	17	0	74	8	130	0	0	200	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	18	0	80	9	141	0	0	217	61

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	407	437	141
Stage 1	159	159	-
Stage 2	248	278	-
Critical Hdwy	6.42	6.52	6.22
Critical Hdwy Stg 1	5.42	5.52	-
Critical Hdwy Stg 2	5.42	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	600	513	907
Stage 1	870	766	-
Stage 2	793	680	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	595	0	907
Mov Cap-2 Maneuver	595	0	-
Stage 1	863	0	-
Stage 2	793	0	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBTWBLn1WBLn2	SBT	SBR
Capacity (veh/h)	1285	-	595	907
HCM Lane V/C Ratio	0.007	-	0.031	0.089
HCM Control Delay (s)	7.8	0	11.2	9.4
HCM Lane LOS	A	A	B	A
HCM 95th %tile Q(veh)	0	-	0.1	0.3

Intersection													
Int Delay, s/veh	6.9												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Vol, veh/h	87	0	4	0	0	0	0	49	22	174	44	0	
Future Vol, veh/h	87	0	4	0	0	0	0	49	22	174	44	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	95	0	4	0	0	0	0	53	24	189	48	0	
Major/Minor	Minor2			Major1				Major2					
Conflicting Flow All	491	503	48					-	0	0	77	0	0
Stage 1	426	426	-					-	-	-	-	-	-
Stage 2	65	77	-					-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22					-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-					-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-					-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318					-	-	-	2.218	-	-
Pot Cap-1 Maneuver	537	471	1021					0	-	-	1522	-	0
Stage 1	659	586	-					0	-	-	-	-	0
Stage 2	958	831	-					0	-	-	-	-	0
Platoon blocked, %								-	-	-			
Mov Cap-1 Maneuver	468	0	1021					-	-	-	1522	-	-
Mov Cap-2 Maneuver	468	0	-					-	-	-	-	-	-
Stage 1	575	0	-					-	-	-	-	-	-
Stage 2	958	0	-					-	-	-	-	-	-
Approach	EB			NB				SB					
HCM Control Delay, s	14.3			0				6.1					
HCM LOS	B												
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT							
Capacity (veh/h)	-	-	468	1021	1522	-							
HCM Lane V/C Ratio	-	-	0.202	0.004	0.124	-							
HCM Control Delay (s)	-	-	14.6	8.5	7.7	0							
HCM Lane LOS	-	-	B	A	A	A							
HCM 95th %tile Q(veh)	-	-	0.7	0	0.4	-							

Intersection

Int Delay, s/veh 5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	24	30	1	0	7	38	5	5	1	53	1	4
Future Vol, veh/h	24	30	1	0	7	38	5	5	1	53	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	33	1	0	8	41	5	5	1	58	1	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	34	0	0	117	135	34	118	115	29
Stage 1	-	-	-	-	-	-	86	86	-	29	29	-
Stage 2	-	-	-	-	-	-	31	49	-	89	86	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1558	-	-	1578	-	-	859	756	1039	858	775	1046
Stage 1	-	-	-	-	-	-	922	824	-	988	871	-
Stage 2	-	-	-	-	-	-	986	854	-	918	824	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1558	-	-	1578	-	-	844	743	1039	842	762	1046
Mov Cap-2 Maneuver	-	-	-	-	-	-	844	743	-	842	762	-
Stage 1	-	-	-	-	-	-	906	810	-	971	871	-
Stage 2	-	-	-	-	-	-	981	854	-	895	810	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0	9.5	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	808	1558	-	-	1578	-	-	852
HCM Lane V/C Ratio	0.015	0.017	-	-	-	-	-	0.074
HCM Control Delay (s)	9.5	7.4	0	-	0	-	-	9.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.2

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	0	1	1	0	0	0	0	1	0	0
Future Vol, veh/h	0	3	0	1	1	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	0	1	1	0	0	0	0	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	3	0	0	6	6	3	6	6	1
Stage 1	-	-	-	-	-	-	3	3	-	3	3	-
Stage 2	-	-	-	-	-	-	3	3	-	3	3	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1619	-	-	1014	889	1081	1014	889	1084
Stage 1	-	-	-	-	-	-	1020	893	-	1020	893	-
Stage 2	-	-	-	-	-	-	1020	893	-	1020	893	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1619	-	-	1013	888	1081	1013	888	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1013	888	-	1013	888	-
Stage 1	-	-	-	-	-	-	1020	893	-	1020	892	-
Stage 2	-	-	-	-	-	-	1019	892	-	1020	893	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.6			0			8.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1622	-	-	1619	-	-	1013				
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	0.001				
HCM Control Delay (s)	0	0	-	-	7.2	0	-	8.6				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	1	2	2	0	0	7	0	3	10	0
Future Vol, veh/h	0	3	1	2	2	0	0	7	0	3	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	1	2	2	0	0	8	0	3	11	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	26	25	11	27	25	8	11	0	0	8	0	0
Stage 1	17	17	-	8	8	-	-	-	-	-	-	-
Stage 2	9	8	-	19	17	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	984	868	1070	983	868	1074	1608	-	-	1612	-	-
Stage 1	1002	881	-	1013	889	-	-	-	-	-	-	-
Stage 2	1012	889	-	1000	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	981	866	1070	978	866	1074	1608	-	-	1612	-	-
Mov Cap-2 Maneuver	981	866	-	978	866	-	-	-	-	-	-	-
Stage 1	1002	879	-	1013	889	-	-	-	-	-	-	-
Stage 2	1010	889	-	993	879	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9		8.9		0		1.7					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1608	-	-	909	919	1612	-	-				
HCM Lane V/C Ratio	-	-	-	0.005	0.005	0.002	-	-				
HCM Control Delay (s)	0	-	-	9	8.9	7.2	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	57	28	10	6	2
Future Vol, veh/h	0	57	28	10	6	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	62	30	11	7	2
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	41	0	-	0	98	36
Stage 1	-	-	-	-	36	-
Stage 2	-	-	-	-	62	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1568	-	-	-	901	1037
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	961	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1568	-	-	-	901	1037
Mov Cap-2 Maneuver	-	-	-	-	901	-
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	961	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1568	-	-	-	932	
HCM Lane V/C Ratio	-	-	-	-	0.009	
HCM Control Delay (s)	0	-	-	-	8.9	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	64	0	0	37	0	0	0	1	0	0	1
Future Vol, veh/h	0	64	0	0	37	0	0	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	70	0	0	40	0	0	0	1	0	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	40	0	0	70	0	0	111	110	70	111	110	40
Stage 1	-	-	-	-	-	-	70	70	-	40	40	-
Stage 2	-	-	-	-	-	-	41	40	-	71	70	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1570	-	-	1531	-	-	867	780	993	867	780	1031
Stage 1	-	-	-	-	-	-	940	837	-	975	862	-
Stage 2	-	-	-	-	-	-	974	862	-	939	837	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1570	-	-	1531	-	-	866	780	993	866	780	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	866	780	-	866	780	-
Stage 1	-	-	-	-	-	-	940	837	-	975	862	-
Stage 2	-	-	-	-	-	-	973	862	-	938	837	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			8.6			8.5		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	993	1570	-	-	1531	-	-	1031				
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	0.001				
HCM Control Delay (s)	8.6	0	-	-	0	-	-	8.5				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	64	38	0	0	0
Future Vol, veh/h	0	64	38	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	70	41	0	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	41	0	-	0	111	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	70	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1568	-	-	-	886	1030
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	953	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1568	-	-	-	886	1030
Mov Cap-2 Maneuver	-	-	-	-	886	-
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	953	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1568	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Appendix Q

Year 2019 + Project Construction Intersection LOS Calculations

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	77	0	86	12	102	0	0	153	69
Future Vol, veh/h	0	0	0	77	0	86	12	102	0	0	153	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	84	0	93	13	111	0	0	166	75
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				341	378	111	241	0	-	-	-	0
Stage 1				137	137	-	-	-	-	-	-	-
Stage 2				204	241	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				655	554	942	1326	-	0	0	-	-
Stage 1				890	783	-	-	-	0	0	-	-
Stage 2				830	706	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				648	0	942	1326	-	-	-	-	-
Mov Cap-2 Maneuver				648	0	-	-	-	-	-	-	-
Stage 1				881	0	-	-	-	-	-	-	-
Stage 2				830	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10.2		0.8		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1326	-	648	942	-	-						
HCM Lane V/C Ratio	0.01	-	0.129	0.099	-	-						
HCM Control Delay (s)	7.7	0	11.4	9.2	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile O(veh)	0	-	0.4	0.3	-	-						

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰			↰	
Traffic Vol, veh/h	59	1	9	0	0	0	0	58	22	78	147	0
Future Vol, veh/h	59	1	9	0	0	0	0	58	22	78	147	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	1	10	0	0	0	0	63	24	85	160	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	405	417	160				-	0	0	87	0	0
Stage 1	330	330	-				-	-	-	-	-	-
Stage 2	75	87	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	602	527	885				0	-	-	1509	-	0
Stage 1	728	646	-				0	-	-	-	-	0
Stage 2	948	823	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	565	0	885				-	-	-	1509	-	-
Mov Cap-2 Maneuver	565	0	-				-	-	-	-	-	-
Stage 1	683	0	-				-	-	-	-	-	-
Stage 2	948	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	11.8						0		2.6			
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	565	885	1509	-						
HCM Lane V/C Ratio	-	-	0.115	0.011	0.056	-						
HCM Control Delay (s)	-	-	12.2	9.1	7.5	0						
HCM Lane LOS	-	-	B	A	A	A						
HCM 95th %tile O(veh)	-	-	0.4	0	0.2	-						

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	14	2	1	45	34	4	3	1	80	7	70
Future Vol, veh/h	16	14	2	1	45	34	4	3	1	80	7	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	15	2	1	49	37	4	3	1	87	8	76
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	86	0	0	17	0	0	162	138	16	122	121	68
Stage 1	-	-	-	-	-	-	50	50	-	70	70	-
Stage 2	-	-	-	-	-	-	112	88	-	52	51	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1510	-	-	1600	-	-	803	753	1063	853	769	995
Stage 1	-	-	-	-	-	-	963	853	-	940	837	-
Stage 2	-	-	-	-	-	-	893	822	-	961	852	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1510	-	-	1600	-	-	729	744	1063	842	760	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	729	744	-	842	760	-
Stage 1	-	-	-	-	-	-	952	844	-	930	836	-
Stage 2	-	-	-	-	-	-	816	821	-	946	843	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.7			0.1			9.8			9.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	765	1510	-	-	1600	-	-	899				
HCM Lane V/C Ratio	0.011	0.012	-	-	0.001	-	-	0.19				
HCM Control Delay (s)	9.8	7.4	0	-	7.3	0	-	9.9				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0.7				

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	1	43	44	0	1	1	2	0	0	0
Future Vol, veh/h	0	2	1	43	44	0	1	1	2	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	1	47	48	0	1	1	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	3	0	0	145	145	3	146	145	48
Stage 1	-	-	-	-	-	-	3	3	-	142	142	-
Stage 2	-	-	-	-	-	-	142	142	-	4	3	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1559	-	-	1619	-	-	824	746	1081	823	746	1021
Stage 1	-	-	-	-	-	-	1020	893	-	861	779	-
Stage 2	-	-	-	-	-	-	861	779	-	1018	893	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1559	-	-	1619	-	-	805	724	1081	802	724	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	805	724	-	802	724	-
Stage 1	-	-	-	-	-	-	1020	893	-	861	756	-
Stage 2	-	-	-	-	-	-	835	756	-	1015	893	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.6	9	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	894	1559	-	-	1619	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	0.029	-	-	-
HCM Control Delay (s)	9	0	-	-	7.3	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	-

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	0	1	0	2	0	11	0	4	13	88
Future Vol, veh/h	5	1	0	1	0	2	0	11	0	4	13	88
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	1	0	1	0	2	0	12	0	4	14	96
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	83	82	62	83	130	12	110	0	0	12	0	0
Stage 1	70	70	-	12	12	-	-	-	-	-	-	-
Stage 2	13	12	-	71	118	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	904	808	1003	904	761	1069	1480	-	-	1607	-	-
Stage 1	940	837	-	1009	886	-	-	-	-	-	-	-
Stage 2	1007	886	-	939	798	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	900	806	1003	901	759	1069	1480	-	-	1607	-	-
Mov Cap-2 Maneuver	900	806	-	901	759	-	-	-	-	-	-	-
Stage 1	940	834	-	1009	886	-	-	-	-	-	-	-
Stage 2	1005	886	-	935	796	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		8.6			0			0.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1480	-	-	883	1006	1607	-	-				
HCM Lane V/C Ratio	-	-	-	0.007	0.003	0.003	-	-				
HCM Control Delay (s)	0	-	-	9.1	8.6	7.2	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0	0	0	-	-				

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	41	45	33	3	5
Future Vol, veh/h	10	41	45	33	3	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, %	2	2	2	2	2	2
Mvmt Flow	11	45	49	36	3	5

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	85	0	0 134 67
Stage 1	-	-	- 67 -
Stage 2	-	-	- 67 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1512	-	- 860 997
Stage 1	-	-	- 956 -
Stage 2	-	-	- 956 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1512	-	- 854 997
Mov Cap-2 Maneuver	-	-	- 854 -
Stage 1	-	-	- 949 -
Stage 2	-	-	- 956 -

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1512	-	-	-	938
HCM Lane V/C Ratio	0.007	-	-	-	0.009
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	37	0	1	67	7	12	1	1	0	0	22
Future Vol, veh/h	0	37	0	1	67	7	12	1	1	0	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	40	0	1	73	8	13	1	1	0	0	24
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	81	0	0	40	0	0	131	123	40	120	119	77
Stage 1	-	-	-	-	-	-	40	40	-	79	79	-
Stage 2	-	-	-	-	-	-	91	83	-	41	40	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1517	-	-	1570	-	-	841	767	1031	855	771	984
Stage 1	-	-	-	-	-	-	975	862	-	930	829	-
Stage 2	-	-	-	-	-	-	916	826	-	974	862	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1517	-	-	1570	-	-	820	766	1031	852	770	984
Mov Cap-2 Maneuver	-	-	-	-	-	-	820	766	-	852	770	-
Stage 1	-	-	-	-	-	-	975	862	-	930	828	-
Stage 2	-	-	-	-	-	-	893	825	-	972	862	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			9.4			8.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	828	1517	-	-	1570	-	-	984				
HCM Lane V/C Ratio	0.018	-	-	-	0.001	-	-	0.024				
HCM Control Delay (s)	9.4	0	-	-	7.3	0	-	8.8				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	37	80	22	0	0
Future Vol, veh/h	7	37	80	22	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	40	87	24	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	111	0	0 155 99
Stage 1	-	-	- 99 -
Stage 2	-	-	- 56 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1479	-	- 836 957
Stage 1	-	-	- 925 -
Stage 2	-	-	- 967 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1479	-	- 831 957
Mov Cap-2 Maneuver	-	-	- 831 -
Stage 1	-	-	- 919 -
Stage 2	-	-	- 967 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1479	-	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	7.4	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	18	0	74	8	152	0	0	200	56
Future Vol, veh/h	0	0	0	18	0	74	8	152	0	0	200	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	20	0	80	9	165	0	0	217	61
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				431	461	165	278	0	-	-	-	0
Stage 1				183	183	-	-	-	-	-	-	-
Stage 2				248	278	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				581	497	879	1285	-	0	0	-	-
Stage 1				848	748	-	-	-	0	0	-	-
Stage 2				793	680	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				576	0	879	1285	-	-	-	-	-
Mov Cap-2 Maneuver				576	0	-	-	-	-	-	-	-
Stage 1				841	0	-	-	-	-	-	-	-
Stage 2				793	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				9.9		0.4		0				
HCM LOS				A								
Minor Lane/Major Mvmt		NBL	NBTWBLn1WBLn2		SBT	SBR						
Capacity (veh/h)		1285	-	576	879	-	-					
HCM Lane V/C Ratio		0.007	-	0.034	0.092	-	-					
HCM Control Delay (s)		7.8	0	11.5	9.5	-	-					
HCM Lane LOS		A	A	B	A	-	-					
HCM 95th %tile O(veh)		0	-	0.1	0.3	-	-					

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰			↰	
Traffic Vol, veh/h	87	0	4	0	0	0	0	71	58	174	45	0
Future Vol, veh/h	87	0	4	0	0	0	0	71	58	174	45	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	0	4	0	0	0	0	77	63	189	49	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	536	567	49				-	0	0	140	0	0
Stage 1	427	427	-				-	-	-	-	-	-
Stage 2	109	140	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	505	433	1020				0	-	-	1443	-	0
Stage 1	658	585	-				0	-	-	-	-	0
Stage 2	916	781	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	437	0	1020				-	-	-	1443	-	-
Mov Cap-2 Maneuver	437	0	-				-	-	-	-	-	-
Stage 1	569	0	-				-	-	-	-	-	-
Stage 2	916	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	15.2						0		6.3			
HCM LOS	C											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	437	1020	1443	-						
HCM Lane V/C Ratio	-	-	0.216	0.004	0.131	-						
HCM Control Delay (s)	-	-	15.5	8.5	7.9	0						
HCM Lane LOS	-	-	C	A	A	A						
HCM 95th %tile O(veh)	-	-	0.8	0	0.5	-						

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	59	1	0	8	38	5	5	1	53	1	5
Future Vol, veh/h	82	59	1	0	8	38	5	5	1	53	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	64	1	0	9	41	5	5	1	58	1	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	50	0	0	65	0	0	276	293	65	276	273	30
Stage 1	-	-	-	-	-	-	243	243	-	30	30	-
Stage 2	-	-	-	-	-	-	33	50	-	246	243	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1557	-	-	1537	-	-	676	618	999	676	634	1044
Stage 1	-	-	-	-	-	-	761	705	-	987	870	-
Stage 2	-	-	-	-	-	-	983	853	-	758	705	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1557	-	-	1537	-	-	642	582	999	640	597	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	582	-	640	597	-
Stage 1	-	-	-	-	-	-	716	663	-	929	870	-
Stage 2	-	-	-	-	-	-	977	853	-	707	663	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.3			0			10.8			11		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	633	1557	-	-	1537	-	-	661				
HCM Lane V/C Ratio	0.019	0.057	-	-	-	-	-	0.097				
HCM Control Delay (s)	10.8	7.5	0	-	0	-	-	11				
HCM Lane LOS	B	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.3				

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	46	0	2	2	0	0	0	43	1	0	0
Future Vol, veh/h	0	46	0	2	2	0	0	0	43	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	50	0	2	2	0	0	0	47	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	50	0	0	56	56	50	80	56	2
Stage 1	-	-	-	-	-	-	50	50	-	6	6	-
Stage 2	-	-	-	-	-	-	6	6	-	74	50	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1620	-	-	1557	-	-	941	835	1018	908	835	1082
Stage 1	-	-	-	-	-	-	963	853	-	1016	891	-
Stage 2	-	-	-	-	-	-	1016	891	-	935	853	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1557	-	-	940	834	1018	865	834	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	940	834	-	865	834	-
Stage 1	-	-	-	-	-	-	963	853	-	1016	890	-
Stage 2	-	-	-	-	-	-	1015	890	-	892	853	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.7			8.7			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	1018	1620	-	-	1557	-	-	865				
HCM Lane V/C Ratio	0.046	-	-	-	0.001	-	-	0.001				
HCM Control Delay (s)	8.7	0	-	-	7.3	0	-	9.2				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	86	3	1	2	2	0	0	7	0	3	10	2
Future Vol, veh/h	86	3	1	2	2	0	0	7	0	3	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	93	3	1	2	2	0	0	8	0	3	11	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	27	26	12	28	27	8	13	0	0	8	0	0
Stage 1	18	18	-	8	8	-	-	-	-	-	-	-
Stage 2	9	8	-	20	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	983	867	1069	981	866	1074	1606	-	-	1612	-	-
Stage 1	1001	880	-	1013	889	-	-	-	-	-	-	-
Stage 2	1012	889	-	999	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	980	865	1069	976	864	1074	1606	-	-	1612	-	-
Mov Cap-2 Maneuver	980	865	-	976	864	-	-	-	-	-	-	-
Stage 1	1001	878	-	1013	889	-	-	-	-	-	-	-
Stage 2	1010	889	-	992	878	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		8.9			0			1.4			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1606	-	-	977	917	1612	-	-				
HCM Lane V/C Ratio	-	-	-	0.1	0.005	0.002	-	-				
HCM Control Delay (s)	0	-	-	9.1	8.9	7.2	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.3	0	0	-	-				

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	57	35	11	35	9
Future Vol, veh/h	0	57	35	11	35	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	62	38	12	38	10
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	50	0	-	0	106	44
Stage 1	-	-	-	-	44	-
Stage 2	-	-	-	-	62	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1557	-	-	-	892	1026
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	961	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1557	-	-	-	892	1026
Mov Cap-2 Maneuver	-	-	-	-	892	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	961	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.1		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1557	-	-	-	916	
HCM Lane V/C Ratio	-	-	-	-	0.052	
HCM Control Delay (s)	0	-	-	-	9.1	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

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	22	93	0	0	38	0	0	0	1	7	0	1
Future Vol, veh/h	22	93	0	0	38	0	0	0	1	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	101	0	0	41	0	0	0	1	8	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	41	0	0	101	0	0	191	190	101	191	190	41
Stage 1	-	-	-	-	-	-	149	149	-	41	41	-
Stage 2	-	-	-	-	-	-	42	41	-	150	149	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1491	-	-	769	705	954	769	705	1030
Stage 1	-	-	-	-	-	-	854	774	-	974	861	-
Stage 2	-	-	-	-	-	-	972	861	-	853	774	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1568	-	-	1491	-	-	759	694	954	759	694	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	759	694	-	759	694	-
Stage 1	-	-	-	-	-	-	840	762	-	958	861	-
Stage 2	-	-	-	-	-	-	971	861	-	838	762	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			0			8.8			9.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	954	1568	-	-	1491	-	-	785				
HCM Lane V/C Ratio	0.001	0.015	-	-	-	-	-	0.011				
HCM Control Delay (s)	8.8	7.3	0	-	0	-	-	9.6				
HCM Lane LOS	A	A	A	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0				

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	93	39	0	22	7
Future Vol, veh/h	0	93	39	0	22	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, %	2	2	2	2	2	2
Mvmt Flow	0	101	42	0	24	8
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	42	0	-	0	143	42
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	101	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1567	-	-	-	850	1029
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	923	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1567	-	-	-	850	1029
Mov Cap-2 Maneuver	-	-	-	-	850	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	923	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1567	-	-	-	887	
HCM Lane V/C Ratio	-	-	-	-	0.036	
HCM Control Delay (s)	0	-	-	-	9.2	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Appendix R

Year 2019 + Project Construction + Cumulative Intersection LOS Calculations

AM 2019 + Cumulative
1: Forrester Road & I-8 WB Ramp

HCM 2010 TWSC

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	172	0	96	12	114	0	0	251	80
Future Vol, veh/h	0	0	0	172	0	96	12	114	0	0	251	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	187	0	104	13	124	0	0	273	87
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				467	510	124	360	0	-	-	-	0
Stage 1				150	150	-	-	-	-	-	-	-
Stage 2				317	360	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				554	467	927	1199	-	0	0	-	-
Stage 1				878	773	-	-	-	0	0	-	-
Stage 2				738	626	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				547	0	927	1199	-	-	-	-	-
Mov Cap-2 Maneuver				547	0	-	-	-	-	-	-	-
Stage 1				867	0	-	-	-	-	-	-	-
Stage 2				738	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				13		0.8		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1199	-	547	927	-	-						
HCM Lane V/C Ratio	0.011	-	0.342	0.113	-	-						
HCM Control Delay (s)	8	0	15	9.4	-	-						
HCM Lane LOS	A	A	C	A	-	-						
HCM 95th %tile Q(veh)	0	-	1.5	0.4	-	-						

AM 2019 + Cumulative
2: Forrester Road & I-8 EB Ramp

HCM 2010 TWSC

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕			↕	
Traffic Vol, veh/h	59	1	57	0	0	0	0	59	24	109	289	0
Future Vol, veh/h	59	1	57	0	0	0	0	59	24	109	289	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	1	62	0	0	0	0	64	26	118	314	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	627	640	314				-	0	0	90	0	0
Stage 1	550	550	-				-	-	-	-	-	-
Stage 2	77	90	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	447	393	726				0	-	-	1505	-	0
Stage 1	578	516	-				0	-	-	-	-	0
Stage 2	946	820	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	405	0	726				-	-	-	1505	-	-
Mov Cap-2 Maneuver	405	0	-				-	-	-	-	-	-
Stage 1	523	0	-				-	-	-	-	-	-
Stage 2	946	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	13.1						0		2.1			
HCM LOS	B											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	EBLn2	SBL	SBT					
Capacity (veh/h)		-	-	405	726	1505	-					
HCM Lane V/C Ratio		-	-	0.161	0.085	0.079	-					
HCM Control Delay (s)		-	-	15.6	10.4	7.6	0					
HCM Lane LOS		-	-	C	B	A	A					
HCM 95th %tile O(veh)		-	-	0.6	0.3	0.3	-					

Intersection												
Int Delay, s/veh	9.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	13	2	1	48	36	4	3	1	202	7	158
Future Vol, veh/h	17	13	2	1	48	36	4	3	1	202	7	158
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	14	2	1	52	39	4	3	1	220	8	172
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	91	0	0	16	0	0	215	144	15	127	126	72
Stage 1	-	-	-	-	-	-	51	51	-	74	74	-
Stage 2	-	-	-	-	-	-	164	93	-	53	52	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1504	-	-	1602	-	-	742	747	1065	846	764	990
Stage 1	-	-	-	-	-	-	962	852	-	935	833	-
Stage 2	-	-	-	-	-	-	838	818	-	960	852	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1504	-	-	1602	-	-	603	737	1065	834	754	990
Mov Cap-2 Maneuver	-	-	-	-	-	-	603	737	-	834	754	-
Stage 1	-	-	-	-	-	-	950	842	-	924	832	-
Stage 2	-	-	-	-	-	-	686	817	-	944	842	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.9			0.1			10.3			12.2		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	687	1504	-	-	1602	-	-	893				
HCM Lane V/C Ratio	0.013	0.012	-	-	0.001	-	-	0.447				
HCM Control Delay (s)	10.3	7.4	0	-	7.2	0	-	12.2				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	2.3				

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1	1	0	89	0	1	1	1	0	0	0
Future Vol, veh/h	0	1	1	0	89	0	1	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	1	0	97	0	1	1	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	97	0	0	2	0	0	99	99	2	100	99	97
Stage 1	-	-	-	-	-	-	2	2	-	97	97	-
Stage 2	-	-	-	-	-	-	97	97	-	3	2	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1496	-	-	1620	-	-	883	791	1082	881	791	959
Stage 1	-	-	-	-	-	-	1021	894	-	910	815	-
Stage 2	-	-	-	-	-	-	910	815	-	1020	894	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1496	-	-	1620	-	-	883	791	1082	879	791	959
Mov Cap-2 Maneuver	-	-	-	-	-	-	883	791	-	879	791	-
Stage 1	-	-	-	-	-	-	1021	894	-	910	815	-
Stage 2	-	-	-	-	-	-	910	815	-	1018	894	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	903	1496	-	-	1620	-	-	-				
HCM Lane V/C Ratio	0.004	-	-	-	-	-	-	-				
HCM Control Delay (s)	9	0	-	-	0	-	-	0				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	-				

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	0	1	0	6	44	12	0	28	33	46
Future Vol, veh/h	3	3	0	1	0	6	44	12	0	28	33	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	0	1	0	7	48	13	0	30	36	50
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	234	230	61	232	255	13	86	0	0	13	0	0
Stage 1	121	121	-	109	109	-	-	-	-	-	-	-
Stage 2	113	109	-	123	146	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	721	670	1004	723	649	1067	1510	-	-	1606	-	-
Stage 1	883	796	-	896	805	-	-	-	-	-	-	-
Stage 2	892	805	-	881	776	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	689	636	1004	692	616	1067	1510	-	-	1606	-	-
Mov Cap-2 Maneuver	689	636	-	692	616	-	-	-	-	-	-	-
Stage 1	855	780	-	867	779	-	-	-	-	-	-	-
Stage 2	858	779	-	860	760	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.5		8.7		5.9		1.9					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1510	-	-	661	990	1606	-	-				
HCM Lane V/C Ratio	0.032	-	-	0.01	0.008	0.019	-	-				
HCM Control Delay (s)	7.5	0	-	10.5	8.7	7.3	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0	0	0.1	-	-				

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	56	49	31	4	5
Future Vol, veh/h	3	56	49	31	4	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, %	2	2	2	2	2	2
Mvmt Flow	3	61	53	34	4	5

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	87	0	0 137 70
Stage 1	-	-	- 70 -
Stage 2	-	-	- 67 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1509	-	- 856 993
Stage 1	-	-	- 953 -
Stage 2	-	-	- 956 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1509	-	- 854 993
Mov Cap-2 Maneuver	-	-	- 854 -
Stage 1	-	-	- 951 -
Stage 2	-	-	- 956 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1509	-	-	-	926
HCM Lane V/C Ratio	0.002	-	-	-	0.011
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	60	0	1	69	0	12	1	1	0	0	0
Future Vol, veh/h	0	60	0	1	69	0	12	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	65	0	1	75	0	13	1	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	75	0	0	65	0	0	142	142	65	143	142	75
Stage 1	-	-	-	-	-	-	65	65	-	77	77	-
Stage 2	-	-	-	-	-	-	77	77	-	66	65	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1524	-	-	1537	-	-	828	749	999	826	749	986
Stage 1	-	-	-	-	-	-	946	841	-	932	831	-
Stage 2	-	-	-	-	-	-	932	831	-	945	841	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1524	-	-	1537	-	-	827	748	999	824	748	986
Mov Cap-2 Maneuver	-	-	-	-	-	-	827	748	-	824	748	-
Stage 1	-	-	-	-	-	-	946	841	-	932	830	-
Stage 2	-	-	-	-	-	-	931	830	-	943	841	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			9.4			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	831	1524	-	-	1537	-	-	-				
HCM Lane V/C Ratio	0.018	-	-	-	0.001	-	-	-				
HCM Control Delay (s)	9.4	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	-				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	60	82	0	0	0
Future Vol, veh/h	0	60	82	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	65	89	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	89	0	-	0	154	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	65	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1506	-	-	-	838	969
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	958	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1506	-	-	-	838	969
Mov Cap-2 Maneuver	-	-	-	-	838	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	958	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1506	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile O(veh)	0	-	-	-	-	-

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	22	0	108	56	219	0	0	223	56
Future Vol, veh/h	0	0	0	22	0	108	56	219	0	0	223	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	24	0	117	61	238	0	0	242	61
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				633	663	238	303	0	-	-	-	0
Stage 1				360	360	-	-	-	-	-	-	-
Stage 2				273	303	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				444	382	801	1258	-	0	0	-	-
Stage 1				706	626	-	-	-	0	0	-	-
Stage 2				773	664	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				419	0	801	1258	-	-	-	-	-
Mov Cap-2 Maneuver				419	0	-	-	-	-	-	-	-
Stage 1				666	0	-	-	-	-	-	-	-
Stage 2				773	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10.9		1.6		0				
HCM LOS				B								
Minor Lane/Major Mvmt		NBL	NBT	WBLn1	WBLn2	SBT	SBR					
Capacity (veh/h)		1258	-	419	801	-	-					
HCM Lane V/C Ratio		0.048	-	0.057	0.147	-	-					
HCM Control Delay (s)		8	0	14.1	10.3	-	-					
HCM Lane LOS		A	A	B	B	-	-					
HCM 95th %tile O(veh)		0.2	-	0.2	0.5	-	-					

PM 2019 + Cumulative
2: Forrester Road & I-8 EB Ramp

HCM 2010 TWSC

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕			↕	
Traffic Vol, veh/h	98	0	6	0	0	0	0	186	153	194	51	0
Future Vol, veh/h	98	0	6	0	0	0	0	186	153	194	51	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	107	0	7	0	0	0	0	202	166	211	55	0
Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	762	845	55				-	0	0	368	0	0
Stage 1	477	477	-				-	-	-	-	-	-
Stage 2	285	368	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	373	300	1012				0	-	-	1191	-	0
Stage 1	624	556	-				0	-	-	-	-	0
Stage 2	763	621	-				0	-	-	-	-	0
Platoon blocked, %							-	-				
Mov Cap-1 Maneuver	305	0	1012				-	-	-	1191	-	-
Mov Cap-2 Maneuver	305	0	-				-	-	-	-	-	-
Stage 1	510	0	-				-	-	-	-	-	-
Stage 2	763	0	-				-	-	-	-	-	-
Approach	EB						NB			SB		
HCM Control Delay, s	22.2						0			6.9		
HCM LOS	C											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	305	1012	1191	-						
HCM Lane V/C Ratio	-	-	0.349	0.006	0.177	-						
HCM Control Delay (s)	-	-	23	8.6	8.7	0						
HCM Lane LOS	-	-	C	A	A	A						
HCM 95th %tile O(veh)	-	-	1.5	0	0.6	-						

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	170	62	1	0	7	160	5	5	1	59	1	8
Future Vol, veh/h	170	62	1	0	7	160	5	5	1	59	1	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	185	67	1	0	8	174	5	5	1	64	1	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	182	0	0	68	0	0	538	620	68	536	533	95
Stage 1	-	-	-	-	-	-	438	438	-	95	95	-
Stage 2	-	-	-	-	-	-	100	182	-	441	438	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1393	-	-	1533	-	-	454	404	995	455	453	962
Stage 1	-	-	-	-	-	-	597	579	-	912	816	-
Stage 2	-	-	-	-	-	-	906	749	-	595	579	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1393	-	-	1533	-	-	401	348	995	402	390	962
Mov Cap-2 Maneuver	-	-	-	-	-	-	401	348	-	402	390	-
Stage 1	-	-	-	-	-	-	515	499	-	786	816	-
Stage 2	-	-	-	-	-	-	897	749	-	507	499	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.8			0			14.4			15.1		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	395	1393	-	-	1533	-	-	431				
HCM Lane V/C Ratio	0.03	0.133	-	-	-	-	-	0.171				
HCM Control Delay (s)	14.4	8	0	-	0	-	-	15.1				
HCM Lane LOS	B	A	A	-	A	-	-	C				
HCM 95th %tile O(veh)	0.1	0.5	-	-	0	-	-	0.6				

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	91	0	1	1	0	0	0	0	1	0	0
Future Vol, veh/h	0	91	0	1	1	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	99	0	1	1	0	0	0	0	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	99	0	0	102	102	99	102	102	1
Stage 1	-	-	-	-	-	-	99	99	-	3	3	-
Stage 2	-	-	-	-	-	-	3	3	-	99	99	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1494	-	-	879	788	957	879	788	1084
Stage 1	-	-	-	-	-	-	907	813	-	1020	893	-
Stage 2	-	-	-	-	-	-	1020	893	-	907	813	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1494	-	-	878	787	957	878	787	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	878	787	-	878	787	-
Stage 1	-	-	-	-	-	-	907	813	-	1020	892	-
Stage 2	-	-	-	-	-	-	1019	892	-	907	813	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.7			0			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1622	-	-	1494	-	-	878				
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	0.001				
HCM Control Delay (s)	0	0	-	-	7.4	0	-	9.1				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	3	45	12	4	20	0	27	0	3	11	0
Future Vol, veh/h	44	3	45	12	4	20	0	27	0	3	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	3	49	13	4	22	0	29	0	3	12	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	60	47	12	73	47	29	12	0	0	29	0	0
Stage 1	18	18	-	29	29	-	-	-	-	-	-	-
Stage 2	42	29	-	44	18	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	936	845	1069	918	845	1046	1607	-	-	1584	-	-
Stage 1	1001	880	-	988	871	-	-	-	-	-	-	-
Stage 2	972	871	-	970	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	912	843	1069	872	843	1046	1607	-	-	1584	-	-
Mov Cap-2 Maneuver	912	843	-	872	843	-	-	-	-	-	-	-
Stage 1	1001	878	-	988	871	-	-	-	-	-	-	-
Stage 2	947	871	-	920	878	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		8.9			0			1.6			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1607	-	-	980	957	1584	-	-				
HCM Lane V/C Ratio	-	-	-	0.102	0.041	0.002	-	-				
HCM Control Delay (s)	0	-	-	9.1	8.9	7.3	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.3	0.1	0	-	-				

Intersection

Int Delay, s/veh 2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	62	50	11	33	2
Future Vol, veh/h	0	62	50	11	33	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	67	54	12	36	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	66	0	0 127 60
Stage 1	-	-	- 60 -
Stage 2	-	-	- 67 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1536	-	- 868 1005
Stage 1	-	-	- 963 -
Stage 2	-	-	- 956 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1536	-	- 868 1005
Mov Cap-2 Maneuver	-	-	- 868 -
Stage 1	-	-	- 963 -
Stage 2	-	-	- 956 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1536	-	-	-	875
HCM Lane V/C Ratio	-	-	-	-	0.043
HCM Control Delay (s)	0	-	-	-	9.3
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	96	0	0	60	0	0	0	1	0	0	1
Future Vol, veh/h	0	96	0	0	60	0	0	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	104	0	0	65	0	0	0	1	0	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	104	0	0	170	169	104	170	169	65
Stage 1	-	-	-	-	-	-	104	104	-	65	65	-
Stage 2	-	-	-	-	-	-	66	65	-	105	104	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1537	-	-	1488	-	-	794	724	951	794	724	999
Stage 1	-	-	-	-	-	-	902	809	-	946	841	-
Stage 2	-	-	-	-	-	-	945	841	-	901	809	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1537	-	-	1488	-	-	793	724	951	793	724	999
Mov Cap-2 Maneuver	-	-	-	-	-	-	793	724	-	793	724	-
Stage 1	-	-	-	-	-	-	902	809	-	946	841	-
Stage 2	-	-	-	-	-	-	944	841	-	900	809	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			8.8			8.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	951	1537	-	-	1488	-	-	999				
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	0.001				
HCM Control Delay (s)	8.8	0	-	-	0	-	-	8.6				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0				

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	96	61	0	0	0
Future Vol, veh/h	0	96	61	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	104	66	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	66	0	0 170 66
Stage 1	-	-	- 66 -
Stage 2	-	-	- 104 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1536	-	- 820 998
Stage 1	-	-	- 957 -
Stage 2	-	-	- 920 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1536	-	- 820 998
Mov Cap-2 Maneuver	-	-	- 820 -
Stage 1	-	-	- 957 -
Stage 2	-	-	- 920 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1536	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	208	0	96	12	114	0	0	273	80
Future Vol, veh/h	0	0	0	208	0	96	12	114	0	0	273	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	226	0	104	13	124	0	0	297	87
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				491	534	124	384	0	-	-	-	0
Stage 1				150	150	-	-	-	-	-	-	-
Stage 2				341	384	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				537	452	927	1174	-	0	0	-	-
Stage 1				878	773	-	-	-	0	0	-	-
Stage 2				720	611	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				531	0	927	1174	-	-	-	-	-
Mov Cap-2 Maneuver				531	0	-	-	-	-	-	-	-
Stage 1				867	0	-	-	-	-	-	-	-
Stage 2				720	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				14.4		0.8		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1174	-	531	927	-	-						
HCM Lane V/C Ratio	0.011	-	0.426	0.113	-	-						
HCM Control Delay (s)	8.1	0	16.7	9.4	-	-						
HCM Lane LOS	A	A	C	A	-	-						
HCM 95th %tile O(veh)	0	-	2.1	0.4	-	-						

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰			↰	
Traffic Vol, veh/h	59	1	57	0	0	0	0	59	25	109	347	0
Future Vol, veh/h	59	1	57	0	0	0	0	59	25	109	347	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	1	62	0	0	0	0	64	27	118	377	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	691	704	377				-	0	0	91	0	0
Stage 1	613	613	-				-	-	-	-	-	-
Stage 2	78	91	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	410	361	670				0	-	-	1504	-	0
Stage 1	541	483	-				0	-	-	-	-	0
Stage 2	945	820	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	369	0	670				-	-	-	1504	-	-
Mov Cap-2 Maneuver	369	0	-				-	-	-	-	-	-
Stage 1	487	0	-				-	-	-	-	-	-
Stage 2	945	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	13.9						0		1.8			
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	369	670	1504	-						
HCM Lane V/C Ratio	-	-	0.177	0.092	0.079	-						
HCM Control Delay (s)	-	-	16.8	10.9	7.6	0						
HCM Lane LOS	-	-	C	B	A	A						
HCM 95th %tile O(veh)	-	-	0.6	0.3	0.3	-						

Intersection												
Int Delay, s/veh	10.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	14	2	1	77	36	4	3	1	202	7	216
Future Vol, veh/h	18	14	2	1	77	36	4	3	1	202	7	216
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	15	2	1	84	39	4	3	1	220	8	235
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	123	0	0	17	0	0	283	181	16	164	163	104
Stage 1	-	-	-	-	-	-	56	56	-	106	106	-
Stage 2	-	-	-	-	-	-	227	125	-	58	57	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1464	-	-	1600	-	-	669	713	1063	801	729	951
Stage 1	-	-	-	-	-	-	956	848	-	900	807	-
Stage 2	-	-	-	-	-	-	776	792	-	954	847	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1464	-	-	1600	-	-	494	702	1063	788	718	951
Mov Cap-2 Maneuver	-	-	-	-	-	-	494	702	-	788	718	-
Stage 1	-	-	-	-	-	-	943	836	-	887	806	-
Stage 2	-	-	-	-	-	-	578	791	-	936	835	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4			0.1			11.1			13.9		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	601	1464	-	-	1600	-	-	862				
HCM Lane V/C Ratio	0.014	0.013	-	-	0.001	-	-	0.536				
HCM Control Delay (s)	11.1	7.5	0	-	7.3	0	-	13.9				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	3.3				

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	1	43	132	0	1	1	2	0	0	0
Future Vol, veh/h	0	2	1	43	132	0	1	1	2	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	1	47	143	0	1	1	2	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	143	0	0	3	0	0	240	240	3	241	240	143
Stage 1	-	-	-	-	-	-	3	3	-	237	237	-
Stage 2	-	-	-	-	-	-	237	237	-	4	3	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1440	-	-	1619	-	-	714	661	1081	713	661	905
Stage 1	-	-	-	-	-	-	1020	893	-	766	709	-
Stage 2	-	-	-	-	-	-	766	709	-	1018	893	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1440	-	-	1619	-	-	697	640	1081	693	640	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	697	640	-	693	640	-
Stage 1	-	-	-	-	-	-	1020	893	-	766	686	-
Stage 2	-	-	-	-	-	-	741	686	-	1015	893	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.8			9.4			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	825	1440	-	-	1619	-	-	-				
HCM Lane V/C Ratio	0.005	-	-	-	0.029	-	-	-				
HCM Control Delay (s)	9.4	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0.1	-	-	-				

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	3	0	1	0	6	44	12	0	28	33	132
Future Vol, veh/h	5	3	0	1	0	6	44	12	0	28	33	132
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	3	0	1	0	7	48	13	0	30	36	143
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	281	277	108	278	348	13	179	0	0	13	0	0
Stage 1	168	168	-	109	109	-	-	-	-	-	-	-
Stage 2	113	109	-	169	239	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	671	631	946	674	576	1067	1397	-	-	1606	-	-
Stage 1	834	759	-	896	805	-	-	-	-	-	-	-
Stage 2	892	805	-	833	708	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	639	596	946	643	544	1067	1397	-	-	1606	-	-
Mov Cap-2 Maneuver	639	596	-	643	544	-	-	-	-	-	-	-
Stage 1	805	743	-	865	777	-	-	-	-	-	-	-
Stage 2	856	777	-	812	693	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.9		8.7		6		1.1					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1397	-	-	622	975	1606	-	-				
HCM Lane V/C Ratio	0.034	-	-	0.014	0.008	0.019	-	-				
HCM Control Delay (s)	7.7	0	-	10.9	8.7	7.3	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile O(veh)	0.1	-	-	0	0	0.1	-	-				

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	63	49	60	5	5
Future Vol, veh/h	10	63	49	60	5	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, %	2	2	2	2	2	2
Mvmt Flow	11	68	53	65	5	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	118	0	-	0	176	86
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	90	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1470	-	-	-	814	973
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1470	-	-	-	807	973
Mov Cap-2 Maneuver	-	-	-	-	807	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	934	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		9.1		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1470	-	-	-	882	
HCM Lane V/C Ratio	0.007	-	-	-	0.012	
HCM Control Delay (s)	7.5	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	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	0	61	0	1	98	7	12	1	1	0	0	22
Future Vol, veh/h	0	61	0	1	98	7	12	1	1	0	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	66	0	1	107	8	13	1	1	0	0	24
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	115	0	0	66	0	0	191	183	66	180	179	111
Stage 1	-	-	-	-	-	-	66	66	-	113	113	-
Stage 2	-	-	-	-	-	-	125	117	-	67	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1474	-	-	1536	-	-	769	711	998	782	715	942
Stage 1	-	-	-	-	-	-	945	840	-	892	802	-
Stage 2	-	-	-	-	-	-	879	799	-	943	840	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1474	-	-	1536	-	-	749	710	998	780	714	942
Mov Cap-2 Maneuver	-	-	-	-	-	-	749	710	-	780	714	-
Stage 1	-	-	-	-	-	-	945	840	-	892	801	-
Stage 2	-	-	-	-	-	-	856	798	-	941	840	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			9.8			8.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	760	1474	-	-	1536	-	-	942				
HCM Lane V/C Ratio	0.02	-	-	-	0.001	-	-	0.025				
HCM Control Delay (s)	9.8	0	-	-	7.3	0	-	8.9				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	61	111	22	0	0
Future Vol, veh/h	7	61	111	22	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	66	121	24	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	145	0	-	0	215	133
Stage 1	-	-	-	-	133	-
Stage 2	-	-	-	-	82	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1437	-	-	-	773	916
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	941	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1437	-	-	-	768	916
Mov Cap-2 Maneuver	-	-	-	-	768	-
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	941	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1437	-	-	-	-	
HCM Lane V/C Ratio	0.005	-	-	-	-	
HCM Control Delay (s)	7.5	0	-	-	0	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	23	0	108	56	241	0	0	223	56
Future Vol, veh/h	0	0	0	23	0	108	56	241	0	0	223	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	25	0	117	61	262	0	0	242	61
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				657	687	262	303	0	-	-	-	0
Stage 1				384	384	-	-	-	-	-	-	-
Stage 2				273	303	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				430	370	777	1258	-	0	0	-	-
Stage 1				688	611	-	-	-	0	0	-	-
Stage 2				773	664	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				405	0	777	1258	-	-	-	-	-
Mov Cap-2 Maneuver				405	0	-	-	-	-	-	-	-
Stage 1				649	0	-	-	-	-	-	-	-
Stage 2				773	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				11.2		1.5		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1258	-	405	777	-	-						
HCM Lane V/C Ratio	0.048	-	0.062	0.151	-	-						
HCM Control Delay (s)	8	0	14.5	10.5	-	-						
HCM Lane LOS	A	A	B	B	-	-						
HCM 95th %tile O(veh)	0.2	-	0.2	0.5	-	-						

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕			↕	
Traffic Vol, veh/h	98	0	6	0	0	0	0	208	189	194	52	0
Future Vol, veh/h	98	0	6	0	0	0	0	208	189	194	52	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	107	0	7	0	0	0	0	226	205	211	57	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	808	910	57				-	0	0	431	0	0
Stage 1	479	479	-				-	-	-	-	-	-
Stage 2	329	431	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	350	275	1009				0	-	-	1129	-	0
Stage 1	623	555	-				0	-	-	-	-	0
Stage 2	729	583	-				0	-	-	-	-	0
Platoon blocked, %							-	-	-			
Mov Cap-1 Maneuver	282	0	1009				-	-	-	1129	-	-
Mov Cap-2 Maneuver	282	0	-				-	-	-	-	-	-
Stage 1	503	0	-				-	-	-	-	-	-
Stage 2	729	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	24.3						0		7			
HCM LOS	C											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	EBLn2	SBL	SBT					
Capacity (veh/h)		-	-	282	1009	1129	-					
HCM Lane V/C Ratio		-	-	0.378	0.006	0.187	-					
HCM Control Delay (s)		-	-	25.3	8.6	8.9	0					
HCM Lane LOS		-	-	D	A	A	A					
HCM 95th %tile O(veh)		-	-	1.7	0	0.7	-					

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	228	91	1	0	8	160	5	5	1	59	1	9
Future Vol, veh/h	228	91	1	0	8	160	5	5	1	59	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	248	99	1	0	9	174	5	5	1	64	1	10
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	183	0	0	100	0	0	698	779	100	695	692	96
Stage 1	-	-	-	-	-	-	596	596	-	96	96	-
Stage 2	-	-	-	-	-	-	102	183	-	599	596	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1392	-	-	1493	-	-	355	327	956	357	367	960
Stage 1	-	-	-	-	-	-	490	492	-	911	815	-
Stage 2	-	-	-	-	-	-	904	748	-	488	492	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1392	-	-	1493	-	-	300	265	956	300	298	960
Mov Cap-2 Maneuver	-	-	-	-	-	-	300	265	-	300	298	-
Stage 1	-	-	-	-	-	-	397	399	-	739	815	-
Stage 2	-	-	-	-	-	-	894	748	-	390	399	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.8			0			17.5			19.1		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	301	1392	-	-	1493	-	-	330				
HCM Lane V/C Ratio	0.04	0.178	-	-	-	-	-	0.227				
HCM Control Delay (s)	17.5	8.1	0	-	0	-	-	19.1				
HCM Lane LOS	C	A	A	-	A	-	-	C				
HCM 95th %tile O(veh)	0.1	0.6	-	-	0	-	-	0.9				

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	134	0	2	2	0	0	0	43	1	0	0
Future Vol, veh/h	0	134	0	2	2	0	0	0	43	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	146	0	2	2	0	0	0	47	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	146	0	0	152	152	146	176	152	2
Stage 1	-	-	-	-	-	-	146	146	-	6	6	-
Stage 2	-	-	-	-	-	-	6	6	-	170	146	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1620	-	-	1436	-	-	815	740	901	786	740	1082
Stage 1	-	-	-	-	-	-	857	776	-	1016	891	-
Stage 2	-	-	-	-	-	-	1016	891	-	832	776	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1436	-	-	814	739	901	744	739	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	814	739	-	744	739	-
Stage 1	-	-	-	-	-	-	857	776	-	1016	890	-
Stage 2	-	-	-	-	-	-	1015	890	-	789	776	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.8			9.2			9.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	901	1620	-	-	1436	-	-	744				
HCM Lane V/C Ratio	0.052	-	-	-	0.002	-	-	0.001				
HCM Control Delay (s)	9.2	0	-	-	7.5	0	-	9.8				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	8.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	130	3	45	12	4	20	0	27	0	3	11	2
Future Vol, veh/h	130	3	45	12	4	20	0	27	0	3	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	141	3	49	13	4	22	0	29	0	3	12	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	61	48	13	74	49	29	14	0	0	29	0	0
Stage 1	19	19	-	29	29	-	-	-	-	-	-	-
Stage 2	42	29	-	45	20	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	934	844	1067	916	843	1046	1604	-	-	1584	-	-
Stage 1	1000	880	-	988	871	-	-	-	-	-	-	-
Stage 2	972	871	-	969	879	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	910	842	1067	870	841	1046	1604	-	-	1584	-	-
Mov Cap-2 Maneuver	910	842	-	870	841	-	-	-	-	-	-	-
Stage 1	1000	878	-	988	871	-	-	-	-	-	-	-
Stage 2	947	871	-	919	877	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.8		8.9			0			1.4			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1604	-	-	944	956	1584	-	-				
HCM Lane V/C Ratio	-	-	-	0.205	0.041	0.002	-	-				
HCM Control Delay (s)	0	-	-	9.8	8.9	7.3	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.8	0.1	0	-	-				

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	62	57	12	62	9
Future Vol, veh/h	0	62	57	12	62	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	67	62	13	67	10

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	75	0	0 136 69
Stage 1	-	-	- 69 -
Stage 2	-	-	- 67 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1524	-	- 857 994
Stage 1	-	-	- 954 -
Stage 2	-	-	- 956 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1524	-	- 857 994
Mov Cap-2 Maneuver	-	-	- 857 -
Stage 1	-	-	- 954 -
Stage 2	-	-	- 956 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1524	-	-	-	872
HCM Lane V/C Ratio	-	-	-	-	0.089
HCM Control Delay (s)	0	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

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	22	125	0	0	61	0	0	0	1	7	0	1
Future Vol, veh/h	22	125	0	0	61	0	0	0	1	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	136	0	0	66	0	0	0	1	8	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	66	0	0	136	0	0	251	250	136	251	250	66
Stage 1	-	-	-	-	-	-	184	184	-	66	66	-
Stage 2	-	-	-	-	-	-	67	66	-	185	184	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1536	-	-	1448	-	-	702	653	913	702	653	998
Stage 1	-	-	-	-	-	-	818	747	-	945	840	-
Stage 2	-	-	-	-	-	-	943	840	-	817	747	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1536	-	-	1448	-	-	692	642	913	692	642	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	692	642	-	692	642	-
Stage 1	-	-	-	-	-	-	804	734	-	929	840	-
Stage 2	-	-	-	-	-	-	942	840	-	802	734	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	8.9	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	913	1536	-	-	1448	-	-	720
HCM Lane V/C Ratio	0.001	0.016	-	-	-	-	-	0.012
HCM Control Delay (s)	8.9	7.4	0	-	0	-	-	10.1
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	125	62	0	22	7
Future Vol, veh/h	0	125	62	0	22	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, %	2	2	2	2	2	2
Mvmt Flow	0	136	67	0	24	8
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	67	0	-	0	203	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1535	-	-	-	786	997
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1535	-	-	-	786	997
Mov Cap-2 Maneuver	-	-	-	-	786	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	890	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1535	-	-	-	828	
HCM Lane V/C Ratio	-	-	-	-	0.038	
HCM Control Delay (s)	0	-	-	-	9.5	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Appendix S

Year 2027 Intersection LOS Calculations

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗		↕			↖	
Traffic Vol, veh/h	0	0	0	48	0	99	14	117	0	0	151	80
Future Vol, veh/h	0	0	0	48	0	99	14	117	0	0	151	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	52	0	108	15	127	0	0	164	87
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				365	408	127	251	0	-	-	-	0
Stage 1				157	157	-	-	-	-	-	-	-
Stage 2				208	251	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				635	533	923	1314	-	0	0	-	-
Stage 1				871	768	-	-	-	0	0	-	-
Stage 2				827	699	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				627	0	923	1314	-	-	-	-	-
Mov Cap-2 Maneuver				627	0	-	-	-	-	-	-	-
Stage 1				861	0	-	-	-	-	-	-	-
Stage 2				827	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10		0.8		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1314	-	627	923	-	-						
HCM Lane V/C Ratio	0.012	-	0.083	0.117	-	-						
HCM Control Delay (s)	7.8	0	11.3	9.4	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile Q(veh)	0	-	0.3	0.4	-	-						

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰			↰	
Traffic Vol, veh/h	68	1	11	0	0	0	0	67	24	90	103	0
Future Vol, veh/h	68	1	11	0	0	0	0	67	24	90	103	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	1	12	0	0	0	0	73	26	98	112	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	394	407	112				-	0	0	99	0	0
Stage 1	308	308	-				-	-	-	-	-	-
Stage 2	86	99	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	611	533	941				0	-	-	1494	-	0
Stage 1	745	660	-				0	-	-	-	-	0
Stage 2	937	813	-				0	-	-	-	-	0
Platoon blocked, %							-	-	-			
Mov Cap-1 Maneuver	568	0	941				-	-	-	1494	-	-
Mov Cap-2 Maneuver	568	0	-				-	-	-	-	-	-
Stage 1	693	0	-				-	-	-	-	-	-
Stage 2	937	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	11.8						0		3.5			
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	568	941	1494	-						
HCM Lane V/C Ratio	-	-	0.132	0.013	0.065	-						
HCM Control Delay (s)	-	-	12.3	8.9	7.6	0						
HCM Lane LOS	-	-	B	A	A	A						
HCM 95th %tile O(veh)	-	-	0.5	0	0.2	-						

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	16	2	1	18	39	5	4	1	92	8	14
Future Vol, veh/h	17	16	2	1	18	39	5	4	1	92	8	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	17	2	1	20	42	5	4	1	100	9	15
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	62	0	0	19	0	0	109	118	18	100	98	41
Stage 1	-	-	-	-	-	-	54	54	-	43	43	-
Stage 2	-	-	-	-	-	-	55	64	-	57	55	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1541	-	-	1597	-	-	870	772	1061	881	792	1030
Stage 1	-	-	-	-	-	-	958	850	-	971	859	-
Stage 2	-	-	-	-	-	-	957	842	-	955	849	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1541	-	-	1597	-	-	841	762	1061	868	782	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	841	762	-	868	782	-
Stage 1	-	-	-	-	-	-	947	840	-	959	858	-
Stage 2	-	-	-	-	-	-	932	841	-	938	839	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.6			0.1			9.4			9.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	824	1541	-	-	1597	-	-	878				
HCM Lane V/C Ratio	0.013	0.012	-	-	0.001	-	-	0.141				
HCM Control Delay (s)	9.4	7.4	0	-	7.3	0	-	9.8				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.5				

Intersection

Int Delay, s/veh 4.3

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

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	2	0	0	3	3	2	4	3	1
Stage 1	-	-	-	-	-	-	2	2	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	3	2	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1620	-	-	1019	893	1082	1017	893	1084
Stage 1	-	-	-	-	-	-	1021	894	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1020	894	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1622	-	-	1620	-	-	1019	893	1082	1015	893	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1019	893	-	1015	893	-
Stage 1	-	-	-	-	-	-	1021	894	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1018	894	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	992	1622	-	-	1620	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-	-	-	-
HCM Control Delay (s)	8.6	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	1	0	1	0	2	0	13	0	5	16	2
Future Vol, veh/h	4	1	0	1	0	2	0	13	0	5	16	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	0	1	0	2	0	14	0	5	17	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	43	42	18	43	43	14	19	0	0	14	0	0
Stage 1	28	28	-	14	14	-	-	-	-	-	-	-
Stage 2	15	14	-	29	29	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	960	850	1061	960	849	1066	1597	-	-	1604	-	-
Stage 1	989	872	-	1006	884	-	-	-	-	-	-	-
Stage 2	1005	884	-	988	871	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	956	847	1061	957	846	1066	1597	-	-	1604	-	-
Mov Cap-2 Maneuver	956	847	-	957	846	-	-	-	-	-	-	-
Stage 1	989	869	-	1006	884	-	-	-	-	-	-	-
Stage 2	1003	884	-	984	868	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.9		8.5			0			1.6			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1597	-	-	932 1027	1604	-	-					
HCM Lane V/C Ratio	-	-	-	0.006 0.003	0.003	-	-					
HCM Control Delay (s)	0	-	-	8.9 8.5	7.3	0	-					
HCM Lane LOS	A	-	-	A A	A	A	-					
HCM 95th %tile O(veh)	0	-	-	0 0	0	-	-					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	39	51	5	2	6
Future Vol, veh/h	4	39	51	5	2	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, %	2	2	2	2	2	2
Mvmt Flow	4	42	55	5	2	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	60	0	-	0	108	58
Stage 1	-	-	-	-	58	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1544	-	-	-	889	1008
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1544	-	-	-	886	1008
Mov Cap-2 Maneuver	-	-	-	-	886	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	972	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1544	-	-	-	974	
HCM Lane V/C Ratio	0.003	-	-	-	0.009	
HCM Control Delay (s)	7.3	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	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	0	42	0	1	44	0	14	1	1	0	0	0
Future Vol, veh/h	0	42	0	1	44	0	14	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	46	0	1	48	0	15	1	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	46	0	0	96	96	46	97	96	48
Stage 1	-	-	-	-	-	-	46	46	-	50	50	-
Stage 2	-	-	-	-	-	-	50	50	-	47	46	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1559	-	-	1562	-	-	887	794	1023	885	794	1021
Stage 1	-	-	-	-	-	-	968	857	-	963	853	-
Stage 2	-	-	-	-	-	-	963	853	-	967	857	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1559	-	-	1562	-	-	886	793	1023	882	793	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	886	793	-	882	793	-
Stage 1	-	-	-	-	-	-	968	857	-	963	852	-
Stage 2	-	-	-	-	-	-	962	852	-	965	857	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			9.1			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	887	1559	-	-	1562	-	-	-				
HCM Lane V/C Ratio	0.02	-	-	-	0.001	-	-	-				
HCM Control Delay (s)	9.1	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	-				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	42	59	0	0	0
Future Vol, veh/h	0	42	59	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	46	64	0	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	64	0	-	0	110	64
Stage 1	-	-	-	-	64	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1538	-	-	-	887	1000
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	976	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1538	-	-	-	887	1000
Mov Cap-2 Maneuver	-	-	-	-	887	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	976	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1538	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	19	0	85	10	149	0	0	231	65
Future Vol, veh/h	0	0	0	19	0	85	10	149	0	0	231	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	21	0	92	11	162	0	0	251	71

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	471	506	162
Stage 1	184	184	-
Stage 2	287	322	-
Critical Hdwy	6.42	6.52	6.22
Critical Hdwy Stg 1	5.42	5.52	-
Critical Hdwy Stg 2	5.42	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	551	469	883
Stage 1	848	747	-
Stage 2	762	651	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	545	0	883
Mov Cap-2 Maneuver	545	0	-
Stage 1	840	0	-
Stage 2	762	0	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTWBLn1WBLn2	SBT	SBR
Capacity (veh/h)	1238	-	545	883
HCM Lane V/C Ratio	0.009	-	0.038	0.105
HCM Control Delay (s)	7.9	0	11.9	9.6
HCM Lane LOS	A	A	B	A
HCM 95th %tile Q(veh)	0	-	0.1	0.3

Intersection													
Int Delay, s/veh	7.5												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Vol, veh/h	100	0	5	0	0	0	0	56	25	201	50	0	
Future Vol, veh/h	100	0	5	0	0	0	0	56	25	201	50	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	109	0	5	0	0	0	0	61	27	218	54	0	
Major/Minor	Minor2			Major1				Major2					
Conflicting Flow All	565	578	54					-	0	0	88	0	0
Stage 1	490	490	-					-	-	-	-	-	-
Stage 2	75	88	-					-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22					-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-					-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-					-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318					-	-	-	2.218	-	-
Pot Cap-1 Maneuver	486	427	1013					0	-	-	1508	-	0
Stage 1	616	549	-					0	-	-	-	-	0
Stage 2	948	822	-					0	-	-	-	-	0
Platoon blocked, %								-	-	-			
Mov Cap-1 Maneuver	414	0	1013					-	-	-	1508	-	-
Mov Cap-2 Maneuver	414	0	-					-	-	-	-	-	-
Stage 1	524	0	-					-	-	-	-	-	-
Stage 2	948	0	-					-	-	-	-	-	-
Approach	EB			NB				SB					
HCM Control Delay, s	16.4			0				6.2					
HCM LOS	C												
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT							
Capacity (veh/h)	-	-	414	1013	1508	-							
HCM Lane V/C Ratio	-	-	0.263	0.005	0.145	-							
HCM Control Delay (s)	-	-	16.8	8.6	7.8	0							
HCM Lane LOS	-	-	C	A	A	A							
HCM 95th %tile Q(veh)	-	-	1	0	0.5	-							

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	35	1	0	8	44	6	6	1	61	1	5
Future Vol, veh/h	27	35	1	0	8	44	6	6	1	61	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	38	1	0	9	48	7	7	1	66	1	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	57	0	0	39	0	0	133	154	39	134	130	33
Stage 1	-	-	-	-	-	-	97	97	-	33	33	-
Stage 2	-	-	-	-	-	-	36	57	-	101	97	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1547	-	-	1571	-	-	839	738	1033	838	761	1041
Stage 1	-	-	-	-	-	-	910	815	-	983	868	-
Stage 2	-	-	-	-	-	-	980	847	-	905	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1547	-	-	1571	-	-	821	724	1033	820	747	1041
Mov Cap-2 Maneuver	-	-	-	-	-	-	821	724	-	820	747	-
Stage 1	-	-	-	-	-	-	893	800	-	964	868	-
Stage 2	-	-	-	-	-	-	974	847	-	880	800	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.2			0			9.7			9.7		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	785	1547	-	-	1571	-	-	832				
HCM Lane V/C Ratio	0.018	0.019	-	-	-	-	-	0.088				
HCM Control Delay (s)	9.7	7.4	0	-	0	-	-	9.7				
HCM Lane LOS	A	A	A	-	A	-	-	A				
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3				

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	0	1	1	0	0	0	0	1	0	0
Future Vol, veh/h	0	4	0	1	1	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	0	1	1	0	0	0	0	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	4	0	0	7	7	4	7	7	1
Stage 1	-	-	-	-	-	-	4	4	-	3	3	-
Stage 2	-	-	-	-	-	-	3	3	-	4	4	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1618	-	-	1013	888	1080	1013	888	1084
Stage 1	-	-	-	-	-	-	1018	892	-	1020	893	-
Stage 2	-	-	-	-	-	-	1020	893	-	1018	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1618	-	-	1012	887	1080	1012	887	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1012	887	-	1012	887	-
Stage 1	-	-	-	-	-	-	1018	892	-	1020	892	-
Stage 2	-	-	-	-	-	-	1019	892	-	1018	892	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.6			0			8.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1622	-	-	1618	-	-	1012				
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	0.001				
HCM Control Delay (s)	0	0	-	-	7.2	0	-	8.6				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0				

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	1	2	2	0	0	8	0	4	12	0
Future Vol, veh/h	0	4	1	2	2	0	0	8	0	4	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	1	2	2	0	0	9	0	4	13	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	31	30	13	33	30	9	13	0	0	9	0	0
Stage 1	21	21	-	9	9	-	-	-	-	-	-	-
Stage 2	10	9	-	24	21	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	977	863	1067	974	863	1073	1606	-	-	1611	-	-
Stage 1	998	878	-	1012	888	-	-	-	-	-	-	-
Stage 2	1011	888	-	994	878	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	973	860	1067	967	860	1073	1606	-	-	1611	-	-
Mov Cap-2 Maneuver	973	860	-	967	860	-	-	-	-	-	-	-
Stage 1	998	875	-	1012	888	-	-	-	-	-	-	-
Stage 2	1009	888	-	985	875	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9	0	1.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1606	-	-	895	910	1611	-
HCM Lane V/C Ratio	-	-	-	0.006	0.005	0.003	-
HCM Control Delay (s)	0	-	-	9	9	7.2	0
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	66	32	12	7	2
Future Vol, veh/h	0	66	32	12	7	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	72	35	13	8	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	48	0	0 114 42
Stage 1	-	-	- 42 -
Stage 2	-	-	- 72 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1559	-	- 882 1029
Stage 1	-	-	- 980 -
Stage 2	-	-	- 951 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1559	-	- 882 1029
Mov Cap-2 Maneuver	-	-	- 882 -
Stage 1	-	-	- 980 -
Stage 2	-	-	- 951 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1559	-	-	-	911
HCM Lane V/C Ratio	-	-	-	-	0.011
HCM Control Delay (s)	0	-	-	-	9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	74	0	0	43	0	0	0	1	0	0	1
Future Vol, veh/h	0	74	0	0	43	0	0	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	80	0	0	47	0	0	0	1	0	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	80	0	0	128	127	80	128	127	47
Stage 1	-	-	-	-	-	-	80	80	-	47	47	-
Stage 2	-	-	-	-	-	-	48	47	-	81	80	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1560	-	-	1518	-	-	845	764	980	845	764	1022
Stage 1	-	-	-	-	-	-	929	828	-	967	856	-
Stage 2	-	-	-	-	-	-	965	856	-	927	828	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1560	-	-	1518	-	-	844	764	980	844	764	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	844	764	-	844	764	-
Stage 1	-	-	-	-	-	-	929	828	-	967	856	-
Stage 2	-	-	-	-	-	-	964	856	-	926	828	-
Approach	EB		WB				NB			SB		
HCM Control Delay, s	0		0				8.7			8.5		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	980	1560	-	-	1518	-	-	1022				
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	0.001				
HCM Control Delay (s)	8.7	0	-	-	0	-	-	8.5				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	74	44	0	0	0
Future Vol, veh/h	0	74	44	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	80	48	0	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	48	0	-	0	128	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	80	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1559	-	-	-	866	1021
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1559	-	-	-	866	1021
Mov Cap-2 Maneuver	-	-	-	-	866	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	943	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1559	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Appendix T

Year 2027 + Project Construction Intersection LOS Calculations

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	84	0	99	14	117	0	0	173	80
Future Vol, veh/h	0	0	0	84	0	99	14	117	0	0	173	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	91	0	108	15	127	0	0	188	87
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				389	432	127	275	0	-	-	-	0
Stage 1				157	157	-	-	-	-	-	-	-
Stage 2				232	275	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				615	516	923	1288	-	0	0	-	-
Stage 1				871	768	-	-	-	0	0	-	-
Stage 2				807	683	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				607	0	923	1288	-	-	-	-	-
Mov Cap-2 Maneuver				607	0	-	-	-	-	-	-	-
Stage 1				860	0	-	-	-	-	-	-	-
Stage 2				807	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10.6		0.8		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1288	-	607	923	-	-						
HCM Lane V/C Ratio	0.012	-	0.15	0.117	-	-						
HCM Control Delay (s)	7.8	0	12	9.4	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile O(veh)	0	-	0.5	0.4	-	-						

AM 2027 + Project
2: Forrester Road & I-8 EB Ramp

HCM 2010 TWSC

Intersection													
Int Delay, s/veh	4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕	↗					↖			↕		
Traffic Vol, veh/h	68	1	11	0	0	0	0	67	25	90	161	0	
Future Vol, veh/h	68	1	11	0	0	0	0	67	25	90	161	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	74	1	12	0	0	0	0	73	27	98	175	0	
Major/Minor	Minor2			Major1				Major2					
Conflicting Flow All	458	471	175					-	0	0	100	0	0
Stage 1	371	371	-					-	-	-	-	-	-
Stage 2	87	100	-					-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22					-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-					-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-					-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318					-	-	-	2.218	-	-
Pot Cap-1 Maneuver	561	491	868					0	-	-	1493	-	0
Stage 1	698	620	-					0	-	-	-	-	0
Stage 2	936	812	-					0	-	-	-	-	0
Platoon blocked, %								-	-	-			
Mov Cap-1 Maneuver	520	0	868					-	-	-	1493	-	-
Mov Cap-2 Maneuver	520	0	-					-	-	-	-	-	-
Stage 1	647	0	-					-	-	-	-	-	-
Stage 2	936	0	-					-	-	-	-	-	-
Approach	EB			NB				SB					
HCM Control Delay, s	12.6			0				2.7					
HCM LOS	B												
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT							
Capacity (veh/h)	-	-	520	868	1493	-							
HCM Lane V/C Ratio	-	-	0.144	0.014	0.066	-							
HCM Control Delay (s)	-	-	13.1	9.2	7.6	0							
HCM Lane LOS	-	-	B	A	A	A							
HCM 95th %tile Q(veh)	-	-	0.5	0	0.2	-							

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	17	2	1	47	39	5	4	1	92	8	72
Future Vol, veh/h	18	17	2	1	47	39	5	4	1	92	8	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	18	2	1	51	42	5	4	1	100	9	78
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	20	0	0	177	154	19	136	134	72
Stage 1	-	-	-	-	-	-	59	59	-	74	74	-
Stage 2	-	-	-	-	-	-	118	95	-	62	60	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1501	-	-	1596	-	-	785	738	1059	835	757	990
Stage 1	-	-	-	-	-	-	953	846	-	935	833	-
Stage 2	-	-	-	-	-	-	887	816	-	949	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1501	-	-	1596	-	-	709	728	1059	822	746	990
Mov Cap-2 Maneuver	-	-	-	-	-	-	709	728	-	822	746	-
Stage 1	-	-	-	-	-	-	941	835	-	923	832	-
Stage 2	-	-	-	-	-	-	808	815	-	931	834	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.6			0.1			9.9			10.2		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	741	1501	-	-	1596	-	-	880				
HCM Lane V/C Ratio	0.015	0.013	-	-	0.001	-	-	0.212				
HCM Control Delay (s)	9.9	7.4	0	-	7.3	0	-	10.2				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.8				

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	1	43	44	0	1	1	2	0	0	0
Future Vol, veh/h	0	2	1	43	44	0	1	1	2	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	1	47	48	0	1	1	2	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	3	0	0	145	145	3	146	145	48
Stage 1	-	-	-	-	-	-	3	3	-	142	142	-
Stage 2	-	-	-	-	-	-	142	142	-	4	3	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1559	-	-	1619	-	-	824	746	1081	823	746	1021
Stage 1	-	-	-	-	-	-	1020	893	-	861	779	-
Stage 2	-	-	-	-	-	-	861	779	-	1018	893	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1559	-	-	1619	-	-	805	724	1081	802	724	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	805	724	-	802	724	-
Stage 1	-	-	-	-	-	-	1020	893	-	861	756	-
Stage 2	-	-	-	-	-	-	835	756	-	1015	893	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.6			9			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	894	1559	-	-	1619	-	-	-				
HCM Lane V/C Ratio	0.005	-	-	-	0.029	-	-	-				
HCM Control Delay (s)	9	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	-				

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	1	0	1	0	2	0	13	0	5	16	88
Future Vol, veh/h	6	1	0	1	0	2	0	13	0	5	16	88
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	1	0	1	0	2	0	14	0	5	17	96
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	90	89	65	90	137	14	113	0	0	14	0	0
Stage 1	75	75	-	14	14	-	-	-	-	-	-	-
Stage 2	15	14	-	76	123	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	895	801	999	895	754	1066	1476	-	-	1604	-	-
Stage 1	934	833	-	1006	884	-	-	-	-	-	-	-
Stage 2	1005	884	-	933	794	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	891	799	999	892	752	1066	1476	-	-	1604	-	-
Mov Cap-2 Maneuver	891	799	-	892	752	-	-	-	-	-	-	-
Stage 1	934	831	-	1006	884	-	-	-	-	-	-	-
Stage 2	1003	884	-	929	792	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		8.6			0			0.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1476	-	-	877	1001	1604	-	-				
HCM Lane V/C Ratio	-	-	-	0.009	0.003	0.003	-	-				
HCM Control Delay (s)	0	-	-	9.1	8.6	7.3	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0	0	0	-	-				

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	46	51	34	3	6
Future Vol, veh/h	11	46	51	34	3	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, %	2	2	2	2	2	2
Mvmt Flow	12	50	55	37	3	7

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	92	0	0 148 74
Stage 1	-	-	- 74 -
Stage 2	-	-	- 74 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1503	-	- 844 988
Stage 1	-	-	- 949 -
Stage 2	-	-	- 949 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1503	-	- 837 988
Mov Cap-2 Maneuver	-	-	- 837 -
Stage 1	-	-	- 941 -
Stage 2	-	-	- 949 -

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1503	-	-	-	932
HCM Lane V/C Ratio	0.008	-	-	-	0.01
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	43	0	1	73	7	14	1	1	0	0	22
Future Vol, veh/h	0	43	0	1	73	7	14	1	1	0	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	47	0	1	79	8	15	1	1	0	0	24
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	87	0	0	47	0	0	144	136	47	133	132	83
Stage 1	-	-	-	-	-	-	47	47	-	85	85	-
Stage 2	-	-	-	-	-	-	97	89	-	48	47	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1509	-	-	1560	-	-	825	755	1022	839	759	976
Stage 1	-	-	-	-	-	-	967	856	-	923	824	-
Stage 2	-	-	-	-	-	-	910	821	-	965	856	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1509	-	-	1560	-	-	804	754	1022	836	758	976
Mov Cap-2 Maneuver	-	-	-	-	-	-	804	754	-	836	758	-
Stage 1	-	-	-	-	-	-	967	856	-	923	823	-
Stage 2	-	-	-	-	-	-	887	820	-	963	856	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			9.5			8.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	811	1509	-	-	1560	-	-	976				
HCM Lane V/C Ratio	0.021	-	-	-	0.001	-	-	0.025				
HCM Control Delay (s)	9.5	0	-	-	7.3	0	-	8.8				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	43	88	22	0	0
Future Vol, veh/h	7	43	88	22	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	47	96	24	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	120	0	-	0	171	108
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	63	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1468	-	-	-	819	946
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	960	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1468	-	-	-	814	946
Mov Cap-2 Maneuver	-	-	-	-	814	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	960	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1468	-	-	-	-	
HCM Lane V/C Ratio	0.005	-	-	-	-	
HCM Control Delay (s)	7.5	0	-	-	0	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	20	0	85	10	171	0	0	231	65
Future Vol, veh/h	0	0	0	20	0	85	10	171	0	0	231	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	22	0	92	11	186	0	0	251	71
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				495	530	186	322	0	-	-	-	0
Stage 1				208	208	-	-	-	-	-	-	-
Stage 2				287	322	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				534	455	856	1238	-	0	0	-	-
Stage 1				827	730	-	-	-	0	0	-	-
Stage 2				762	651	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				529	0	856	1238	-	-	-	-	-
Mov Cap-2 Maneuver				529	0	-	-	-	-	-	-	-
Stage 1				819	0	-	-	-	-	-	-	-
Stage 2				762	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10.2		0.4		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1238	-	529	856	-	-						
HCM Lane V/C Ratio	0.009	-	0.041	0.108	-	-						
HCM Control Delay (s)	7.9	0	12.1	9.7	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile O(veh)	0	-	0.1	0.4	-	-						

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕			↕	
Traffic Vol, veh/h	100	0	5	0	0	0	0	78	61	201	51	0
Future Vol, veh/h	100	0	5	0	0	0	0	78	61	201	51	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	0	5	0	0	0	0	85	66	218	55	0
Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	609	642	55				-	0	0	151	0	0
Stage 1	491	491	-				-	-	-	-	-	-
Stage 2	118	151	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	458	392	1012				0	-	-	1430	-	0
Stage 1	615	548	-				0	-	-	-	-	0
Stage 2	907	772	-				0	-	-	-	-	0
Platoon blocked, %							-	-				
Mov Cap-1 Maneuver	386	0	1012				-	-	-	1430	-	-
Mov Cap-2 Maneuver	386	0	-				-	-	-	-	-	-
Stage 1	518	0	-				-	-	-	-	-	-
Stage 2	907	0	-				-	-	-	-	-	-
Approach	EB						NB			SB		
HCM Control Delay, s	17.5						0			6.4		
HCM LOS	C											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	EBLn2	SBL	SBT					
Capacity (veh/h)		-	-	386	1012	1430	-					
HCM Lane V/C Ratio		-	-	0.282	0.005	0.153	-					
HCM Control Delay (s)		-	-	17.9	8.6	8	0					
HCM Lane LOS		-	-	C	A	A	A					
HCM 95th %tile O(veh)		-	-	1.1	0	0.5	-					

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	85	64	1	0	9	44	6	6	1	61	1	6
Future Vol, veh/h	85	64	1	0	9	44	6	6	1	61	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	92	70	1	0	10	48	7	7	1	66	1	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	71	0	0	293	313	71	293	289	34
Stage 1	-	-	-	-	-	-	255	255	-	34	34	-
Stage 2	-	-	-	-	-	-	38	58	-	259	255	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1546	-	-	1529	-	-	659	602	991	659	621	1039
Stage 1	-	-	-	-	-	-	749	696	-	982	867	-
Stage 2	-	-	-	-	-	-	977	847	-	746	696	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1546	-	-	1529	-	-	623	565	991	621	582	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	623	565	-	621	582	-
Stage 1	-	-	-	-	-	-	703	653	-	921	867	-
Stage 2	-	-	-	-	-	-	970	847	-	692	653	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.2			0			11			11.3		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	611	1546	-	-	1529	-	-	643				
HCM Lane V/C Ratio	0.023	0.06	-	-	-	-	-	0.115				
HCM Control Delay (s)	11	7.5	0	-	0	-	-	11.3				
HCM Lane LOS	B	A	A	-	A	-	-	B				
HCM 95th %tile O(veh)	0.1	0.2	-	-	0	-	-	0.4				

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	47	0	2	2	0	0	0	43	1	0	0
Future Vol, veh/h	0	47	0	2	2	0	0	0	43	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	0	2	2	0	0	0	47	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	51	0	0	57	57	51	81	57	2
Stage 1	-	-	-	-	-	-	51	51	-	6	6	-
Stage 2	-	-	-	-	-	-	6	6	-	75	51	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1620	-	-	1555	-	-	940	834	1017	907	834	1082
Stage 1	-	-	-	-	-	-	962	852	-	1016	891	-
Stage 2	-	-	-	-	-	-	1016	891	-	934	852	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1555	-	-	939	833	1017	864	833	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	939	833	-	864	833	-
Stage 1	-	-	-	-	-	-	962	852	-	1016	890	-
Stage 2	-	-	-	-	-	-	1015	890	-	891	852	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.7			8.7			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	1017	1620	-	-	1555	-	-	864				
HCM Lane V/C Ratio	0.046	-	-	-	0.001	-	-	0.001				
HCM Control Delay (s)	8.7	0	-	-	7.3	0	-	9.2				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	86	4	1	2	2	0	0	8	0	4	12	2
Future Vol, veh/h	86	4	1	2	2	0	0	8	0	4	12	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	93	4	1	2	2	0	0	9	0	4	13	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	32	31	14	34	32	9	15	0	0	9	0	0
Stage 1	22	22	-	9	9	-	-	-	-	-	-	-
Stage 2	10	9	-	25	23	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	976	862	1066	973	861	1073	1603	-	-	1611	-	-
Stage 1	996	877	-	1012	888	-	-	-	-	-	-	-
Stage 2	1011	888	-	993	876	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	972	859	1066	966	858	1073	1603	-	-	1611	-	-
Mov Cap-2 Maneuver	972	859	-	966	858	-	-	-	-	-	-	-
Stage 1	996	874	-	1012	888	-	-	-	-	-	-	-
Stage 2	1009	888	-	984	873	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		9			0			1.6			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1603	-	-	967	909	1611	-	-				
HCM Lane V/C Ratio	-	-	-	0.102	0.005	0.003	-	-				
HCM Control Delay (s)	0	-	-	9.1	9	7.2	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.3	0	0	-	-				

Intersection

Int Delay, s/veh 2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	66	39	13	36	9
Future Vol, veh/h	0	66	39	13	36	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	72	42	14	39	10

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	56	0	0 121 49
Stage 1	-	-	- 49 -
Stage 2	-	-	- 72 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1549	-	- 874 1020
Stage 1	-	-	- 973 -
Stage 2	-	-	- 951 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1549	-	- 874 1020
Mov Cap-2 Maneuver	-	-	- 874 -
Stage 1	-	-	- 973 -
Stage 2	-	-	- 951 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1549	-	-	-	900
HCM Lane V/C Ratio	-	-	-	-	0.054
HCM Control Delay (s)	0	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	103	0	0	44	0	0	0	1	7	0	1
Future Vol, veh/h	22	103	0	0	44	0	0	0	1	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	112	0	0	48	0	0	0	1	8	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	112	0	0	209	208	112	209	208	48
Stage 1	-	-	-	-	-	-	160	160	-	48	48	-
Stage 2	-	-	-	-	-	-	49	48	-	161	160	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1559	-	-	1478	-	-	748	689	941	748	689	1021
Stage 1	-	-	-	-	-	-	842	766	-	965	855	-
Stage 2	-	-	-	-	-	-	964	855	-	841	766	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1559	-	-	1478	-	-	738	678	941	738	678	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	738	678	-	738	678	-
Stage 1	-	-	-	-	-	-	829	754	-	950	855	-
Stage 2	-	-	-	-	-	-	963	855	-	827	754	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.3			0			8.8			9.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	941	1559	-	-	1478	-	-	764				
HCM Lane V/C Ratio	0.001	0.015	-	-	-	-	-	0.011				
HCM Control Delay (s)	8.8	7.3	0	-	0	-	-	9.8				
HCM Lane LOS	A	A	A	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0				

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	103	45	0	22	7
Future Vol, veh/h	0	103	45	0	22	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, %	2	2	2	2	2	2
Mvmt Flow	0	112	49	0	24	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	49	0	161
Stage 1	-	-	49
Stage 2	-	-	112
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1558	-	830
Stage 1	-	-	973
Stage 2	-	-	913
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1558	-	830
Mov Cap-2 Maneuver	-	-	830
Stage 1	-	-	973
Stage 2	-	-	913

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1558	-	-	-	869
HCM Lane V/C Ratio	-	-	-	-	0.036
HCM Control Delay (s)	0	-	-	-	9.3
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Appendix U

Solar Farm Average Operations Traffic Generation Rates

Solar Farm Average Operations Phase Traffic Generation Rates

After construction completion, the solar projects will change to an operations phase with fewer employees and thus the project will generation less traffic. Some of the other solar projects did not have traffic identified for the operations phase; therefore, an average traffic generation operations rate was calculated based on the number of megawatts (MW). The following tables lists the traffic generation associated with each cumulative project and the associated MW.

Project	Operations			Operations AM				Operations PM			
	Mega Watts	ADT	ADT / MW	IN	OUT			IN	OUT		
					IN/MW	OUT/MW			IN/MW	OUT/MW	
Centinela	275	21	0.08	4	0.01	3	0.01	3	0.01	4	0.01
Imperial Solar South	200	15	0.08	2	0.01	2	0.01	2	0.01	2	0.01
Imperial Solar West	250	15	0.06	2	0.01	2	0.01	2	0.01	2	0.01
Mt Signal	200	20	0.10	7	0.04	1	0.01	7	0.04	1	0.01
Average Operation Rates/MW			0.08		0.02	0.01			0.02	0.01	

The above operation rates were used to calculated the traffic associated with the following cumulative projects during their operations phase.

MW		ADT	IN	OUT	IN	OUT
<u>Proposed Cumulative Projects</u>						
Big Rock and Laurel Solar	200	16	3	2	3	2
Calexico I-A	100	8	2	1	2	1
Calexico I-B	100	8	2	1	2	1
Calexico 2-A	100	8	2	1	2	1
Centinela Phase 2	100	8	2	1	2	1
Iris Solar Cluster	360	28	6	3	6	3
Vega Solar	100	8	2	1	2	1
Wistaria	250	19	4	2	4	2

Appendix V

Year 2027 + Project Construction + Cumulative Intersection LOS Calculations

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰	↱		↰			↱	
Traffic Vol, veh/h	0	0	0	57	0	109	14	118	0	0	187	81
Future Vol, veh/h	0	0	0	57	0	109	14	118	0	0	187	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	62	0	118	15	128	0	0	203	88
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				405	449	128	291	0	-	-	-	0
Stage 1				158	158	-	-	-	-	-	-	-
Stage 2				247	291	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				602	505	922	1271	-	0	0	-	-
Stage 1				871	767	-	-	-	0	0	-	-
Stage 2				794	672	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				594	0	922	1271	-	-	-	-	-
Mov Cap-2 Maneuver				594	0	-	-	-	-	-	-	-
Stage 1				860	0	-	-	-	-	-	-	-
Stage 2				794	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10.3		0.8		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1271	-	594	922	-	-						
HCM Lane V/C Ratio	0.012	-	0.104	0.129	-	-						
HCM Control Delay (s)	7.9	0	11.8	9.5	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile O(veh)	0	-	0.3	0.4	-	-						

AM 2027 + Cumulative
2: Forrester Road & I-8 EB Ramp

HCM 2010 TWSC

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱					↰			↰	
Traffic Vol, veh/h	68	1	13	0	0	0	0	67	29	121	117	0
Future Vol, veh/h	68	1	13	0	0	0	0	67	29	121	117	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	1	14	0	0	0	0	73	32	132	127	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	480	496	127				-	0	0	105	0	0
Stage 1	391	391	-				-	-	-	-	-	-
Stage 2	89	105	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	545	475	923				0	-	-	1486	-	0
Stage 1	683	607	-				0	-	-	-	-	0
Stage 2	934	808	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	493	0	923				-	-	-	1486	-	-
Mov Cap-2 Maneuver	493	0	-				-	-	-	-	-	-
Stage 1	617	0	-				-	-	-	-	-	-
Stage 2	934	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	12.9						0		3.9			
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	493	923	1486	-						
HCM Lane V/C Ratio	-	-	0.152	0.015	0.089	-						
HCM Control Delay (s)	-	-	13.6	9	7.7	0						
HCM Lane LOS	-	-	B	A	A	A						
HCM 95th %tile O(veh)	-	-	0.5	0	0.3	-						

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	16	2	1	18	39	5	4	1	99	8	23
Future Vol, veh/h	22	16	2	1	18	39	5	4	1	99	8	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	17	2	1	20	42	5	4	1	108	9	25
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	62	0	0	19	0	0	126	130	18	112	110	41
Stage 1	-	-	-	-	-	-	66	66	-	43	43	-
Stage 2	-	-	-	-	-	-	60	64	-	69	67	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1541	-	-	1597	-	-	848	761	1061	866	780	1030
Stage 1	-	-	-	-	-	-	945	840	-	971	859	-
Stage 2	-	-	-	-	-	-	951	842	-	941	839	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1541	-	-	1597	-	-	810	748	1061	850	767	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	810	748	-	850	767	-
Stage 1	-	-	-	-	-	-	930	827	-	955	858	-
Stage 2	-	-	-	-	-	-	918	841	-	920	826	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.1			0.1			9.6			9.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	802	1541	-	-	1597	-	-	871				
HCM Lane V/C Ratio	0.014	0.016	-	-	0.001	-	-	0.162				
HCM Control Delay (s)	9.6	7.4	0	-	7.3	0	-	9.9				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0.6				

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	1	0	2	0	1	1	1	0	0	0
Future Vol, veh/h	0	2	1	0	2	0	1	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	1	0	2	0	1	1	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	3	0	0	5	5	3	6	5	2
Stage 1	-	-	-	-	-	-	3	3	-	2	2	-
Stage 2	-	-	-	-	-	-	2	2	-	4	3	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1620	-	-	1619	-	-	1016	890	1081	1014	890	1082
Stage 1	-	-	-	-	-	-	1020	893	-	1021	894	-
Stage 2	-	-	-	-	-	-	1021	894	-	1018	893	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1620	-	-	1619	-	-	1016	890	1081	1012	890	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	1016	890	-	1012	890	-
Stage 1	-	-	-	-	-	-	1020	893	-	1021	894	-
Stage 2	-	-	-	-	-	-	1021	894	-	1016	893	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			8.7			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	989	1620	-	-	1619	-	-	-				
HCM Lane V/C Ratio	0.003	-	-	-	-	-	-	-				
HCM Control Delay (s)	8.7	0	-	-	0	-	-	0				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-				

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	0	1	0	4	0	17	0	7	20	3
Future Vol, veh/h	5	1	0	1	0	4	0	17	0	7	20	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	1	0	1	0	4	0	18	0	8	22	3
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	60	58	24	58	59	18	25	0	0	18	0	0
Stage 1	40	40	-	18	18	-	-	-	-	-	-	-
Stage 2	20	18	-	40	41	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	936	833	1052	939	832	1061	1589	-	-	1599	-	-
Stage 1	975	862	-	1001	880	-	-	-	-	-	-	-
Stage 2	999	880	-	975	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	929	829	1052	934	828	1061	1589	-	-	1599	-	-
Mov Cap-2 Maneuver	929	829	-	934	828	-	-	-	-	-	-	-
Stage 1	975	858	-	1001	880	-	-	-	-	-	-	-
Stage 2	995	880	-	969	857	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9		8.5		0		1.7					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1589	-	-	911 1033	1599	-	-					
HCM Lane V/C Ratio	-	-	-	0.007 0.005	0.005	-	-					
HCM Control Delay (s)	0	-	-	9 8.5	7.3	0	-					
HCM Lane LOS	A	-	-	A A	A	A	-					
HCM 95th %tile O(veh)	0	-	-	0 0	0	-	-					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	39	51	6	2	6
Future Vol, veh/h	4	39	51	6	2	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, %	2	2	2	2	2	2
Mvmt Flow	4	42	55	7	2	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	62	0	-	0	109	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1541	-	-	-	888	1007
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1541	-	-	-	885	1007
Mov Cap-2 Maneuver	-	-	-	-	885	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	972	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1541	-	-	-	973	
HCM Lane V/C Ratio	0.003	-	-	-	0.009	
HCM Control Delay (s)	7.3	0	-	-	8.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	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	0	42	0	1	45	0	14	1	1	0	0	0
Future Vol, veh/h	0	42	0	1	45	0	14	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	46	0	1	49	0	15	1	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	46	0	0	97	97	46	98	97	49
Stage 1	-	-	-	-	-	-	46	46	-	51	51	-
Stage 2	-	-	-	-	-	-	51	51	-	47	46	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1558	-	-	1562	-	-	885	793	1023	884	793	1020
Stage 1	-	-	-	-	-	-	968	857	-	962	852	-
Stage 2	-	-	-	-	-	-	962	852	-	967	857	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1562	-	-	884	792	1023	881	792	1020
Mov Cap-2 Maneuver	-	-	-	-	-	-	884	792	-	881	792	-
Stage 1	-	-	-	-	-	-	968	857	-	962	851	-
Stage 2	-	-	-	-	-	-	961	851	-	965	857	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			9.1			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	885	1558	-	-	1562	-	-	-				
HCM Lane V/C Ratio	0.02	-	-	-	0.001	-	-	-				
HCM Control Delay (s)	9.1	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	42	60	0	0	0
Future Vol, veh/h	0	42	60	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	46	65	0	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	65	0	-	0	111	65
Stage 1	-	-	-	-	65	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1537	-	-	-	886	999
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	976	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1537	-	-	-	886	999
Mov Cap-2 Maneuver	-	-	-	-	886	-
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	976	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1537	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

PM 2027 + Cumulative
1: Forrester Road & I-8 WB Ramp

HCM 2010 TWSC

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	28	0	119	12	154	0	0	251	65
Future Vol, veh/h	0	0	0	28	0	119	12	154	0	0	251	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	30	0	129	13	167	0	0	273	71
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				502	537	167	344	0	-	-	-	0
Stage 1				193	193	-	-	-	-	-	-	-
Stage 2				309	344	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				529	450	877	1215	-	0	0	-	-
Stage 1				840	741	-	-	-	0	0	-	-
Stage 2				745	637	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				523	0	877	1215	-	-	-	-	-
Mov Cap-2 Maneuver				523	0	-	-	-	-	-	-	-
Stage 1				830	0	-	-	-	-	-	-	-
Stage 2				745	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10.3		0.6		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1215	-	523	877	-	-						
HCM Lane V/C Ratio	0.011	-	0.058	0.147	-	-						
HCM Control Delay (s)	8	0	12.3	9.8	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile O(veh)	0	-	0.2	0.5	-	-						

PM 2027 + Cumulative
2: Forrester Road & I-8 EB Ramp

HCM 2010 TWSC

Intersection													
Int Delay, s/veh	7.7												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕	↗					↖			↕		
Traffic Vol, veh/h	101	0	5	0	0	0	0	63	30	221	59	0	
Future Vol, veh/h	101	0	5	0	0	0	0	63	30	221	59	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	110	0	5	0	0	0	0	68	33	240	64	0	
Major/Minor	Minor2			Major1				Major2					
Conflicting Flow All	629	645	64					-	0	0	101	0	0
Stage 1	544	544	-					-	-	-	-	-	-
Stage 2	85	101	-					-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22					-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-					-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-					-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318					-	-	-	2.218	-	-
Pot Cap-1 Maneuver	446	391	1000					0	-	-	1491	-	0
Stage 1	582	519	-					0	-	-	-	-	0
Stage 2	938	811	-					0	-	-	-	-	0
Platoon blocked, %								-	-	-			
Mov Cap-1 Maneuver	372	0	1000					-	-	-	1491	-	-
Mov Cap-2 Maneuver	372	0	-					-	-	-	-	-	-
Stage 1	485	0	-					-	-	-	-	-	-
Stage 2	938	0	-					-	-	-	-	-	-
Approach	EB			NB				SB					
HCM Control Delay, s	18.2			0				6.2					
HCM LOS	C												
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT							
Capacity (veh/h)	-	-	372	1000	1491	-							
HCM Lane V/C Ratio	-	-	0.295	0.005	0.161	-							
HCM Control Delay (s)	-	-	18.7	8.6	7.9	0							
HCM Lane LOS	-	-	C	A	A	A							
HCM 95th %tile Q(veh)	-	-	1.2	0	0.6	-							

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	32	35	1	0	8	51	6	6	1	61	1	14
Future Vol, veh/h	32	35	1	0	8	51	6	6	1	61	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	38	1	0	9	55	7	7	1	66	1	15
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	64	0	0	39	0	0	154	173	39	150	146	37
Stage 1	-	-	-	-	-	-	109	109	-	37	37	-
Stage 2	-	-	-	-	-	-	45	64	-	113	109	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1538	-	-	1571	-	-	813	720	1033	818	745	1035
Stage 1	-	-	-	-	-	-	896	805	-	978	864	-
Stage 2	-	-	-	-	-	-	969	842	-	892	805	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1538	-	-	1571	-	-	786	703	1033	797	728	1035
Mov Cap-2 Maneuver	-	-	-	-	-	-	786	703	-	797	728	-
Stage 1	-	-	-	-	-	-	875	786	-	956	864	-
Stage 2	-	-	-	-	-	-	954	842	-	863	786	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.5			0			9.8			9.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	759	1538	-	-	1571	-	-	831				
HCM Lane V/C Ratio	0.019	0.023	-	-	-	-	-	0.099				
HCM Control Delay (s)	9.8	7.4	0	-	0	-	-	9.8				
HCM Lane LOS	A	A	A	-	A	-	-	A				
HCM 95th %tile O(veh)	0.1	0.1	-	-	0	-	-	0.3				

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	0	5	0	1	2	0	0	0	0	1	0	0
Future Vol, veh/h	0	5	0	1	2	0	0	0	0	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	0	1	2	0	0	0	0	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	5	0	0	9	9	5	9	9	2
Stage 1	-	-	-	-	-	-	5	5	-	4	4	-
Stage 2	-	-	-	-	-	-	4	4	-	5	5	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1620	-	-	1616	-	-	1010	886	1078	1010	886	1082
Stage 1	-	-	-	-	-	-	1017	892	-	1018	892	-
Stage 2	-	-	-	-	-	-	1018	892	-	1017	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1616	-	-	1009	885	1078	1009	885	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	1009	885	-	1009	885	-
Stage 1	-	-	-	-	-	-	1017	892	-	1018	891	-
Stage 2	-	-	-	-	-	-	1017	891	-	1017	892	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.4			0			8.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1620	-	-	1616	-	-	1009				
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	0.001				
HCM Control Delay (s)	0	0	-	-	7.2	0	-	8.6				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	4	1	2	2	3	0	13	0	7	17	1
Future Vol, veh/h	1	4	1	2	2	3	0	13	0	7	17	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	4	1	2	2	3	0	14	0	8	18	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	52	49	19	51	49	14	19	0	0	14	0	0
Stage 1	35	35	-	14	14	-	-	-	-	-	-	-
Stage 2	17	14	-	37	35	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	947	843	1059	948	843	1066	1597	-	-	1604	-	-
Stage 1	981	866	-	1006	884	-	-	-	-	-	-	-
Stage 2	1002	884	-	978	866	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	938	839	1059	939	839	1066	1597	-	-	1604	-	-
Mov Cap-2 Maneuver	938	839	-	939	839	-	-	-	-	-	-	-
Stage 1	981	862	-	1006	884	-	-	-	-	-	-	-
Stage 2	996	884	-	967	862	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		8.8			0			2			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1597	-	-	885	955	1604	-	-				
HCM Lane V/C Ratio	-	-	-	0.007	0.008	0.005	-	-				
HCM Control Delay (s)	0	-	-	9.1	8.8	7.3	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0	0	0	-	-				

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	66	32	12	8	2
Future Vol, veh/h	0	66	32	12	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	72	35	13	9	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	48	0	0 114 42
Stage 1	-	-	- 42 -
Stage 2	-	-	- 72 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1559	-	- 882 1029
Stage 1	-	-	- 980 -
Stage 2	-	-	- 951 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1559	-	- 882 1029
Mov Cap-2 Maneuver	-	-	- 882 -
Stage 1	-	-	- 980 -
Stage 2	-	-	- 951 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1559	-	-	-	908
HCM Lane V/C Ratio	-	-	-	-	0.012
HCM Control Delay (s)	0	-	-	-	9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	75	0	0	43	0	0	0	1	0	0	1
Future Vol, veh/h	0	75	0	0	43	0	0	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	82	0	0	47	0	0	0	1	0	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	82	0	0	130	129	82	130	129	47
Stage 1	-	-	-	-	-	-	82	82	-	47	47	-
Stage 2	-	-	-	-	-	-	48	47	-	83	82	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1560	-	-	1515	-	-	843	762	978	843	762	1022
Stage 1	-	-	-	-	-	-	926	827	-	967	856	-
Stage 2	-	-	-	-	-	-	965	856	-	925	827	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1560	-	-	1515	-	-	842	762	978	842	762	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	842	762	-	842	762	-
Stage 1	-	-	-	-	-	-	926	827	-	967	856	-
Stage 2	-	-	-	-	-	-	964	856	-	924	827	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			8.7			8.5		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	978	1560	-	-	1515	-	-	1022				
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	0.001				
HCM Control Delay (s)	8.7	0	-	-	0	-	-	8.5				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	75	44	0	0	0
Future Vol, veh/h	0	75	44	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	82	48	0	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	48	0	-	0	130	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	82	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1559	-	-	-	864	1021
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	941	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1559	-	-	-	864	1021
Mov Cap-2 Maneuver	-	-	-	-	864	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	941	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1559	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	93	0	109	14	118	0	0	209	81
Future Vol, veh/h	0	0	0	93	0	109	14	118	0	0	209	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	101	0	118	15	128	0	0	227	88
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				429	473	128	315	0	-	-	-	0
Stage 1				158	158	-	-	-	-	-	-	-
Stage 2				271	315	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				583	490	922	1245	-	0	0	-	-
Stage 1				871	767	-	-	-	0	0	-	-
Stage 2				775	656	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				575	0	922	1245	-	-	-	-	-
Mov Cap-2 Maneuver				575	0	-	-	-	-	-	-	-
Stage 1				860	0	-	-	-	-	-	-	-
Stage 2				775	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10.9		0.8		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1245	-	575	922	-	-						
HCM Lane V/C Ratio	0.012	-	0.176	0.129	-	-						
HCM Control Delay (s)	7.9	0	12.6	9.5	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile O(veh)	0	-	0.6	0.4	-	-						

AM 2027 + Cumulative + Project
2: Forrester Road & I-8 EB Ramp

HCM 2010 TWSC

Intersection													
Int Delay, s/veh	4.3												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕	↗					↖			↕		
Traffic Vol, veh/h	68	1	13	0	0	0	0	67	30	121	175	0	
Future Vol, veh/h	68	1	13	0	0	0	0	67	30	121	175	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	74	1	14	0	0	0	0	73	33	132	190	0	
Major/Minor	Minor2			Major1				Major2					
Conflicting Flow All	544	560	190					-	0	0	106	0	0
Stage 1	454	454	-					-	-	-	-	-	-
Stage 2	90	106	-					-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22					-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-					-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-					-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318					-	-	-	2.218	-	-
Pot Cap-1 Maneuver	500	437	852					0	-	-	1485	-	0
Stage 1	640	569	-					0	-	-	-	-	0
Stage 2	934	807	-					0	-	-	-	-	0
Platoon blocked, %								-	-	-			
Mov Cap-1 Maneuver	451	0	852					-	-	-	1485	-	-
Mov Cap-2 Maneuver	451	0	-					-	-	-	-	-	-
Stage 1	577	0	-					-	-	-	-	-	-
Stage 2	934	0	-					-	-	-	-	-	-
Approach	EB			NB				SB					
HCM Control Delay, s	13.8			0				3.1					
HCM LOS	B												
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT							
Capacity (veh/h)	-	-	451	852	1485	-							
HCM Lane V/C Ratio	-	-	0.166	0.017	0.089	-							
HCM Control Delay (s)	-	-	14.6	9.3	7.7	0							
HCM Lane LOS	-	-	B	A	A	A							
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0.3	-							

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	17	2	1	47	39	5	4	1	99	8	81
Future Vol, veh/h	23	17	2	1	47	39	5	4	1	99	8	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	18	2	1	51	42	5	4	1	108	9	88
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	20	0	0	192	164	19	146	144	72
Stage 1	-	-	-	-	-	-	69	69	-	74	74	-
Stage 2	-	-	-	-	-	-	123	95	-	72	70	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1501	-	-	1596	-	-	768	729	1059	823	747	990
Stage 1	-	-	-	-	-	-	941	837	-	935	833	-
Stage 2	-	-	-	-	-	-	881	816	-	938	837	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1501	-	-	1596	-	-	684	716	1059	807	734	990
Mov Cap-2 Maneuver	-	-	-	-	-	-	684	716	-	807	734	-
Stage 1	-	-	-	-	-	-	925	823	-	919	832	-
Stage 2	-	-	-	-	-	-	793	815	-	916	823	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.1			0.1			10.1			10.4		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	723	1501	-	-	1596	-	-	873				
HCM Lane V/C Ratio	0.015	0.017	-	-	0.001	-	-	0.234				
HCM Control Delay (s)	10.1	7.4	0	-	7.3	0	-	10.4				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.9				

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	3	1	43	45	0	1	1	2	0	0	0
Future Vol, veh/h	0	3	1	43	45	0	1	1	2	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	1	47	49	0	1	1	2	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	4	0	0	147	147	4	148	147	49
Stage 1	-	-	-	-	-	-	4	4	-	143	143	-
Stage 2	-	-	-	-	-	-	143	143	-	5	4	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1558	-	-	1618	-	-	821	744	1080	820	744	1020
Stage 1	-	-	-	-	-	-	1018	892	-	860	779	-
Stage 2	-	-	-	-	-	-	860	779	-	1017	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1618	-	-	802	722	1080	799	722	1020
Mov Cap-2 Maneuver	-	-	-	-	-	-	802	722	-	799	722	-
Stage 1	-	-	-	-	-	-	1018	892	-	860	756	-
Stage 2	-	-	-	-	-	-	834	756	-	1014	892	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.6			9.1			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	892	1558	-	-	1618	-	-	-				
HCM Lane V/C Ratio	0.005	-	-	-	0.029	-	-	-				
HCM Control Delay (s)	9.1	0	-	-	7.3	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	-				

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	7	1	0	1	0	4	0	17	0	7	20	89
Future Vol, veh/h	7	1	0	1	0	4	0	17	0	7	20	89
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1	0	1	0	4	0	18	0	8	22	97
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	107	105	71	105	153	18	119	0	0	18	0	0
Stage 1	87	87	-	18	18	-	-	-	-	-	-	-
Stage 2	20	18	-	87	135	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	872	785	991	875	739	1061	1469	-	-	1599	-	-
Stage 1	921	823	-	1001	880	-	-	-	-	-	-	-
Stage 2	999	880	-	921	785	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	865	781	991	871	735	1061	1469	-	-	1599	-	-
Mov Cap-2 Maneuver	865	781	-	871	735	-	-	-	-	-	-	-
Stage 1	921	819	-	1001	880	-	-	-	-	-	-	-
Stage 2	995	880	-	915	781	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.3		8.6		0		0.4					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1469	-	-	854	1017	1599	-	-				
HCM Lane V/C Ratio	-	-	-	0.01	0.005	0.005	-	-				
HCM Control Delay (s)	0	-	-	9.3	8.6	7.3	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	46	51	35	3	6
Future Vol, veh/h	11	46	51	35	3	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, %	2	2	2	2	2	2
Mvmt Flow	12	50	55	38	3	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	93	0	-	0	148	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	74	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1501	-	-	-	844	988
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	949	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1501	-	-	-	837	988
Mov Cap-2 Maneuver	-	-	-	-	837	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	949	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		8.9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1501	-	-	-	932	
HCM Lane V/C Ratio	0.008	-	-	-	0.01	
HCM Control Delay (s)	7.4	0	-	-	8.9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	43	0	1	74	7	14	1	1	0	0	22
Future Vol, veh/h	0	43	0	1	74	7	14	1	1	0	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	47	0	1	80	8	15	1	1	0	0	24
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	88	0	0	47	0	0	145	137	47	134	133	84
Stage 1	-	-	-	-	-	-	47	47	-	86	86	-
Stage 2	-	-	-	-	-	-	98	90	-	48	47	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1508	-	-	1560	-	-	824	754	1022	838	758	975
Stage 1	-	-	-	-	-	-	967	856	-	922	824	-
Stage 2	-	-	-	-	-	-	908	820	-	965	856	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1508	-	-	1560	-	-	803	753	1022	835	757	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	803	753	-	835	757	-
Stage 1	-	-	-	-	-	-	967	856	-	922	823	-
Stage 2	-	-	-	-	-	-	885	819	-	963	856	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			9.5			8.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	810	1508	-	-	1560	-	-	975				
HCM Lane V/C Ratio	0.021	-	-	-	0.001	-	-	0.025				
HCM Control Delay (s)	9.5	0	-	-	7.3	0	-	8.8				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	43	89	22	0	0
Future Vol, veh/h	7	43	89	22	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	47	97	24	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	121	0	-	0	172	109
Stage 1	-	-	-	-	109	-
Stage 2	-	-	-	-	63	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1467	-	-	-	818	945
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	960	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1467	-	-	-	813	945
Mov Cap-2 Maneuver	-	-	-	-	813	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	960	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1467	-	-	-	-	
HCM Lane V/C Ratio	0.005	-	-	-	-	
HCM Control Delay (s)	7.5	0	-	-	0	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷		↶			↷	
Traffic Vol, veh/h	0	0	0	29	0	119	12	176	0	0	251	65
Future Vol, veh/h	0	0	0	29	0	119	12	176	0	0	251	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	32	0	129	13	191	0	0	273	71
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				526	561	191	344	0	-	-	-	0
Stage 1				217	217	-	-	-	-	-	-	-
Stage 2				309	344	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				512	436	851	1215	-	0	0	-	-
Stage 1				819	723	-	-	-	0	0	-	-
Stage 2				745	637	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				506	0	851	1215	-	-	-	-	-
Mov Cap-2 Maneuver				506	0	-	-	-	-	-	-	-
Stage 1				809	0	-	-	-	-	-	-	-
Stage 2				745	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				10.5		0.5		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1215	-	506	851	-	-						
HCM Lane V/C Ratio	0.011	-	0.062	0.152	-	-						
HCM Control Delay (s)	8	0	12.6	10	-	-						
HCM Lane LOS	A	A	B	B	-	-						
HCM 95th %tile O(veh)	0	-	0.2	0.5	-	-						

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕			↕	
Traffic Vol, veh/h	101	0	5	0	0	0	0	85	66	221	60	0
Future Vol, veh/h	101	0	5	0	0	0	0	85	66	221	60	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	0	5	0	0	0	0	92	72	240	65	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	673	709	65				-	0	0	164	0	0
Stage 1	545	545	-				-	-	-	-	-	-
Stage 2	128	164	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	421	359	999				0	-	-	1414	-	0
Stage 1	581	519	-				0	-	-	-	-	0
Stage 2	898	762	-				0	-	-	-	-	0
Platoon blocked, %							-	-	-			
Mov Cap-1 Maneuver	347	0	999				-	-	-	1414	-	-
Mov Cap-2 Maneuver	347	0	-				-	-	-	-	-	-
Stage 1	479	0	-				-	-	-	-	-	-
Stage 2	898	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	19.6						0		6.3			
HCM LOS	C											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	EBLn2	SBL	SBT					
Capacity (veh/h)		-	-	347	999	1414	-					
HCM Lane V/C Ratio		-	-	0.316	0.005	0.17	-					
HCM Control Delay (s)		-	-	20.1	8.6	8.1	0					
HCM Lane LOS		-	-	C	A	A	A					
HCM 95th %tile O(veh)		-	-	1.3	0	0.6	-					

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	90	64	1	0	9	51	6	6	1	61	1	15
Future Vol, veh/h	90	64	1	0	9	51	6	6	1	61	1	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	98	70	1	0	10	55	7	7	1	66	1	16
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	71	0	0	313	332	71	309	305	38
Stage 1	-	-	-	-	-	-	267	267	-	38	38	-
Stage 2	-	-	-	-	-	-	46	65	-	271	267	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1537	-	-	1529	-	-	640	588	991	643	608	1034
Stage 1	-	-	-	-	-	-	738	688	-	977	863	-
Stage 2	-	-	-	-	-	-	968	841	-	735	688	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1537	-	-	1529	-	-	597	549	991	604	568	1034
Mov Cap-2 Maneuver	-	-	-	-	-	-	597	549	-	604	568	-
Stage 1	-	-	-	-	-	-	689	643	-	913	863	-
Stage 2	-	-	-	-	-	-	952	841	-	679	643	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.4			0			11.2			11.3		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	591	1537	-	-	1529	-	-	657				
HCM Lane V/C Ratio	0.024	0.064	-	-	-	-	-	0.127				
HCM Control Delay (s)	11.2	7.5	0	-	0	-	-	11.3				
HCM Lane LOS	B	A	A	-	A	-	-	B				
HCM 95th %tile O(veh)	0.1	0.2	-	-	0	-	-	0.4				

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	48	0	2	3	0	0	0	43	1	0	0
Future Vol, veh/h	0	48	0	2	3	0	0	0	43	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	52	0	2	3	0	0	0	47	1	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	52	0	0	59	59	52	83	59	3
Stage 1	-	-	-	-	-	-	52	52	-	7	7	-
Stage 2	-	-	-	-	-	-	7	7	-	76	52	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1619	-	-	1554	-	-	937	832	1016	904	832	1081
Stage 1	-	-	-	-	-	-	961	852	-	1015	890	-
Stage 2	-	-	-	-	-	-	1015	890	-	933	852	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1619	-	-	1554	-	-	936	831	1016	862	831	1081
Mov Cap-2 Maneuver	-	-	-	-	-	-	936	831	-	862	831	-
Stage 1	-	-	-	-	-	-	961	852	-	1015	889	-
Stage 2	-	-	-	-	-	-	1014	889	-	890	852	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.9			8.7			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	1016	1619	-	-	1554	-	-	862				
HCM Lane V/C Ratio	0.046	-	-	-	0.001	-	-	0.001				
HCM Control Delay (s)	8.7	0	-	-	7.3	0	-	9.2				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	87	4	1	2	2	3	0	13	0	7	17	3
Future Vol, veh/h	87	4	1	2	2	3	0	13	0	7	17	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	4	1	2	2	3	0	14	0	8	18	3
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	53	50	20	52	51	14	21	0	0	14	0	0
Stage 1	36	36	-	14	14	-	-	-	-	-	-	-
Stage 2	17	14	-	38	37	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	946	841	1058	947	840	1066	1595	-	-	1604	-	-
Stage 1	980	865	-	1006	884	-	-	-	-	-	-	-
Stage 2	1002	884	-	977	864	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	937	837	1058	938	836	1066	1595	-	-	1604	-	-
Mov Cap-2 Maneuver	937	837	-	938	836	-	-	-	-	-	-	-
Stage 1	980	861	-	1006	884	-	-	-	-	-	-	-
Stage 2	996	884	-	966	860	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.3		8.8			0			1.9			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1595	-	-	933	954	1604	-	-				
HCM Lane V/C Ratio	-	-	-	0.107	0.008	0.005	-	-				
HCM Control Delay (s)	0	-	-	9.3	8.8	7.3	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.4	0	0	-	-				

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	66	39	13	37	9
Future Vol, veh/h	0	66	39	13	37	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	72	42	14	40	10
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	56	0	-	0	121	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	72	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1549	-	-	-	874	1020
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	951	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1549	-	-	-	874	1020
Mov Cap-2 Maneuver	-	-	-	-	874	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	951	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1549	-	-	-	899	
HCM Lane V/C Ratio	-	-	-	-	0.056	
HCM Control Delay (s)	0	-	-	-	9.2	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	104	0	0	44	0	0	0	1	7	0	1
Future Vol, veh/h	22	104	0	0	44	0	0	0	1	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	113	0	0	48	0	0	0	1	8	0	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	113	0	0	210	209	113	210	209	48
Stage 1	-	-	-	-	-	-	161	161	-	48	48	-
Stage 2	-	-	-	-	-	-	49	48	-	162	161	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1559	-	-	1476	-	-	747	688	940	747	688	1021
Stage 1	-	-	-	-	-	-	841	765	-	965	855	-
Stage 2	-	-	-	-	-	-	964	855	-	840	765	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1559	-	-	1476	-	-	737	677	940	737	677	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	737	677	-	737	677	-
Stage 1	-	-	-	-	-	-	828	753	-	950	855	-
Stage 2	-	-	-	-	-	-	963	855	-	826	753	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.3			0			8.8			9.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	940	1559	-	-	1476	-	-	764				
HCM Lane V/C Ratio	0.001	0.015	-	-	-	-	-	0.011				
HCM Control Delay (s)	8.8	7.3	0	-	0	-	-	9.8				
HCM Lane LOS	A	A	A	-	A	-	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0				

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	104	45	0	22	7
Future Vol, veh/h	0	104	45	0	22	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, %	2	2	2	2	2	2
Mvmt Flow	0	113	49	0	24	8
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	49	0	-	0	162	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	113	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1558	-	-	-	829	1020
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1558	-	-	-	829	1020
Mov Cap-2 Maneuver	-	-	-	-	829	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	912	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1558	-	-	-	868	
HCM Lane V/C Ratio	-	-	-	-	0.036	
HCM Control Delay (s)	0	-	-	-	9.3	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	