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March 4, 2024

Mr. Robert Curley
Insignia Environmental
545 Middlefield Road, Suite 210
Menlo Park, CA 94025

LLG Reference: 3-23-3862

Subject: **Alberhill System Project**
City of Temecula, CA

Dear Mr. Curley:

INTRODUCTION / PURPOSE OF REPORT

Linscott, Law & Greenspan, Engineers (LLG) completed a traffic study for the Alberhill System Project (Proposed Project or ASP) dated January 11, 2016. Since that time the project has changed such that the number of construction trips has increased by a relatively small amount. This traffic letter report is a refinement of the original 2016 analysis and the purpose is to determine if any new significant transportation impacts would occur or if any significant increase in the severity of impacts would occur. Included in this report are the following:

- Project Description
- Existing Conditions
- Project Trip Generation
- Project Trip Distribution / Assignment
- Analysis Results
- Mitigation Measures
- Comparison to 2016 Traffic Study

Figure 1 shows the project area map (note: all figures have been provided at the end of this report).

Attachment A contains the ASP traffic study, dated January 11, 2016.

PROJECT DESCRIPTION

The ASP would serve the cities of Lake Elsinore, Canyon Lake, Perris, Menifee, Murrieta, Hot Springs, Temecula and Wildomar as well as surrounding unincorporated areas of Riverside County. The Alberhill Substation is proposed to be built on approximately 39 to 44 acres of a 124-acre property located north of I-15 and the intersection of Temescal Canyon Road and Concordia Ranch Road. From the

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Alberhill Substation, the proposed transmission lines would traverse several cities within the County of Riverside.

The ASP proposes the following:

- Construction of a 1,120-megavolt ampere (MVA) 500/115 kV substation (Alberhill Substation).
- Construction of two new 500-kV transmission lines (approximately 3.3 miles, combined) within a new ROW to connect the proposed Alberhill Substation to the existing Serrano–Valley 500-kV Transmission Line.
- Double-circuit of approximately 10.6 miles of existing single-circuit 115-kV subtransmission lines with structure replacement primarily in the existing ROW.
- Construction of about 3 miles of single-circuit 115-kV subtransmission lines with distribution lines underbuilt on the subtransmission line structures and removal of about 3 miles of electrical distribution lines within the existing ROW.
- Installation of a second 115-kV circuit on approximately 6.2 miles of existing 115-kV subtransmission lines constructed as part of the Valley–Ivyglen 115 kV Subtransmission Line Project (Valley–Ivyglen Project).
- Installation of approximately 550 feet of new 115 kV underground subtransmission circuit within new duct banks and installation of approximately 4,000 feet of new 115 kV subtransmission circuit within existing duct banks.
- Installation of fiber optic lines (also referred to herein as telecommunications lines) overhead (approximately 9 miles) on sections of the new or modified subtransmission lines and underground (approximately 1 mile) in proximity to the proposed Alberhill Substation and several of the existing 115/12-kV substations.
- Construction of an approximately 120-foot microwave antenna tower at the proposed Alberhill Substation site; installation of microwave telecommunications dish antennas at the proposed Alberhill Substation, the existing Santiago Peak Communications Site, and Serrano Substation; and other telecommunications equipment installations at existing and proposed substations.
- Installation of a new position inside Newcomb Substation to accommodate the new Newcomb-Skylark 115 kV line, and modification to an existing position at Valley Substation to isolate the existing Valley-Newcomb 115 kV line which will be taken out of service as part of the Proposed Project.
- Transfer of 5 of the 14 Valley South 115-kV System substations to the proposed Alberhill 115-kV System: the Ivyglen, Fogarty, Elsinore, Skylark, and Newcomb 115/12-kV substations.

Southern California Edison (SCE) designed the ASP to meet long-term forecasted electrical demand in the Proposed Project area and increase electrical system reliability. SCE estimates that construction of the ASP would take approximately 30 months.

This traffic study analyzes the potential traffic impacts with the construction of the ASP project. The ASP project proposes the construction of the Alberhill Substation and temporary staging areas. Temporary staging areas would be used as a reporting location for workers and to stage equipment and materials during construction. Therefore, the staging areas are considered as the primary access point and the areas where the most traffic-intensive construction activities would occur.

The following substation and staging areas were identified for the ASP:

Alberhill Substation

The Alberhill Substation site is located on Temescal Canyon Road, west of I-15 Frontage Road in the County of Riverside. The Alberhill Substation will also be used as a temporary staging area during the project construction. On the right is an aerial depicting the location of the Alberhill Substation site.

Staging Area ASP1

ASP1 is located on Concordia Ranch Road, west of Lake Street in the County of Riverside. ASP1 is approximately 10.3 acres.

Staging Area ASP2

ASP2 is located on Lake Street, north of I-15 in the County of Riverside. ASP2 is approximately 0.3 acres.

On the right is an aerial depicting the location of ASP1 and ASP2.

Staging Area ASP3

ASP3 is located on Horsethief Canyon Road, south of I-15 in the County of San Diego. ASP3 is approximately 7.4 acres. On the right is an aerial depicting the location of ASP3.

Staging Area ASP4

ASP4 is located on Mission Trail, north of Lemon Street in the City of Lake Elsinore. ASP4 is approximately 6.1 acres.

Staging Area ASP5

ASP5 is located on Corydon Road, west of Mission Trail in the City of Wildomar. ASP5 is approximately 6.2 acres.

Staging Area ASP6

ASP6 is located on Mission Trail, south of Bundy Canyon Road in the City of Wildomar. ASP6 is approximately 3.7 acres.

On the right is an aerial depicting the location of ASP4, ASP5, and ASP6.

Staging Area ASP7

ASP7 is located on Menifee Road, south of SR 74 in the City of Menifee. ASP7 is approximately 10.5 acres. On the right is an aerial depicting the location of ASP7.

Staging Area ASP11

ASP11 is located on Concordia Ranch Road, west of Lake Street in the County of Riverside. ASP11 is approximately 5.9 acres. On the right is an aerial depicting the location of ASP11.

Staging Area ASP12

ASP12 is located on the southwest corner of Collier Avenue and Chaney Street in the City of Lake Elsinore. ASP12 is approximately 5 acres. On the right is an aerial depicting the location of ASP12.

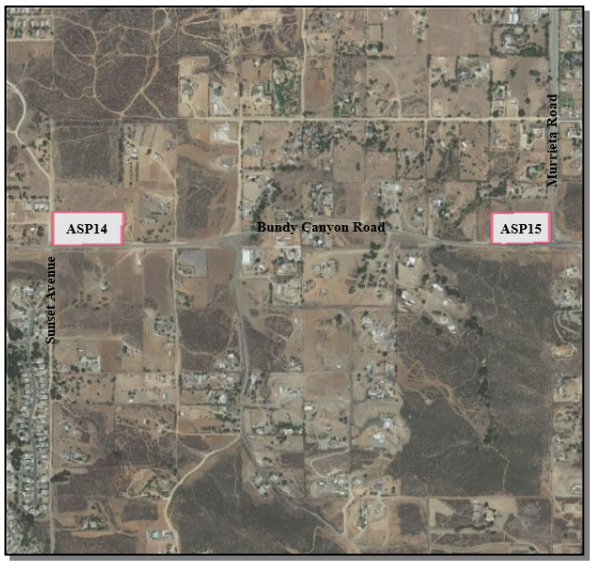
Staging Area ASP14

ASP14 is located on the northeast corner of Bundy Canyon Road and Sunset Avenue in the City of Menifee. ASP14 is approximately 5.9 acres.

Staging Area ASP15

ASP15 is located on the northwest corner of Bundy Canyon Road and Murrieta Road in the City of Menifee. ASP15 is approximately 4.5 acres.

On the right is an aerial depicting the location of ASP14 and ASP15.



Corona Quarry

The Corona Quarry is located on Sherborn Street, south of Magnolia Avenue in the City of Corona. The Quarry will be used as a dirt import site during the project construction. On the right is an aerial depicting the location of the Quarry.

EXISTING CONDITIONS

The study area for the proposed project was developed based on the locations of the temporary staging areas and the anticipated construction traffic assignment (workers and heavy vehicles) which will access them.

This traffic study analyzes twenty-six (26) intersections. These intersections were divided into four (4) zones based on their proximity to a group of staging areas.

Table 1 contains a list of study area intersections within each zone and their governing jurisdiction. ***Figure 2*** shows the study area map.

TABLE 1
STUDY AREA

Zones	Study Intersections	Jurisdiction
Zone 1 – Alberhill Substation and 500kV / 115kV Staging Areas	1. Indian Truck Trail / Temescal Canyon Road	Riverside County
	2. Indian Truck Trail / I-15 Northbound Ramps	Riverside County / Caltrans
	3. Indian Truck Trail / I-15 Southbound Ramps	Riverside County / Caltrans
	4. Indian Truck Trail / Campbell Ranch Road	Riverside County
	5. Horsethief Canyon Road / Temescal Canyon Road	Riverside County
	6. Horsethief Canyon Road / De Palma Road	Riverside County
	7. Concordia Ranch Road / Temescal Canyon Road	Riverside County
	8. Lake Street / I-15 Northbound Ramps	City of Lake Elsinore / Caltrans
	9. Lake Street / I-15 Southbound Ramps	City of Lake Elsinore / Caltrans
	10. Lake Street / Temescal Canyon Road	City of Lake Elsinore
Zone 2 – 115 kV Staging Areas	11. I-15 Northbound Ramps / Railroad Canyon Road	City of Lake Elsinore / Caltrans
	12. I-15 Southbound Ramps / Diamond Drive	City of Lake Elsinore / Caltrans
	13. Diamond Drive / Lakeshore Drive/Mission Trail	City of Lake Elsinore
	14. Mission Trail / Lemon Street	City of Wildomar
	15. Mission Trail / Bundy Canyon Road	City of Wildomar
	16. I-15 Southbound Ramps / Bundy Canyon Road	City of Wildomar / Caltrans
	17. I-15 Northbound Ramps / Bundy Canyon Road	City of Wildomar / Caltrans

TABLE 1
STUDY AREA

Zones	Study Intersections	Jurisdiction
Zone 3 – 115 kV Staging Areas	18. I-215 Northbound Ramps / Matthews Road (SR 74)	City of Perris / Caltrans
	19. Menifee Road / Pinacate Road (SR 74)	City of Menifee / Caltrans
	20. McCall Boulevard / I-215 Southbound Ramps	City of Menifee / Caltrans
	21. McCall Boulevard / I-215 Northbound Ramps	City of Menifee / Caltrans
	22. McCall Boulevard / Menifee Road	City of Menifee
Zone 4 – Corona Quarry	23. I-15 Southbound Ramps / Magnolia Avenue	City of Corona / Caltrans
	24. I-15 Northbound Ramps / Magnolia Avenue	City of Corona / Caltrans
	25. El Camino Avenue/Downs Way / Magnolia Avenue	City of Corona
	26. Sherborn Street / Magnolia Avenue	City of Corona

Figure 3 illustrates the existing intersection configurations.

Existing AM and PM peak hour counts conducted in 2012 that were used as the basis for the previous Alberhill System Project traffic study were also utilized for this traffic study refinement. ***Figure 4*** shows the existing AM and PM peak hour turning movement counts.

PROJECT TRIP GENERATION

The Proposed Project includes the construction of the Alberhill Substation, two (2) 500-kV transmission lines, one (1) new 115-kV subtransmission line, modification of four (4) existing 115-kV subtransmission lines, and installation of telecommunications lines (including overhead and underground). Traffic will be generated during construction both in terms of construction workers and construction trucks. The construction workforce is anticipated to include 134 construction workers and 75 heavy vehicles for the Alberhill Substation, 148 construction workers and 76 heavy vehicles for the staging areas located in Zone 1, 192 construction workers and 106 heavy vehicles for the staging areas located in Zone 2, 221 construction workers and 123 heavy vehicles for the staging area located in Zone 3, and 10 construction workers and 72 heavy vehicles for dirt import activity from the Corona Quarry located in Zone 4.

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the Proposed Project site. ***Tables 2***, ***3***, ***4***, and ***5*** present the Proposed Project's construction trip generation for each of four study area zones. As discussed previously, the ASP study area is anticipated to include four (4) zones.

Zone 1 is calculated to generate a total of 1,319 ADT with 76 inbound / 75 outbound trips during the AM peak hour and 76 inbound / 357 outbound trips during the PM peak hour.

Zone 2 is calculated to generate a total of 914 ADT with 53 inbound / 53 outbound trips during the AM peak hour and 53 inbound / 245 outbound trips during the PM peak hour.

Zone 3 is calculated to generate a total of 1,057 ADT with 62 inbound / 61 outbound trips during the AM peak hour and 62 inbound / 282 outbound trips during the PM peak hour.

Zone 4 is calculated to generate a total of 380 ADT with 36 inbound / 36 outbound trips during the AM peak hour and 36 inbound / 46 outbound trips during the PM peak hour.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Project trip distributions that were used in the previous ASP traffic study are also utilized for this traffic study refinement. ***Figures 5***, ***6***, ***7***, and ***8*** show the project assignment for Zones 1–4 respectively. ***Figure 9*** shows the total project assignment.

TABLE 2
CONSTRUCTION PROJECT TRIP GENERATION – ZONE 1

Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Alberhill Substation														
Construction Worker[b]	134	1.0	2 / employee	268	0%	0 : 0	0	0	0	50%	0 : 100	0	134	134
Heavy Vehicles[c]	75	2.5	2 / truck	375	20%	50 : 50	38	37	75	20%	50 : 50	38	37	75
Subtotal				*643*			*38*	*37*	*75*			*38*	*171*	*209*
Staging Area														
Construction Worker[b]	148	1.0	2 / employee	296	0%	0 : 0	0	0	0	50%	0 : 100	0	148	148
Heavy Vehicles[c]	76	2.5	2 / truck	380	20%	50 : 50	38	38	76	20%	50 : 50	38	38	76
Subtotal				*676*			*38*	*38*	*76*			*38*	*186*	*224*
Total				***1,319***			***76***	***75***	***151***			***76***	***357***	***433***

Footnotes:

a. ADT – average daily traffic.

b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.

c. Heavy vehicles are expected to arrive in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and PM peak hour.

TABLE 3
CONSTRUCTION PROJECT TRIP GENERATION – ZONE 2

Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Staging Area														
Construction Worker[b]	192	1.0	2 / employee	384	0%	0 : 0	0	0	0	50%	0 : 100	0	192	192
Heavy Vehicles[c]	106	2.5	2 / truck	530	20%	50 : 50	53	53	106	20%	50 : 50	53	53	106
Total				***914***			***53***	***53***	***106***			***53***	***245***	***298***

Footnotes:

a. ADT – average daily traffic.
b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.
c. Heavy vehicles are expected to arrive in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and PM peak hour.

TABLE 4
CONSTRUCTION PROJECT TRIP GENERATION – ZONE 3

Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Staging Area														
Construction Worker[b]	221	1.0	2 / employee	442	0%	0 : 0	0	0	0	50%	0 : 100	0	221	221
Heavy Vehicles[c]	123	2.5	2 / truck	615	20%	50 : 50	62	61	123	20%	50 : 50	62	61	123
Total				***1,057***			***62***	***61***	***123***			***62***	***282***	***344***

Footnotes:

a. ADT – average daily traffic.
b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.
c. Heavy vehicles are expected to arrive in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and PM peak hour.

TABLE 5
CONSTRUCTION PROJECT TRIP GENERATION – ZONE 4

Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Corona Quarry														
Construction Worker[b]	10	1.0	2 / employee	20	0%	0 : 0	0	0	0	50%	0 : 100	0	10	10
Heavy Vehicles[b]	72	2.5	2 / truck	360	20%	50 : 50	36	36	72	20%	50 : 50	36	36	72
Total				***380***			***36***	***36***	***72***			***36***	***46***	***82***

Footnotes:

a. ADT – average daily traffic.
b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.
c. Heavy vehicles are expected to arrive in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and PM peak hour.

ANALYSIS RESULTS

Existing + Project Intersection Analysis

Table 6 summarizes the Existing + Project intersection level of service. As seen in ***Table 6***, all intersections were calculated to continue to operate at LOS D or better under Existing + Project conditions with the exception of:

- #8: Lake Street/ I-15 Northbound Ramps (LOS F during the AM peak hour)
- #19: Menifee Road/ Pinacate Road (SR 74) (LOS F during the AM peak hour and LOS E during the PM peak hour)

Figure 10 illustrates the Existing + Project traffic volumes. ***Attachment B*** contains the Existing + Project intersection analysis worksheets.

Near-Term + Project Intersection Analysis

The Valley-Ivyglen Project was included in the original 2016 ASP traffic study as a cumulative project. The ASP and the Valley-Ivyglen Project were assumed to be constructed at the same time. To address the potential cumulative impacts, a Near-Term + Project intersection analysis was conducted. Since the construction of the Valley-Ivyglen Project has been completed, there is no longer cumulative traffic to contribute to the Near-Term scenario. Additionally, with the completion of the Valley-Ivyglen Project, a cumulative impact can no longer occur. As a result, the Near-Term + Project intersection analysis has been removed from this refined traffic study.

TABLE 6
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project (Previous Results)		Δ[c]	Significant Impact?	Existing + Project (New Results)		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS			Delay	LOS		
***Zone 1* – Alberhill Substation and Staging Area**														
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	D	Signal	AM	49.6	D	49.9	D	0.3	-	50.1	D	0.5	-
				PM	43.2	D	47.8	D	4.6	-	48.5	D	5.3	-
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	D	Signal	AM	38.6	D	38.7	D	0.1	-	39.8	D	1.2	-
				PM	31.6	C	32.0	C	0.4	-	32.1	C	0.5	-
3. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	D	Signal	AM	25.2	C	29.5	C	4.3	-	30.0	C	4.8	-
				PM	29.7	C	29.8	C	0.1	-	30.2	C	0.5	-
4. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	D	Signal	AM	38.7	D	38.7	D	0.0	-	38.7	D	0.0	-
				PM	37.2	D	37.2	D	0.0	-	37.2	D	0.0	-
5. Horsethief Canyon Rd/ Temescal Canyon Rd	Riverside County	C	OWSC[d]	AM	11.2	B	12.7	B	1.5	-	12.9	B	1.7	-
				PM	11.7	B	14.7	B	3.0	-	15.7	C	4.0	-
6. Horsethief Canyon Rd/ De Palma Rd	Riverside County	C	AWSC[e]	AM	9.6	A	9.6	A	0.0	-	9.6	A	0.0	-
				PM	11.3	B	11.3	B	0.0	-	11.3	B	0.0	-
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	C	OWSC	AM	9.0	A	9.5	A	0.5	-	9.8	A	0.8	-
				PM	9.8	A	11.3	B	1.5	-	12.8	B	3.0	-
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM	**374.9**	**F**	**429.6**	**F**	**54.7**	**Yes**	**463.7**	**F**	**88.8**	**Yes**
				PM	18.7	C	19.4	C	0.7	-	19.8	C	1.1	-
9. Lake St/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM	17.8	C	18.1	C	0.3	-	18.1	C	0.3	-
				PM	25.2	D	26.4	D	1.2	-	27.7	D	2.5	-
10. Lake St/ Temescal Canyon Rd	City of Lake Elsinore	D	Signal	AM	7.8	A	8.0	A	0.2	-	8.6	A	0.8	-
				PM	13.8	B	20.5	C	6.7	-	24.5	C	10.7	-

TABLE 6
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project (Previous Results)		Δ[c]	Significant Impact?	Existing + Project (New Results)		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS			Delay	LOS		
Zone 2 **– Staging Area**														
11. I-15 Northbound Ramps/ Railroad Canyon Rd	City of Lake Elsinore / Caltrans	D	Signal	AM	21.5	C	21.6	C	0.1	-	21.7	C	0.2	-
				PM	27.0	C	27.1	C	0.1	-	27.3	C	0.3	-
12. I-15 Southbound Ramps/ Diamond Dr	City of Lake Elsinore / Caltrans	D	Signal	AM	37.7	D	37.8	D	0.1	-	37.8	D	0.1	-
				PM	43.5	D	43.5	D	0.0	-	43.7	D	0.2	-
13. Diamond Dr/ Lakeshore Dr/ Mission Trail	City of Lake Elsinore	D	Signal	AM	41.7	D	41.7	D	0.0	-	41.8	D	0.1	-
				PM	49.0	D	49.4	D	0.4	-	49.4	D	0.4	-
14. Mission Trail/ Lemon St	City of Wildomar	D	Signal	AM	6.1	A	6.1	A	0.0	-	6.4	A	0.3	-
				PM	6.0	A	6.0	A	0.0	-	6.4	A	0.4	-
15. Mission Trail/ Bundy Canyon Rd	City of Wildomar	D	Signal	AM	17.5	B	17.8	B	0.3	-	18.0	B	0.5	-
				PM	18.5	B	19.2	B	0.7	-	19.2	B	0.7	-
16. I-15 Southbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	27.2	C	28.8	C	1.6	-	28.8	C	1.6	-
				PM	33.0	C	33.7	C	0.7	-	33.3	C	0.3	-
17. I-15 Northbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	22.6	C	23.2	C	0.6	-	24.4	C	1.8	-
				PM	38.6	D	39.7	D	1.1	-	40.4	D	1.8	-
Zone 3 **– Staging Area**														
18. I-215 Northbound Ramps/ Matthews Rd (SR 74)	City of Perris / Caltrans	D	Signal	AM	8.6	A	8.6	A	0.0	-	8.6	A	0.0	-
				PM	8.1	A	8.1	A	0.0	-	8.1	A	0.0	-
19. Menifee Rd/ Pinacate Rd (SR 74)	City of Menifee / Caltrans	D	Signal	AM	**144.6**	**F**	**144.6**	**F**	0.0	-	**150.8**	**F**	**6.2**	**Yes**
				PM	53.4	D	**55.3**	**E**	**1.9**	**Yes**	**77.6**	**E**	**24.2**	**Yes**
20. McCall Blvd/ I-215 Southbound Ramps	City of Menifee / Caltrans	D	Signal	AM	37.7	D	38.0	D	0.3	-	38.6	D	0.9	-
				PM	32.5	C	33.7	C	1.2	-	35.3	D	2.8	-

TABLE 6
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project (Previous Results)		Δ[c]	Significant Impact?	Existing + Project (New Results)		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS			Delay	LOS		
21. McCall Blvd/ I-215 Northbound Ramps	City of Menifee	D	Signal	AM	23.1	C	23.3	C	0.2	-	23.9	C	0.8	-
				PM	37.0	D	37.5	D	0.5	-	39.3	D	2.3	-
22. McCall Blvd/ Menifee Rd	City of Menifee	D	Signal	AM	39.1	D	39.6	D	0.5	-	39.9	D	0.8	-
				PM	29.1	C	29.2	C	0.1	-	31.3	C	2.2	-
***Zone 4* – Corona Quarry**														
23. I-15 Southbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	36.4	D	37.3	D	0.9	-	37.3	D	0.9	-
				PM	43.9	D	44.6	D	0.7	-	44.6	D	0.7	-
24. I-15 Northbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	28.9	C	29.4	C	0.5	-	29.4	C	0.5	-
				PM	23.4	C	23.7	C	0.3	-	23.7	C	0.3	-
25. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	38.1	D	38.9	D	0.8	-	38.9	D	0.8	-
				PM	30.9	C	31.4	C	0.5	-	31.4	C	0.5	-
26. Sherborn St/ Magnolia Ave	City of Corona	D	Signal	AM	15.8	B	16.0	B	0.2	-	18.8	B	3.0	-
				PM	20.3	C	20.5	C	0.2	-	26.0	C	5.7	-

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.
e. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

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

MITIGATION MEASURES

With the increased construction trips, impacts would occur at two intersections (Lake Street/ I-15 Northbound Ramps and Menifee Road/ Pinacate Road (SR 74)). These are the same intersections that were impacted in the 2016 analysis; however, the Menifee Road/ Pinacate Road (SR 74) intersection is now showing an impact during the AM peak hour in addition to the previously identified impact in the PM peak hour.

It is recommended that the mitigation measures from the 2016 traffic study continue to be implemented; however, the measures should be modified to also restrict construction traffic during the AM peak hour at Menifee Road/ Pinacate Road (SR 74) as described below.

Lake St/ I-15 Northbound Ramps

To mitigate the significant impact at the Lake Street/ I-15 Northbound Ramps intersection, the project proposes to restrict construction traffic at this intersection during the AM peak hour. Given that the construction workers arrive prior to the commuter AM peak hour (7 AM to 9 AM), the restriction would apply to heavy vehicles only. The project should divert all heavy vehicles to the I-15/ Indian Truck Trail interchange during the AM peak hour. The contractor should be required to alert truck drivers of this condition and should install temporary signage on Lake Street to this effect.

As shown in ***Table 7***, with the implementation of the identified mitigation, no project traffic will utilize the off-ramp at the I-15 NB ramps/ Lake Street intersection during the commuter AM peak hour. Therefore, with the proposed mitigation, no traffic impacts are calculated as the level of services are reduced to pre-project levels.

As shown in ***Table 7***, with the additional rerouted project traffic at the I-15/ Indian Truck Trail interchange, no impacts are identified at the affected intersections as the level of service are reduced to pre-project levels.

Menifee Road/ Pinacate Road (SR 74)

To mitigate the significant impact at the Menifee Road/ Pinacate Road (SR 74) intersection, the project proposes to restrict construction traffic during the AM and PM peak hours. The construction traffic would exit the staging area prior to or after the AM and PM peak hours but not during the AM peak hour (7 – 9 a.m.) and PM peak hour (4 – 6 p.m.). Alternatively, the project may also consider providing an alternative access route via Case Road to I-215/ Ethanac Road interchange. Therefore, restriction of traffic, alternative access or any combination thereof, would reduce the level of service to pre-project levels.

As shown in ***Table 7***, with the implementation of the identified mitigation, no traffic impacts are calculated as the level of services are reduced to pre-project levels.

Attachment C contains the post mitigation intersection calculation sheets.

The analysis shows that the prior mitigation measures would also mitigate the impacts with the increased trip generation to below a level of significance.

TABLE 7
EXISTING + PROJECT MITIGATION ANALYSIS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Existing + Project Mitigation		Δ[c]
					Delay[a]	LOS[b]	Delay	LOS	Delay	LOS	
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	LOS D	Signal	AM	49.6	D	50.1	D	50.3	D	0.7
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	38.6	D	39.8	D	40.3	D	1.7
5. Horsethief Canyon Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC[d]	AM	11.2	B	12.9	B	13.1	B	1.9
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC	AM	9.0	A	9.8	A	9.9	A	0.9
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC	AM	**374.9**	**F**	**463.7**	**F**	**374.9**	**F**	0.0
19. Menifee Rd/ Pinacate Rd (SR 74)	City of Menifee / Caltrans	LOS D	Signal	AM	**144.6**	**F**	**150.8**	**F**	**144.6**	**F**	0.0
				PM	53.4	D	**77.6**	**E**	53.4	D	0.0

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

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

COMPARISON TO 2016 TRAFFIC STUDY RESULTS

LLG prepared the traffic study for the project dated January 11, 2016 (*See **Attachment A***). The 2016 traffic study concluded there would be significant traffic impacts at two intersections, Lake Street/ I-15 Northbound Ramps and Menifee Road/ Pinacate Road (SR 74). With the refinement in traffic volumes, the same two intersections would have potentially significant impacts. At the Lake Street/ I-15 Northbound Ramps intersection, the implementation of the same mitigation measures recommended in the 2016 report would reduce the impact to a less-than-significant level. At the Menifee Road/ Pinacate Road (SR 74) intersection, the refined analysis shows that a new potential impact would occur during the AM peak hour, in addition to the PM peak hour impact that was identified in the 2016 report. As described in the previous section, the recommended mitigation measure from the 2016 report for this intersection has been modified to restrict traffic during both the AM and PM peak hours. No increase in the severity of impacts would occur at the balance of the intersections with the refined trip values.

Sincerely,
Linscott, Law & Greenspan, Engineers

John Boarman, P.E.
Principal
California Registration: C50033

cc: File

Figures:
Figure 1: Project Area Map
Figure 2: Study Area
Figure 3: Existing Conditions Diagram
Figure 4: Existing Traffic Volumes
Figure 5: Project Traffic Volumes - Zone 1 Alberhill Substation & Staging Area
Figure 6: Project Traffic Volumes - Zone 2 Staging Area
Figure 7: Project Traffic Volumes - Zone 3 Staging Area
Figure 8: Project Traffic Volumes - Zone 4 Quarry
Figure 9: Total Project Traffic Volumes
Figure 10: Existing + Project Traffic Volumes

Attachments:
Attachment A: Alberhill System Project Traffic Study, January 11, 2016
Attachment B: Existing + Project Intersection Analysis Worksheets
Attachment C: Post Mitigation Intersection Analysis Worksheets

City of Corona

Quarry

15

County of Riverside

Substation

74

215

City of Perris

74

Proposed 115KV Transmission Line

74

City of Lake Elsinore

City of Menifee

215

15

City of Wildomar

LLG

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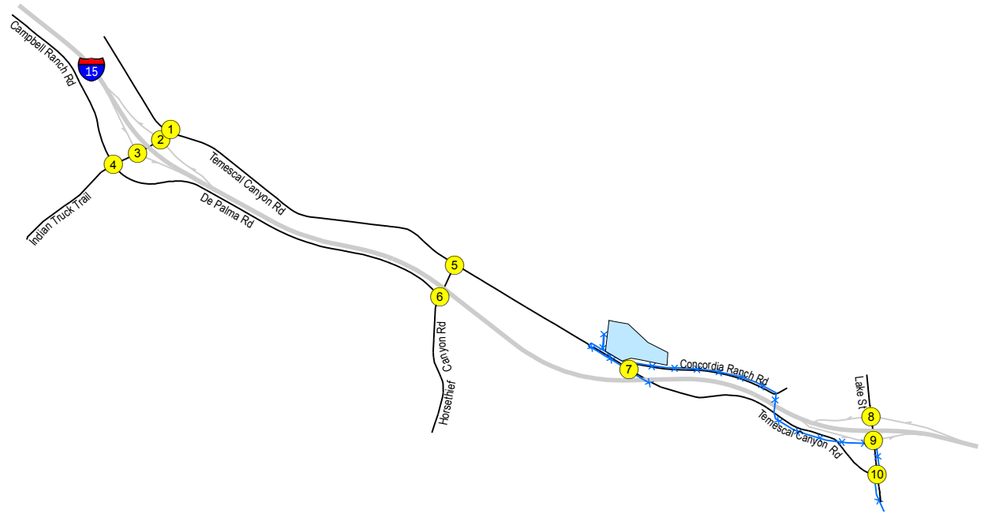
Date: 02/05/2024

Figure 1

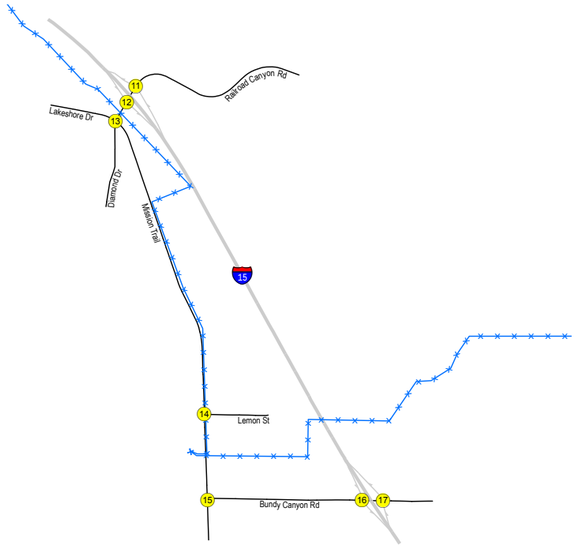
Project Area Map

Alberhill System project

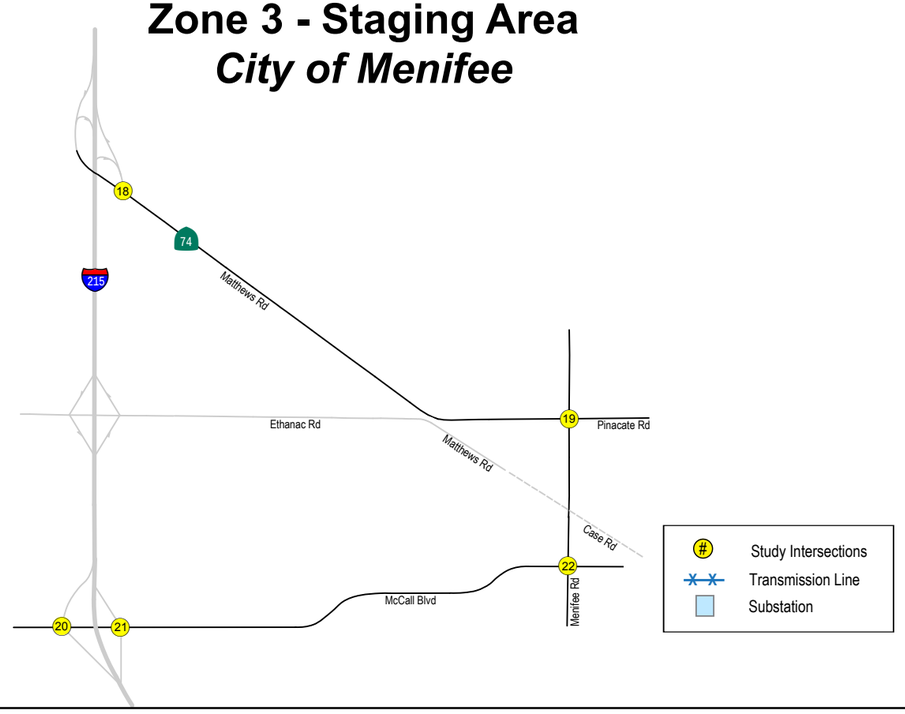
Zone 1 - Ivyglen Substation & Staging Area
Riverside County



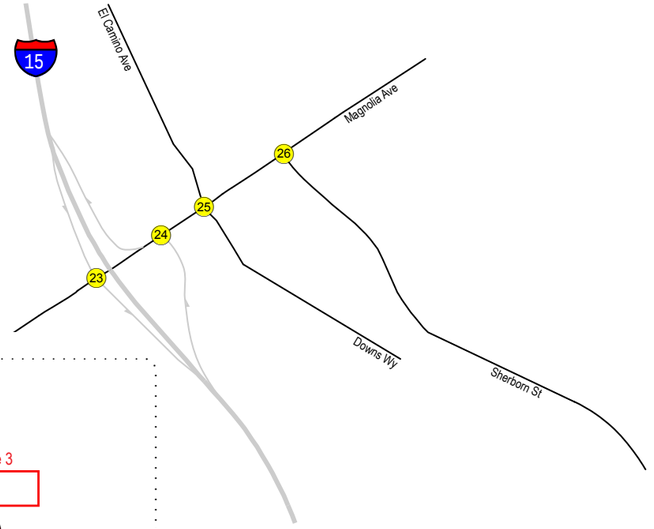
Zone 2 - Staging Area
Riverside County & City of Lake Elsinore



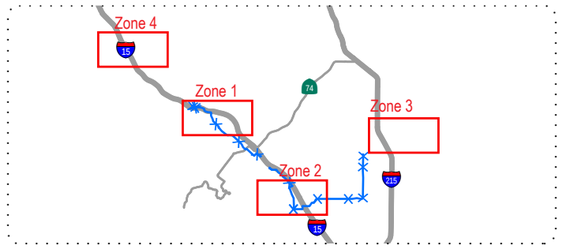
Zone 3 - Staging Area
City of Menifee



Zone 4 - Quarry Site
City of Corona



Key Map



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Date: 02/05/2024

Figure 2

Study Area

ALBERHILL SYSTEM PROJECT

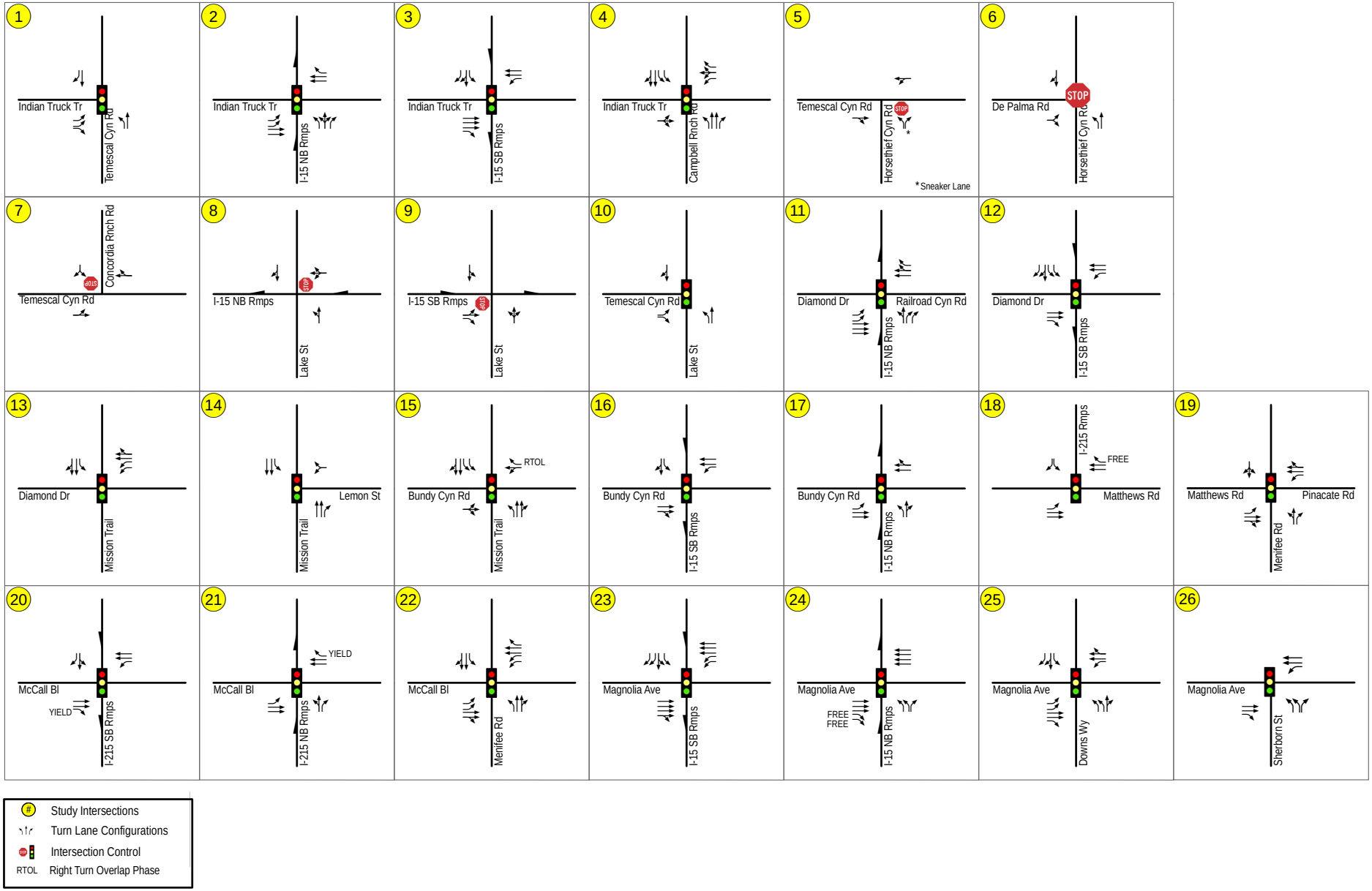

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Figure 3

Existing Conditions Diagram

ALBERHILL SYSTEM PROJECT

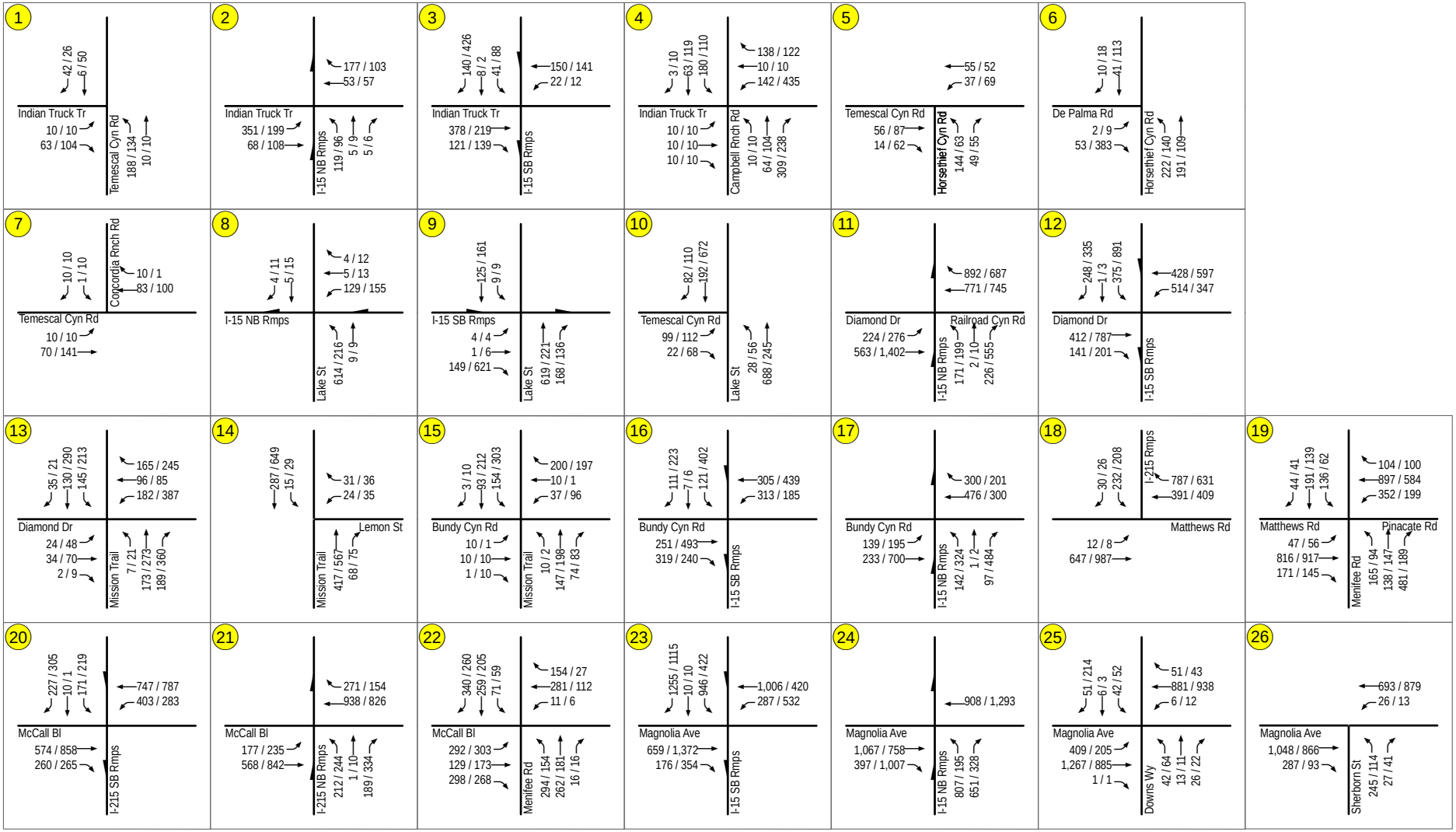

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Figure 4

Existing Traffic Volumes

ALBERHILL SYSTEM PROJECT

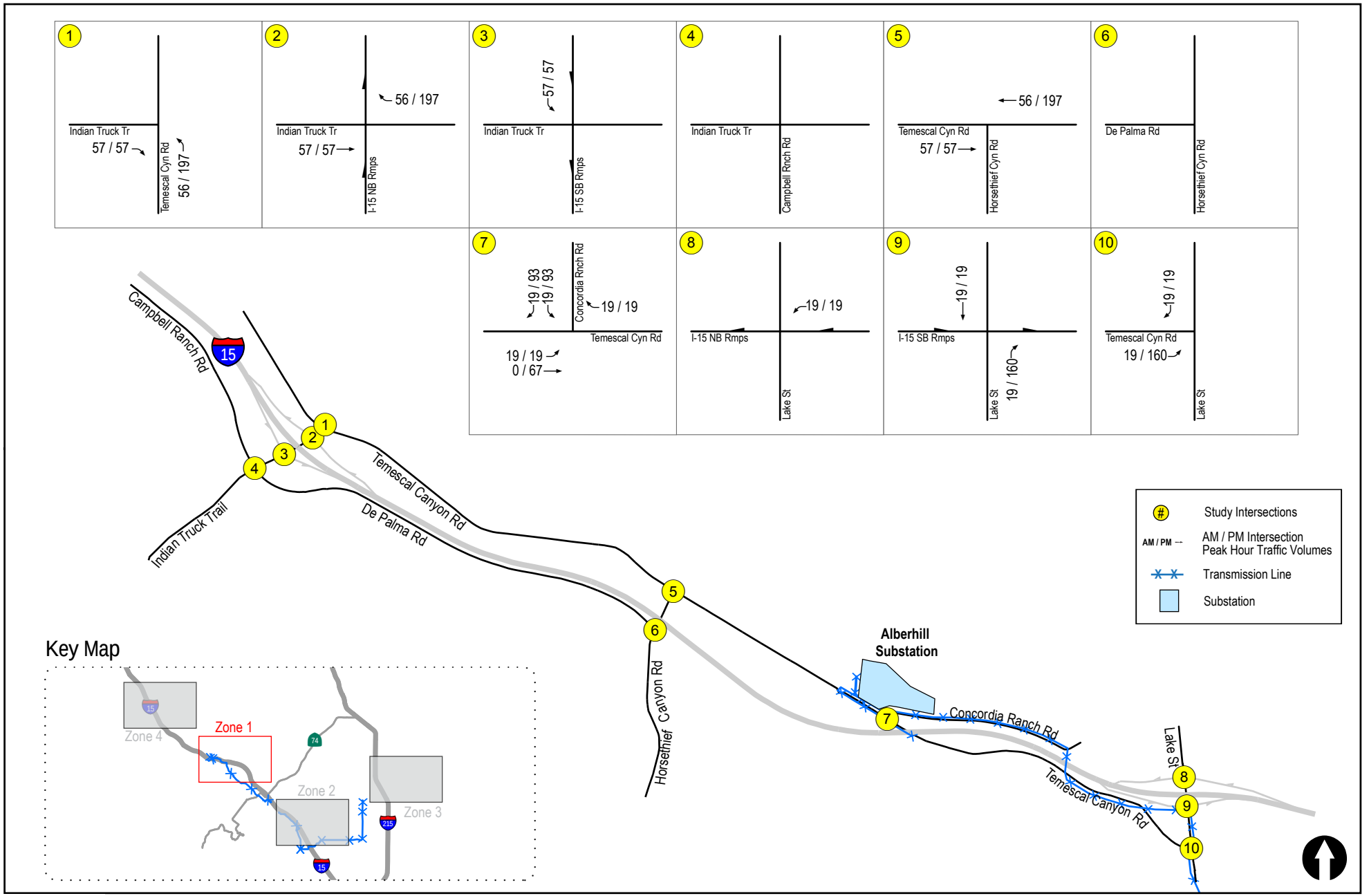

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Figure 5

Project Traffic Volumes - Zone 1 Alberhill Substation & Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

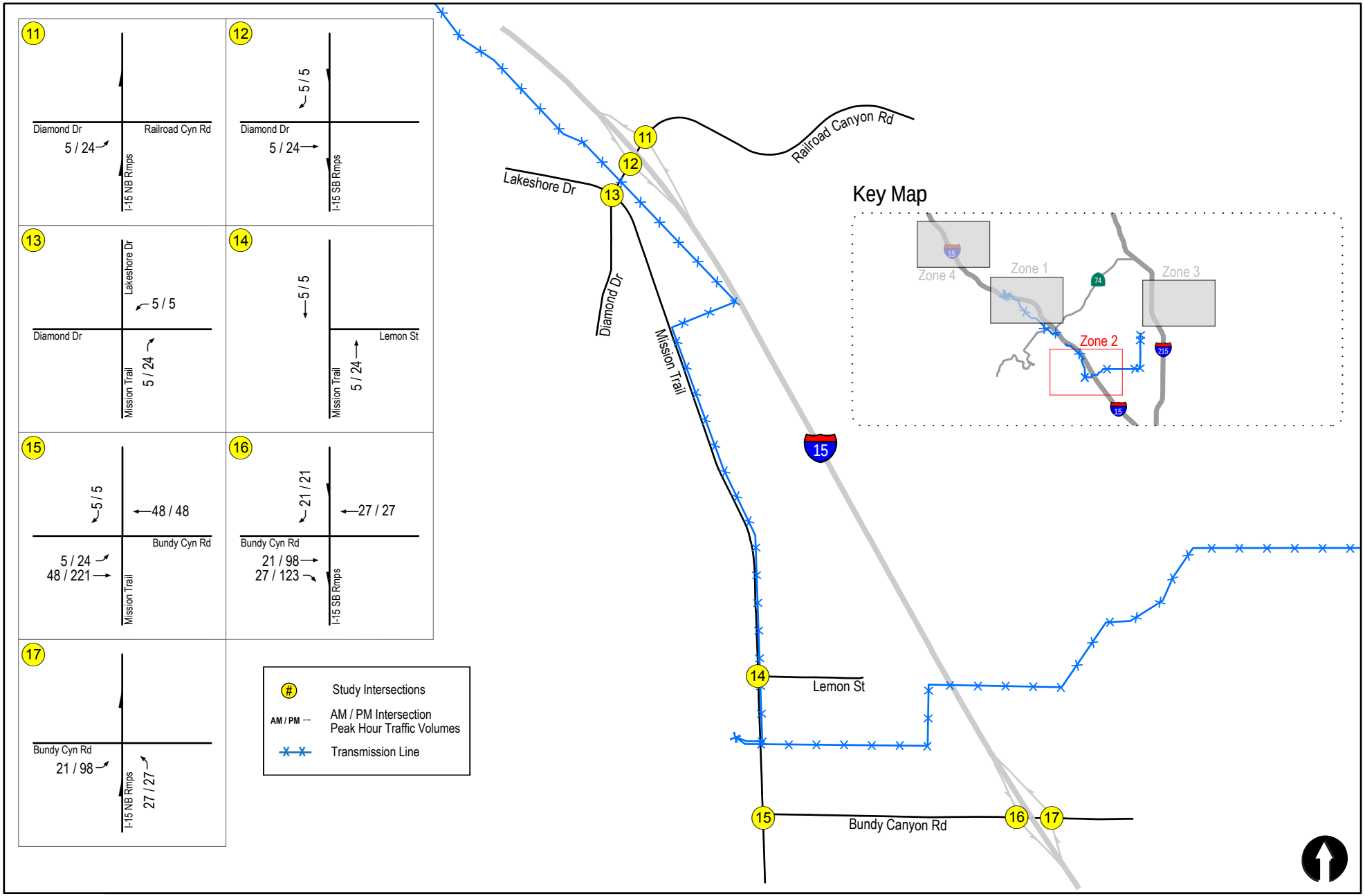

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Figure 6

Project Traffic Volumes - Zone 2 Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

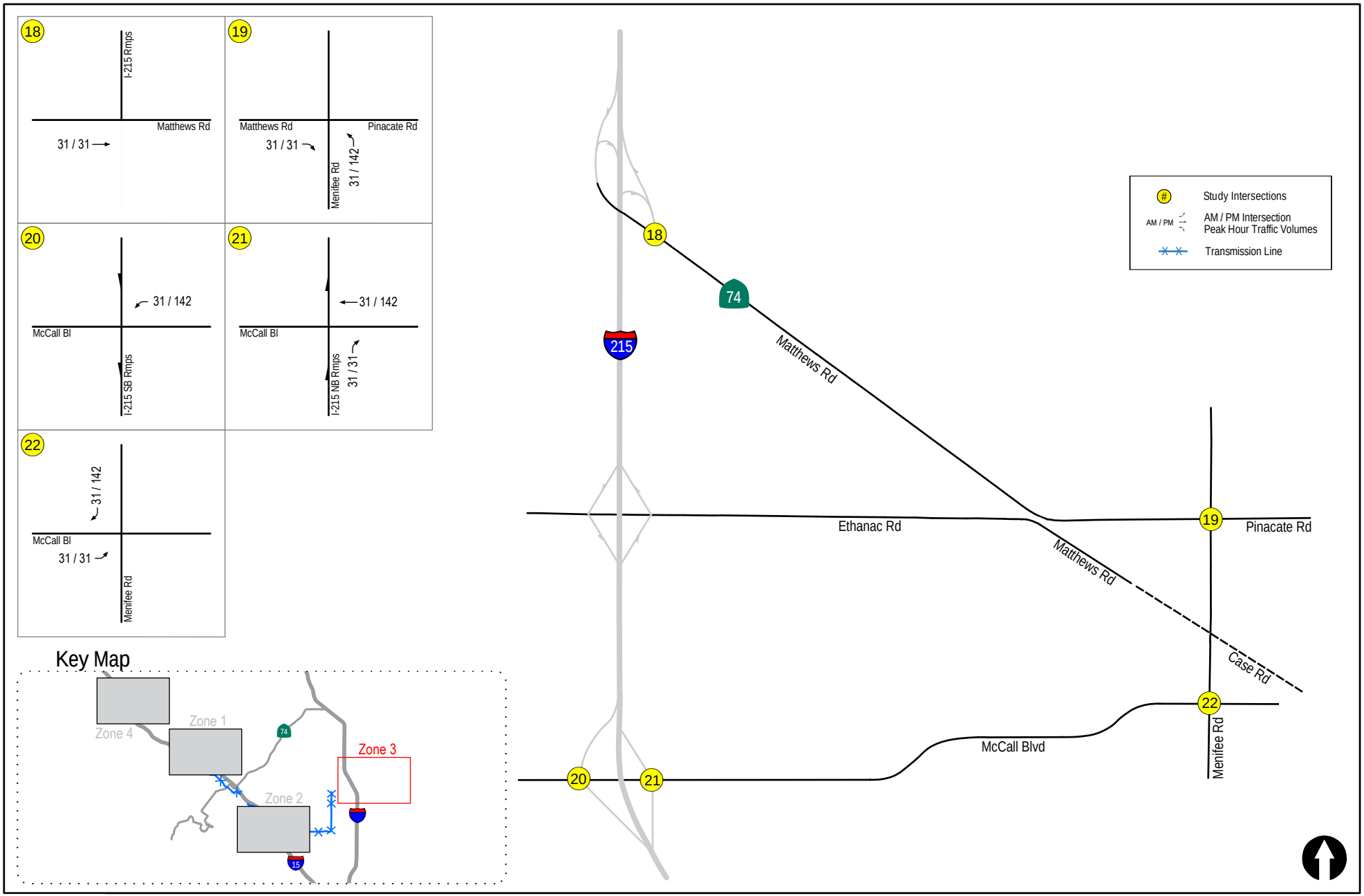

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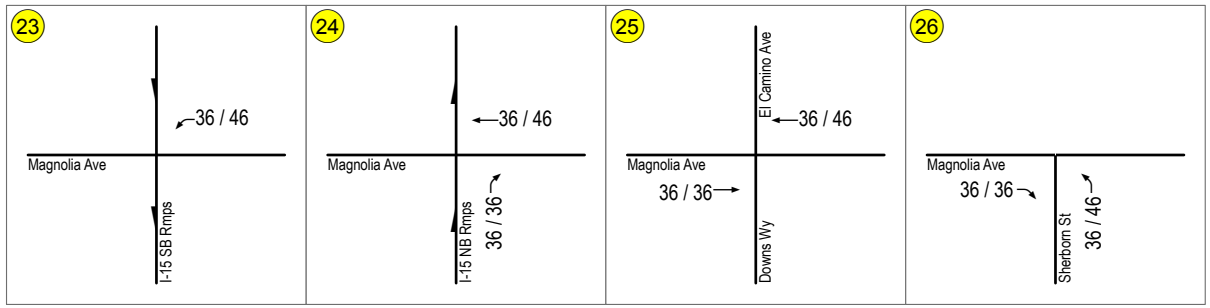
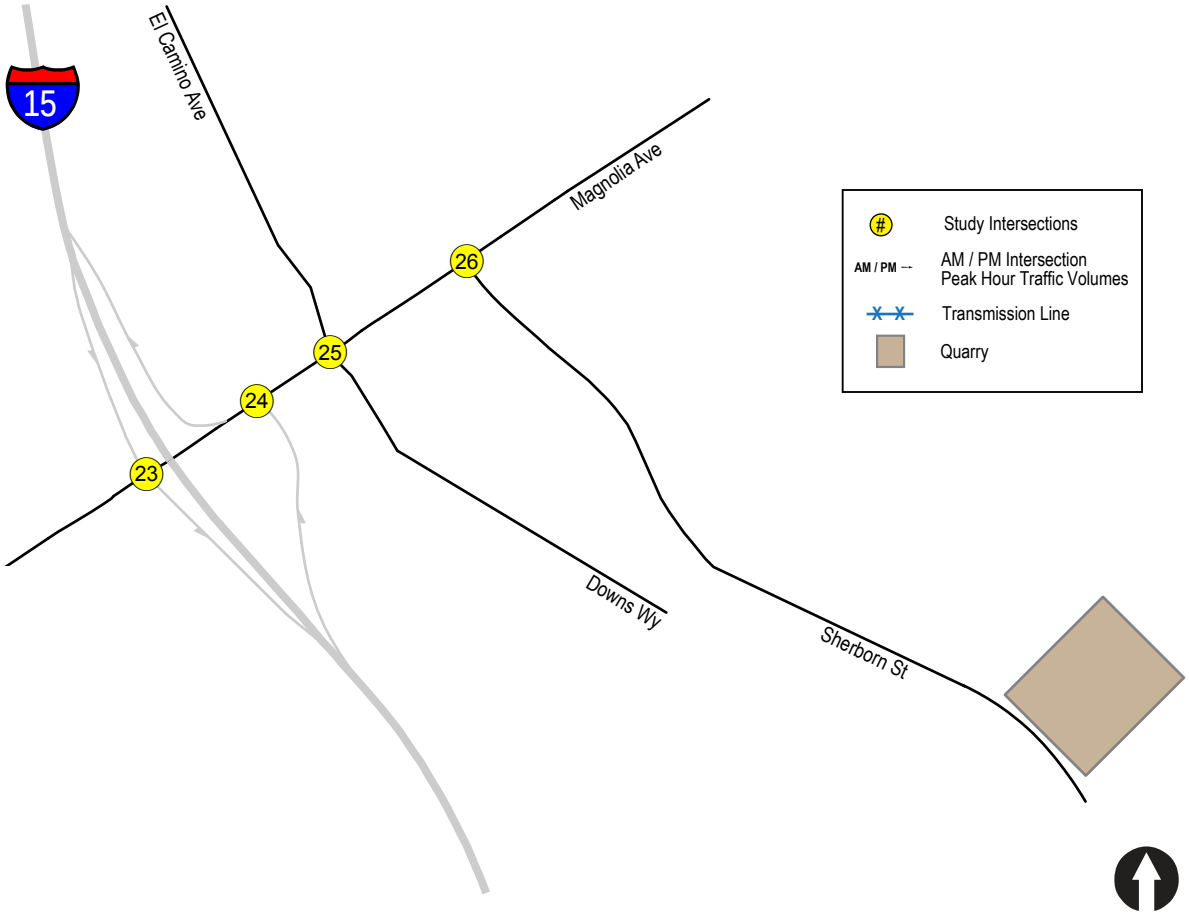
Figure 7

Project Traffic Volumes - Zone 3 Staging Area
(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT





Key Map

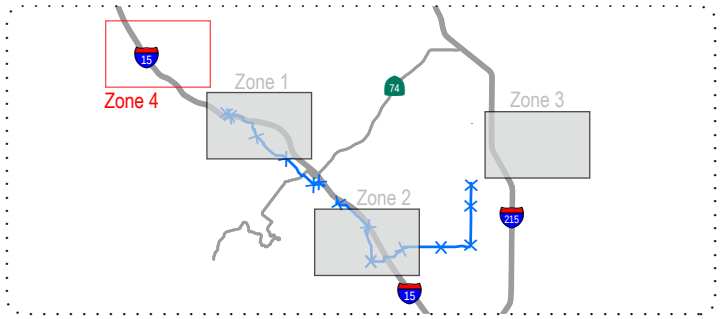


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Figure 8

Project Traffic Volumes - Zone 4 Quarry

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

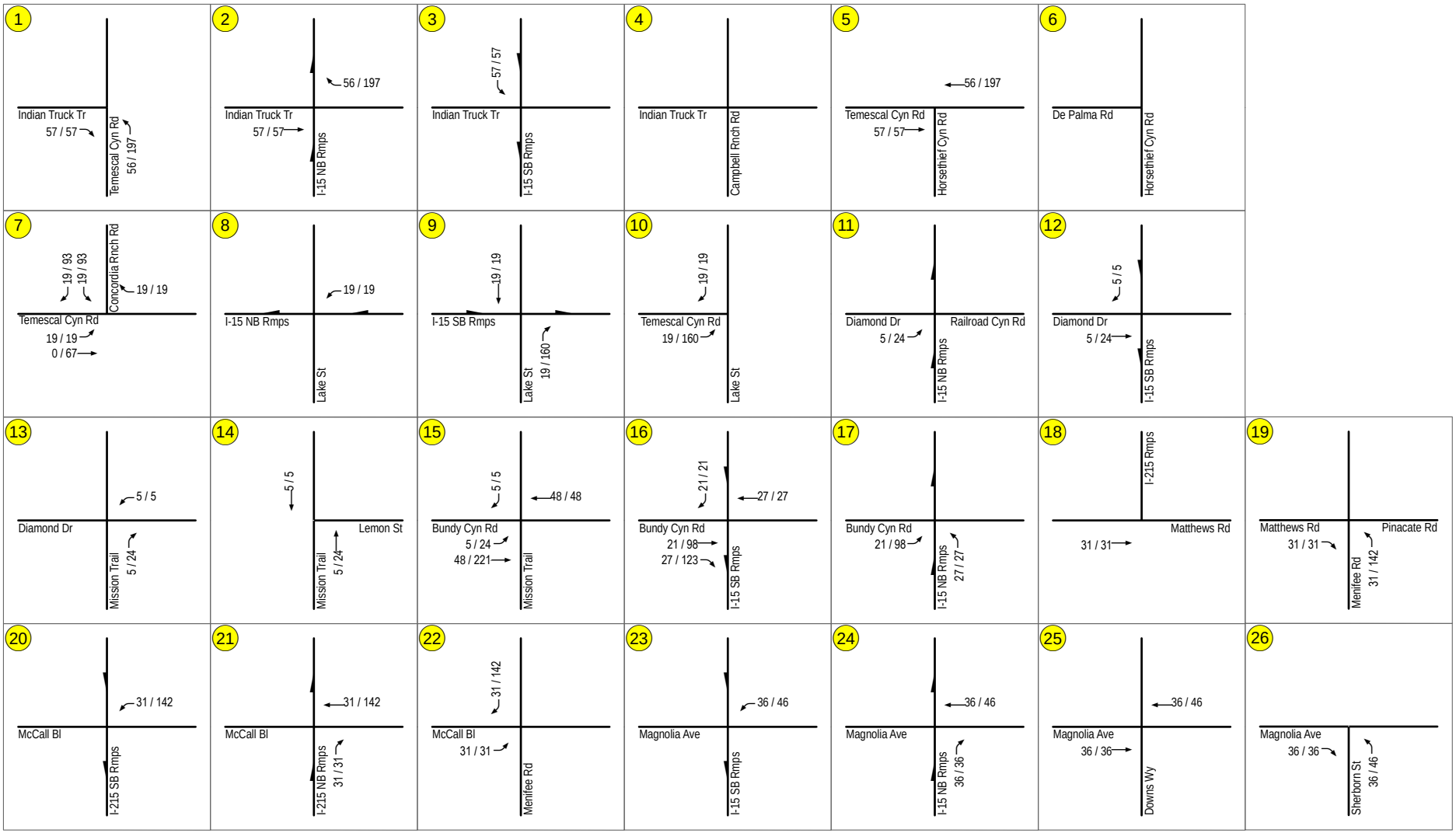

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Figure 9

Total Project Traffic Volumes

ALBERHILL SYSTEM PROJECT

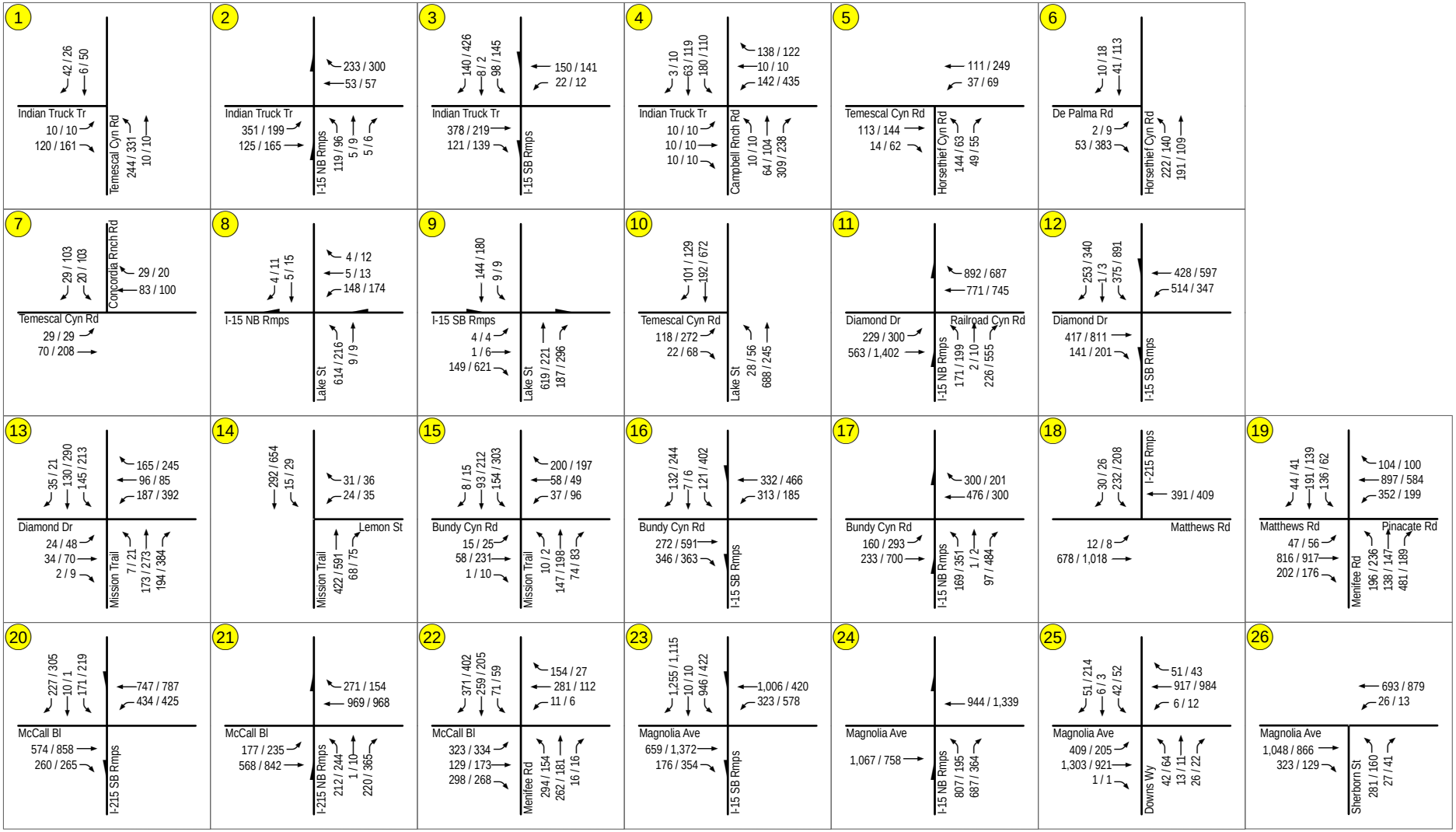

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Figure 10

Existing + Project Traffic Volumes

ALBERHILL SYSTEM PROJECT

ATTACHMENT A

ALBERHILL SYSTEM PROJECT TRAFFIC STUDY
DATED JANUARY 11, 2016

LINSCOTT LAW & GREENSPAN engineers

TRAFFIC IMPACT ANALYSIS

ALBERHILL SYSTEM PROJECT

County of Riverside, California
January 11, 2016

LLG Ref. 3-13-2281

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TRAFFIC IMPACT ANALYSIS

ALBERHILL SYSTEM PROJECT

County of Riverside, California
January 11, 2016

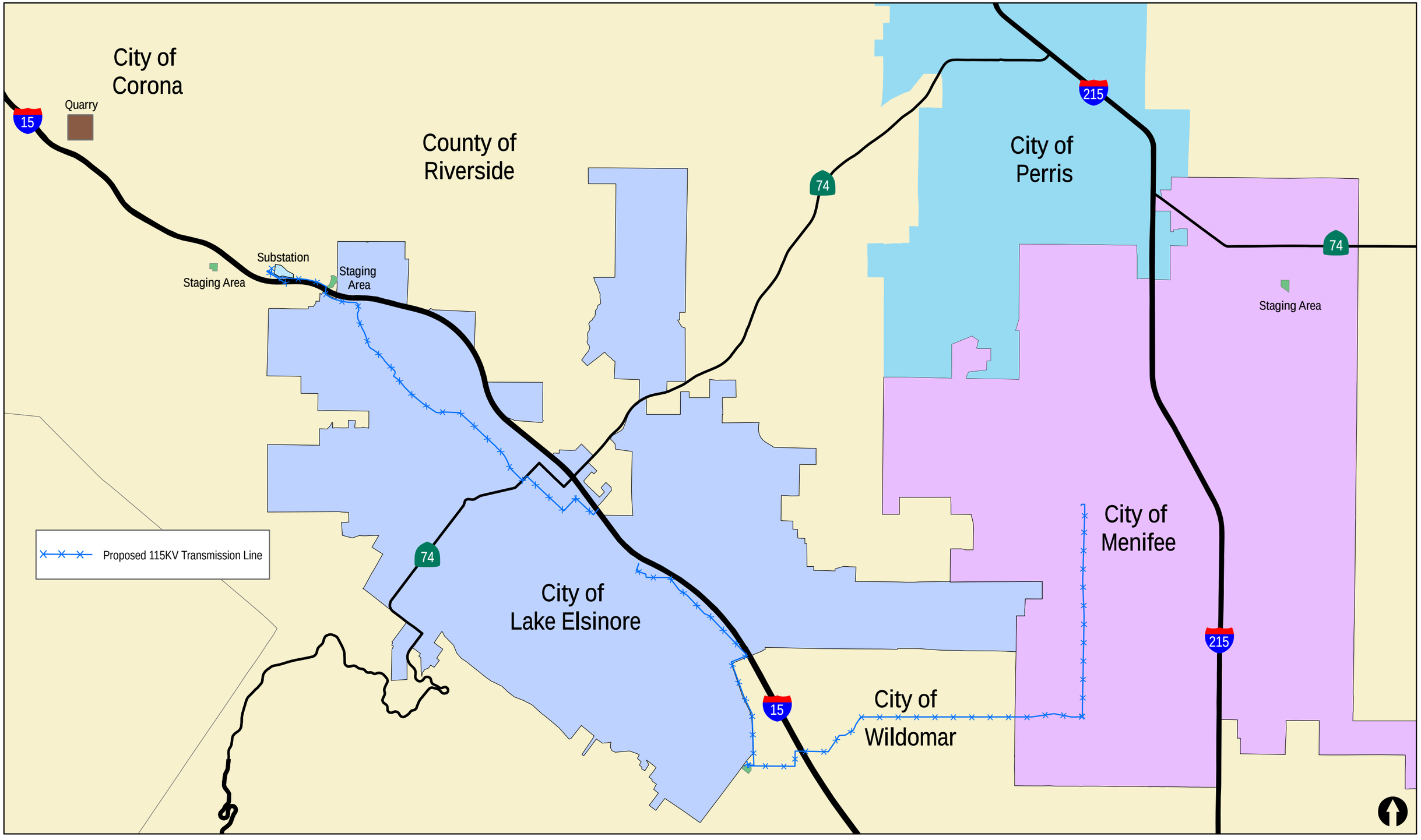
1.0 INTRODUCTION

Linscott, Law and Greenspan, Engineers (LLG) has prepared the following traffic impact analysis to determine the potential impacts associated with the construction of the Alberhill System (ASP) project. The proposed ASP project would include the construction of the Alberhill Substation on approximately 34 acres of a 124-acre property located on the northwest corner of the intersection of Temescal Canyon Road and Concordia Ranch Road in unincorporated western Riverside County. In addition, the project would also construct two (2) 500-kV transmission lines, construct one (1) new and modify four (4) existing 115-kV subtransmission lines and install telecommunication lines.

This traffic study has been prepared in accordance to *County of Riverside Traffic Impact Guidelines* and *Caltrans Guide for Preparation of Traffic Impact Studies*. The traffic analysis presented in this report encompasses the following key areas:

- Project Description
- Existing Conditions Assessment
- Traffic Analysis Approach & Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Construction Project Trip Generation, Distribution and Assignment
- Existing + Project Analysis
- Cumulative Projects Discussion
- Near-Term Analysis
- Significant Impacts and Mitigation Measures
- Construction Management Plan

Figure 1–1 shows the project area map.



LINSCOTT LAW & GREENSPAN engineers

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Date: 07/29/15

Figure 1-1

Project Area Map

ALBERHILL SYSTEM PROJECT

2.0 PROJECT DESCRIPTION

2.1 Project Location

The proposed Alberhill Project would serve the cities of Lake Elsinore, Canyon Lake, Perris, Menifee, Murrieta, Hot Springs, Temecula and Wildomar as well as surrounding unincorporated areas of Riverside County. The Alberhill Substation is proposed to be built on approximately 34 acres of a 124-acre property located on the northwest corner of the Temescal Canyon Road and Concordia Ranch Road intersection. From the Alberhill Substation, the proposed transmission lines would traverse several cities within the County of Riverside.

2.2 Project Description

The ASP Project proposes the following:

- Construct one 1,120 megavolt ampere (MVA) 500/115-kilovolt (kV) substation (Alberhill Substation), expandable to a maximum of 1,680 MVA. The Alberhill Substation is proposed to be built on approximately 34 acres of a 124-acre property located on the northwest corner of the intersection of Temescal Canyon Road and Concordia Ranch Road in unincorporated western Riverside County.
- Construct two 500-kV transmission lines to connect the proposed substation to the existing Serrano–Valley 500-kV transmission line. The two 500-kV transmission lines would each extend approximately 1 mile northeast to connect to the existing Serrano–Valley 500-kV transmission line.
- Construct one new and modify four existing 115-kV subtransmission lines to transfer five 115/12-kV substations that are currently served by the Valley South 500/115-kV Substation to the new Alberhill 500/115-kV Substation. The 115-kV subtransmission line modifications and construction would occur southeast from the Alberhill Substation to Skylark Substation (approximately 11.5 miles) and from Skylark Substation to Newcomb Substation (approximately 9 miles).
- Install telecommunication lines on the new and replaced transmission/ subtransmission lines.
- Install a 120-foot microwave antenna tower at the proposed Alberhill Substation site. Install microwave telecommunications antennas at the existing Santiago Peak communications site and Serrano Substation. Install telecommunications equipment at other existing and proposed substations

Southern California Edison (SCE) designed the proposed Alberhill Project to meet long-term forecasted electrical demand in the proposed Alberhill Project area and increase electrical system reliability. SCE estimates that construction of the proposed Alberhill Project would take approximately 28 months.

This traffic study analyzes the potential traffic impacts with the construction of the ASP project. The ASP project proposes the construction of the Alberhill Substation and temporary staging areas. Temporary staging areas would be used as a reporting location for workers and to stage equipment

and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic-intensive of the construction activity.

The following substation and staging areas were identified for the Alberhill Project:

Alberhill Substation

The Alberhill Substation is located on Temescal Canyon Road, west of I-15 Frontage Road in the County of Riverside. The Alberhill Substation will also be used as a temporary staging area during the project construction. Attached is an aerial depicting the location of the Alberhill Substation.

Staging Area ASP1

ASP1 is located on Concordia Ranch Road, west of Lake Street in the County of Riverside. ASP1 is approximately 10.3 acres.

Staging Area ASP2

ASP2 is located on Lake Street, north of I-15 in the County of Riverside. ASP2 is approximately 0.3 acres. This staging area is an alternative; hence, no traffic analysis was conducted for ASP2. ASP2 is shown here for informational purposes only.

Attached is an aerial depicting the location of ASP1 and ASP2.

Staging Area ASP3

ASP3 is located on Horse Thief Canyon Road, south of I-15 in the County of San Diego. ASP3 is approximately 7.4 acres. This staging area is an alternative; hence, no traffic analysis was conducted for ASP3. ASP3 is shown here for informational purposes only. Attached is an aerial depicting the location of ASP3.

Staging Area ASP4

ASP4 is located on Mission Trail, north of Lemon Street in the City of Lake Elsinore. ASP4 is approximately 6.2 acres. This staging area is an alternative; hence, no traffic analysis was conducted for ASP4. ASP4 is shown here for informational purposes only.

Staging Area ASP5

ASP5 is located on Corydon Road, west of Mission Trail in the City of Wildomar. ASP5 is approximately 6.1 acres. This staging area is an alternative; hence, no traffic analysis was conducted for ASP5. ASP5 is shown here for informational purposes only.

Staging Area ASP6

ASP6 is located on Mission Trail, south of Bundy Canyon Road in the City of Wildomar. ASP6 is approximately 3.7 acres.

Attached is an aerial depicting the location of ASP4, ASP5 and ASP6.

Staging Area ASP7

ASP7 is located on Menifee Road, south of SR 74 in the City of Menifee. ASP7 is approximately 10.5 acres. Attached is an aerial depicting the location of ASP7.

Corona Quarry

The Corona Quarry is located on Sherborn Street, south of Magnolia Avenue in the City of Corona. The Quarry will be used as a dirt import site during the project construction. Attached is an aerial depicting the location of the Quarry.

3.0 STUDY AREA & EXISTING CONDITIONS

The study area for the proposed project was developed based on the location of the temporary staging areas and the anticipated construction traffic assignment (workers and heavy-vehicles) which will access them.

This traffic study analyzes twenty-six (26) intersections. These intersections were divided into four (4) zones based on their proximity to a proposed staging area.

Table 3–1 contains a list of study area intersections within each zone and their governing jurisdiction. ***Figure 3–1*** shows the study area map.

TABLE 3–1
STUDY AREA

Zones	Study Intersections	Jurisdiction
Zone 1 – Alberhill Substation and 500kV Staging Areas	1. Indian Truck Trail / Temescal Canyon Road	Riverside County
	2. Indian Truck Trail / I-15 Northbound Ramps	Riverside County / Caltrans
	3. Indian Truck Trail / I-15 Southbound Ramps	Riverside County / Caltrans
	4. Indian Truck Trail / Campbell Ranch Road	Riverside County
	5. Horsethief Canyon Road / Temescal Canyon Road	Riverside County
	6. Horsethief Canyon Road / De Palma Road	Riverside County
	7. Concordia Ranch Road / Temescal Canyon Road	Riverside County
	8. Lake Street / I-15 Northbound Ramps	City of Lake Elsinore / Caltrans
	9. Lake Street / I-15 Southbound Ramps	City of Lake Elsinore / Caltrans
	10. Lake Street / Temescal Canyon Road	City of Lake Elsinore
Zone 2 – 115 kV Staging Areas	11. I-15 Northbound Ramps / Railroad Canyon Road	City of Lake Elsinore / Caltrans
	12. I-15 Southbound Ramps / Diamond Drive	City of Lake Elsinore / Caltrans
	13. Diamond Drive / Lakeshore Drive/Mission Trail	City of Lake Elsinore
	14. Mission Trail / Lemon Street	City of Wildomar
	15. Mission Trail / Bundy Canyon Road	City of Wildomar
	16. I-15 Southbound Ramps / Bundy Canyon Road	City of Wildomar / Caltrans
	17. I-15 Northbound Ramps / Bundy Canyon Road	City of Wildomar / Caltrans
Zone 3 – 115 kV Staging Areas	18. I-215 Northbound Ramps / Matthews Road (SR 74)	City of Perris / Caltrans
	19. Menifee Road / Pinacate (SR 74)	City of Menifee / Caltrans
	20. McCall Boulevard / I-215 Southbound Ramps	City of Menifee / Caltrans
	21. McCall Boulevard / I-215 Southbound Ramps	City of Menifee / Caltrans
	22. McCall Boulevard / Menifee Road	City of Menifee

TABLE 3–1
STUDY AREA

Zones	Study Intersections	Jurisdiction
Zone 4 – Corona Quarry	23. I-15 Southbound Ramps / Magnolia Avenue	City of Corona / Caltrans
	24. I-15 Northbound Ramps / Magnolia Avenue	City of Corona / Caltrans
	25. El Camino Avenue/Downs Way / Magnolia Avenue	City of Corona
	26. Sherborn Street / Magnolia Avenue	City of Corona

3.1 Existing Roadway Conditions

The following is a description of the roadways in the project area. ***Figure 3–2*** illustrates the existing intersection configurations.

Temescal Canyon Road is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 55 miles per hour (mph).

Campbell Ranch Road is a four-lane, divided roadway in the project area. On-street parking is prohibited on either side of the roadway within the project vicinity. The posted speed limit is 45 mph.

De Palma Road is generally a two-lane, undivided roadway in the project area. West of Santiago Canyon Road, De Palma Road is a four-lane, divided roadway. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 55 mph.

Indian Truck Trail was recently widened from a two-lane to a four-lane roadway undercrossing at I-15 with dedicated left and right-turn lanes. Traffic signals were installed at three (3) intersections along Indian Truck Trail (Temescal Canyon Road, I-15 NB ramps and I-15 SB ramps). On-street parking is not permitted on either side of the roadway. Sidewalks are provided on the south side. There is no posted speed limit.

Horsethief Canyon Road is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 40 mph.

Concordia Ranch Road is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. There is no posted speed limit.

Lake Street is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 50 mph.

Diamond Drive is primarily a four-lane, undivided roadway in the project area. Between Lakeshore Drive and Auto Center Drive, Diamond Drive is an eight-lane divided roadway. The posted speed

limit is 30 mph west of Auto Center Drive and 50 mph east of Auto Center Drive. There is no posted speed limit.

Railroad Canyon Road is primarily a four-lane, divided roadway in the project area. The posted speed limit is 50 mph.

Lakeshore Drive is a four-lane, divided roadway in the project area. The posted speed limit speed limit is 45 mph.

Mission Trail is a four-lane, divided roadway in the project area. The posted speed limit is between 45-50 mph.

Lemon Street is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the Project vicinity. There is no posted speed limit.

Bundy Canyon Road is primarily a two-lane, undivided roadway in the project area. The posted speed limit is 45 mph.

SR 74 is a four-lane, undivided roadway in the project area. The posted speed limit is 50 mph.

Pinacate Road (SR 74) is a four-lane, undivided roadway in the project area. On-street parking is not permitted on either side of the roadway within the project vicinity. The posted speed limit is 50 mph.

McCall Boulevard is a four-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 35 mph.

Menifee Road is a two-lane, undivided roadway north and a four-lane, undivided roadway south of Case Road in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 55 mph.

Magnolia Avenue is primarily a six-lane, divided roadway in the project area. The posted speed limit is 45 mph.

El Camino Real is a four-lane, divided roadway in the project area. The posted speed limit is 40 mph.

Sherborn Street is a two-lane, undivided roadway in the project area. The posted speed limit is 35 mph.

3.2 Existing Traffic Volumes

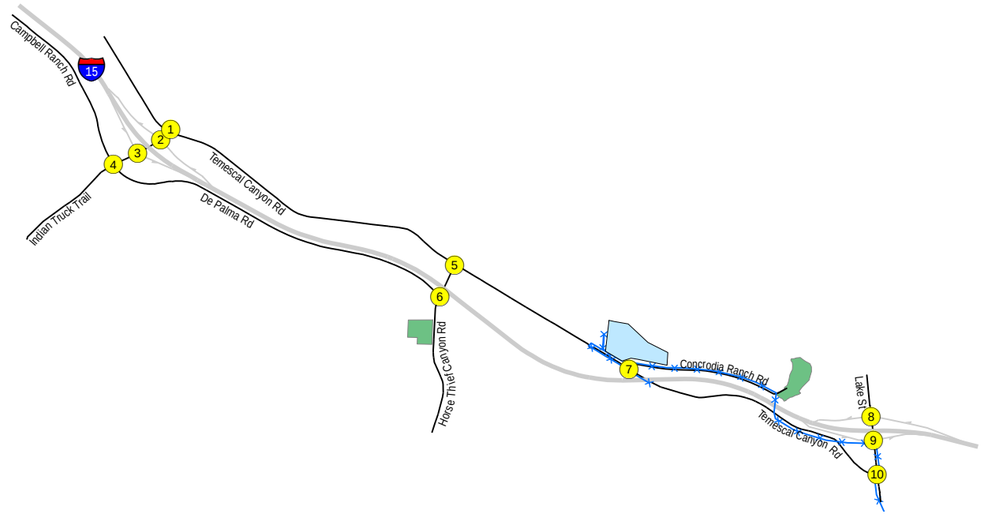
Existing weekday AM and PM peak hour traffic volumes were collected on June 2012 at the key study area intersections to capture peak commuter activity. Supplemental counts from the *Valley-Ivyglen Project* were conducted on Wednesday, August 20, 2014. ***Figure 3–3*** shows the existing AM and PM peak hour turning movement counts.

To verify the appropriateness of the 2012 and 2014 counts, LLG conducted a count validation review. As a part of count validation review, LLG commissioned peak hour traffic counts on Tuesday, June 30, 2015. Based on a review of the counts, the 2015 counts were approximately 5% lower than 2012 and 2014 counts. Therefore, to be conservative, although older, the higher 2012 and 2014 counts were deemed appropriate for the traffic analysis.

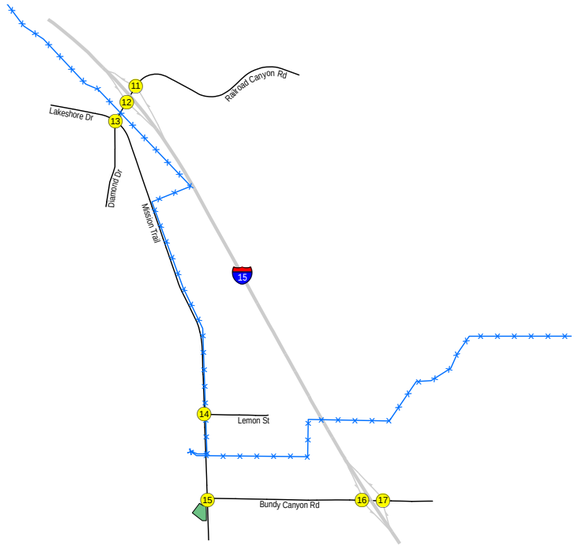
Figure 3–3 shows the existing AM and PM peak hour turning movement counts.

Appendix A contains copies of the intersection manual count sheets.

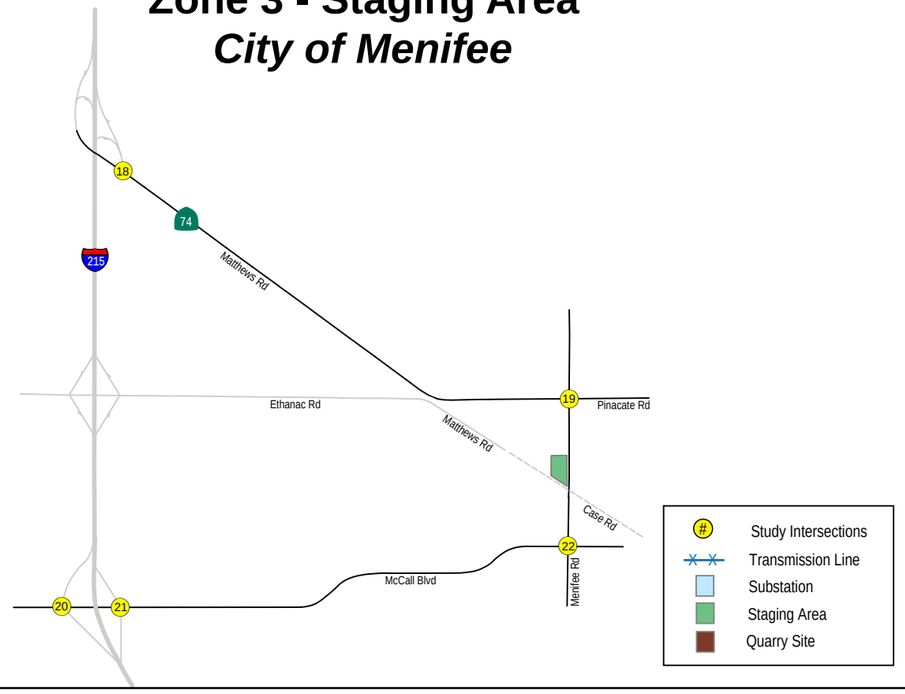
Zone 1 - Ivyglen Substation & Staging Area
Riverside County



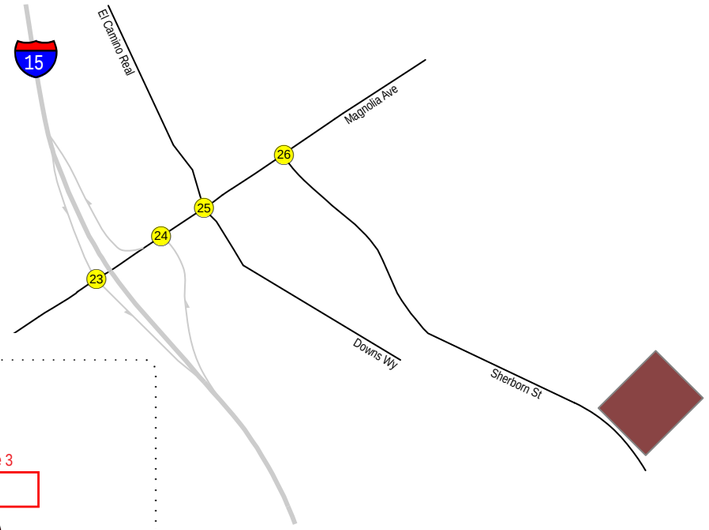
Zone 2 - Staging Area
Riverside County & City of Lake Elsinore



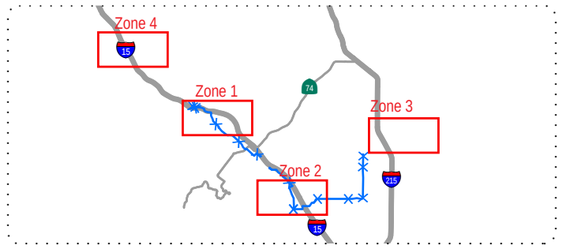
Zone 3 - Staging Area
City of Menifee



Zone 4 - Quarry Site
City of Corona



Key Map



#	Study Intersections
	Transmission Line
	Substation
	Staging Area
	Quarry Site

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Figure 3-1

Study Area

ALBERHILL SYSTEM PROJECT

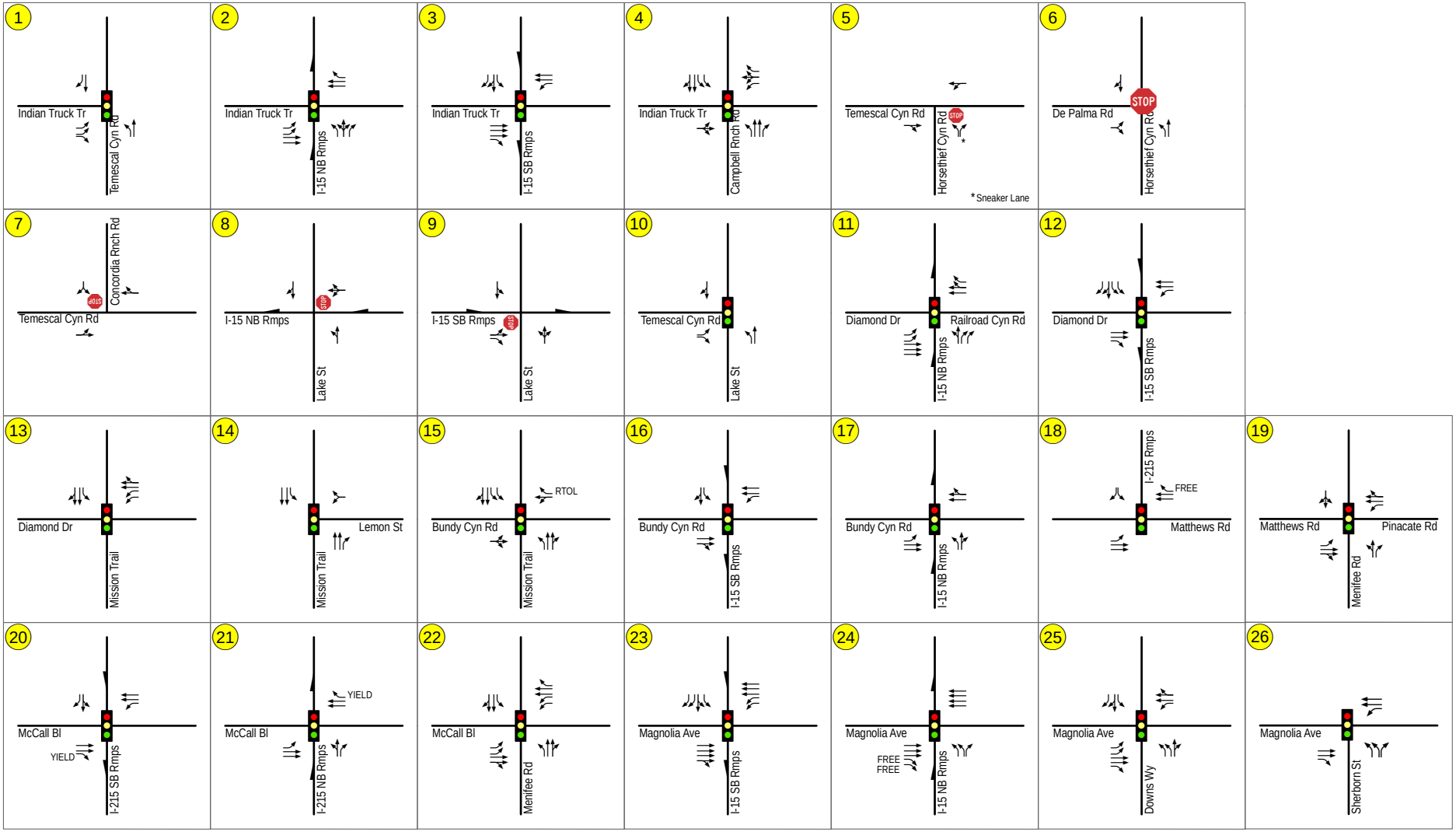

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Figure 3-2

Existing Conditions Diagram

ALBERHILL SYSTEM PROJECT

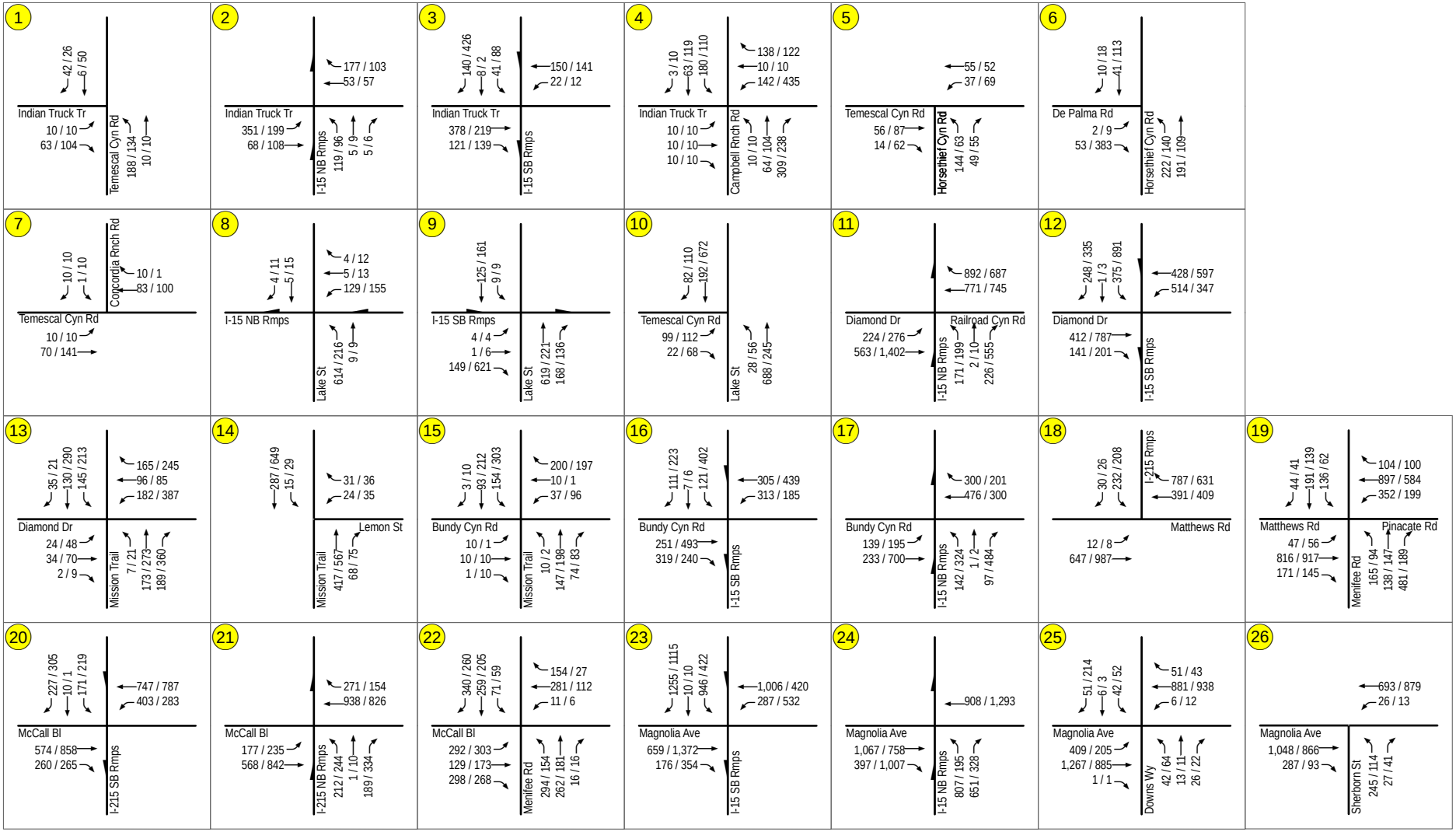

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Figure 3-3

Existing Traffic Volumes

ALBERHILL SYSTEM PROJECT

4.0 ANALYSIS APPROACH AND METHODOLOGY

4.1 Analysis Approach

This traffic study analyzes the potential impacts associated with the construction of the ASP project. The ASP project proposes construction of a substation and temporary staging areas. Temporary staging areas would be used as a reporting location for workers and to stage equipment and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic intensive of the construction activity. This traffic analysis takes into account workers and heavy vehicles.

The construction project traffic (100%) was assigned to each staging area and the traffic impacts for Existing + Project and Near-Term conditions were evaluated accordingly. This traffic analysis is considered conservative as it assumes that 100% of the construction traffic will be accessing each staging area concurrently. The concurrent staging area operation may or may not materialize contingent on the final project phasing. In any case, the worst-case scenario was assumed and analyzed.

4.2 Intersection Methodology

Given that the majority of the intersections are in County of Riverside and that other local jurisdictions (such as City of Elsinore and City of Menifee) defer to the regional County guidelines, the traffic analyses for this project are consistent with the guidelines and standards outlined in the *Riverside County Transportation Department Traffic Impact Analysis Preparation Guide, dated April 2008*.

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

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2010 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 9.0) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). Signalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in ***Appendix B***.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 19 and Chapter 20 of the *2010 Highway Capacity Manual (HCM),* with the assistance of the *Synchro*

(version 9.0) computer software. Unsignalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in *Appendix B.*

5.0 SIGNIFICANCE CRITERIA

The ASP project traverses various jurisdictions in Riverside County. From Alberhill Substation, in the west, the transmission line would traverse areas within the City of Menifee, City of Lake Elsinore, City of Wildomar, unincorporated areas of western Riverside County and Caltrans facilities and Quarry in Corona. The proposed route would cross Interstate 15 (I-15) and State Route 74 (SR 74). This section discusses the traffic impact guidelines for each affected jurisdiction.

5.1 Caltrans Guidelines

Per the *Caltrans Guide for the Preparation of Traffic Impact Studies*, the State "endeavors to maintain a target LOS at the transition between LOS 'C' and LOS 'D' on State highway facilities"; but it does not require that LOS "D" be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Therefore, for the purposes of this traffic analysis, the lead agency guidelines were used for intersections that overlap with Caltrans'.

5.2 County of Riverside LOS Requirements

The County of Riverside General Plan considers LOS "C" as the minimum LOS to be maintained along all County maintained roads and conventional state highways. As an exception, LOS "D" may be allowed in Community Development areas, only at intersections of any combination of Secondary Highways, Major Highways, Urban, Expressways, conventional state highways or freeway ramp intersections. LOS "E" may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities.

Based on the above, ***Table 5–1*** summarizes the LOS required for each key study intersection located within the jurisdiction of the County of Riverside:

TABLE 5–1
COUNTY OF RIVERSIDE LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
1. Indian Truck Trail / Temescal Canyon Road	Urban	LOS D
2. Indian Truck Trail / I-15 Northbound Ramps	Freeway Ramp Intersection	LOS D
3. Indian Truck Trail / I-15 Southbound Ramps	Freeway Ramp Intersection	LOS D
4. Indian Truck Trail / Campbell Ranch Road	Urban	LOS D
5. Horse Thief Canyon Road / Temescal Canyon Road	County Maintained Road	LOS C
6. Horse Thief Canyon Road / De Palma Road	County Maintained Road	LOS C
7. Concordia Ranch Road / Temescal Canyon Road	County Maintained Road	LOS C

5.3 City of Lake Elsinore LOS Requirements

The City of Lake Elsinore General Plan Update considers LOS "D" as the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Lake Elsinore. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F".

Based on the above, ***Table 5–2*** summarizes the LOS required for each key study intersection located within the jurisdiction of the City of Lake Elsinore:

TABLE 5–2
CITY OF LAKE ELSINORE LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
8. Lake Street / I-15 Northbound Ramps	Freeway Ramp Intersection	LOS D
9. Lake Street / I-15 Southbound Ramps	Freeway Ramp Intersection	LOS D
10. Lake Street / Temescal Canyon Road	State Route Freeway	LOS D
11. I-15 Northbound Ramps / Railroad Canyon Road	Freeway Ramp Intersection	LOS D
12. I-15 Southbound Ramps / Diamond Drive	Freeway Ramp Intersection	LOS D
13. Diamond Drive / Lakeshore Drive/Mission Trail	Urban	LOS D

5.4 City of Wildomar LOS Requirements

The City of Wildomar General Plan Update considers LOS "D" as the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Wildomar. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F".

Based on the above, ***Table 5–3*** summarizes the LOS required for each key study intersection located within the jurisdiction of the City of Wildomar:

TABLE 5–3
CITY OF WILDOMAR LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
14. Mission Trail / Lemon Street	Urban	LOS D
15. Mission Trail / Bundy Canyon Road	Urban	LOS D
16. I-15 Southbound Ramps / Bundy Canyon Road	Freeway Ramp Intersection	LOS D
17. I-15 Northbound Ramps / Bundy Canyon Road	Freeway Ramp Intersection	LOS D

5.5 City of Perris LOS Requirements

The City of Perris General Plan Update considers LOS "D" as the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Perris. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F".

Based on the above, ***Table 5–4*** summarizes the LOS required for the study intersection located within the jurisdiction of the City of Perris:

TABLE 5–4
CITY OF PERRIS LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
18. I-215 NB Ramps / SR 74	Freeway Ramp Intersection	LOS D

5.6 City of Menifee LOS Requirements

The City of Menifee has also adopted the County of Riverside criteria to assess the impact of the Proposed Project. Based on the County of Riverside General Plan, the County of Riverside considers LOS "C" as the minimum LOS to be maintained along all County maintained roads and conventional state highways. As an exception, LOS "D" may be allowed in Community Development area, only at intersections of any combination of Secondary Highways, Major Highways, Urban, Expressways, conventional state highways or freeway ramp intersections. LOS "E" may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities.

As stated above and based on the combination of Secondary Highways or higher, LOS "D" is the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Menifee. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F."

Table 5–5 summarizes the LOS required for each key study intersection located within the jurisdiction of the City of Menifee:

TABLE 5–5
CITY OF MENIFEE LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
19. Menifee Road / Pinacate Road (SR 74)	State Route Freeway	LOS D
20. McCall Boulevard / I-215 Southbound Ramps	Freeway Ramp Intersection	LOS D
21. McCall Boulevard / I-215 Northbound Ramps	Freeway Ramp Intersection	LOS D
22. McCall Boulevard / Menifee Road	Secondary Highway	LOS D

5.7 City of Corona LOS Requirements

The City of Corona General Plan Update considers LOS "D" as the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Corona. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F".

Based on the above, ***Table 5–6*** summarizes the LOS required for each key study intersection located within the jurisdiction of the City of Corona:

TABLE 5–6
CITY OF CORONA LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
23. I-15 Southbound Ramps / Magnolia Avenue	Freeway Ramp Intersection	LOS D
24. I-15 Northbound Ramps / Magnolia Avenue	Freeway Ramp Intersection	LOS D
25. El Camino Avenue / Downs Way / Magnolia Avenue	Urban	LOS D
26. Sherborn Street / Magnolia Avenue	Urban	LOS D

6.0 EXISTING ANALYSIS

This section discusses the existing operations of the study area intersections using the methodologies described in *Section 5.0*.

Table 6–1 summarizes the existing intersection Levels of Service. As seen in *Table 6–1*, all of the study area intersections were calculated to currently operate at acceptable LOS D or better with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour)

The Lake Street/ I-15 NB ramp intersection is calculated to operate at deficient LOS due to the heavy northbound left-turn demand (uncontrolled) on to the I-15 on-ramp in the AM peak hour. This causes excessive delays to the WBL from off-ramp due to the lack of acceptable gaps in the traffic stream.

Menifee Road/ SR 74 is calculated to operate at deficient LOS due to heavy traffic volumes that are served by limited intersection geometry (one lane approaches) on the north and south legs combined with inefficient signal phasing (split phasing).

Appendix C contains the intersection analysis sheets for the Existing scenario.

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing	
					Delay[a]	LOS[b]
***Zone 1* – Alberhill Substation and Staging Area**						
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	D	Signal	AM PM	49.6 43.2	D D
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	D	Signal	AM PM	38.6 31.6	D C
3. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	D	Signal	AM PM	25.2 29.7	C C
4. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	D	Signal	AM PM	38.7 37.2	D D
5. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	C	OWSC[c]	AM PM	11.2 11.7	B B
6. Horse Thief Canyon Rd/ De Palma Rd	Riverside County	C	AWSC[d]	AM PM	9.6 11.3	A B
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	C	OWSC	AM PM	9.0 9.8	A A
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM PM	**374.9** 18.7	**F** C
9. Lake St/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM PM	17.8 25.2	C D
10. Lake St/ Temescal Canyon Rd	City of Lake Elsinore	D	Signal	AM PM	7.8 13.8	A B
***Zone 2* – Staging Area**						
11. I-15 Northbound Ramps/ Railroad Canyon Rd	City of lake Elsinore / Caltrans	D	Signal	AM PM	21.5 27.0	C C
12. I-15 Southbound Ramps/ Diamond Dr	City of lake Elsinore / Caltrans	D	Signal	AM PM	37.7 43.5	D D
13. Diamond Dr/ Lakeshore Dr/ Mission Trail	City of Lake Elsinore	D	Signal	AM PM	41.7 49.0	D D
14. Mission Trail/ Lemon St	City of Wildomar	D	Signal	AM PM	6.1 6.0	A A

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing	
					Delay[a]	LOS[b]
15. Mission Trail/ Bundy Canyon Rd	City of Wildomar	D	Signal	AM	17.5	B
				PM	18.5	B
16. I-15 Southbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	27.2	C
				PM	33.0	C
17. I-15 Northbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	22.6	C
				PM	38.6	D
***Zone 3* – Staging Area**						
18. I-215 Northbound Ramps/ Matthews Rd (SR 74)	City of Perris / Caltrans	D	Signal	AM	8.6	A
				PM	8.1	A
19. Menifee Rd/ SR 74	City of Perris / Caltrans	D	Signal	AM	**144.6**	**F**
				PM	53.4	D
20. McCall Blvd/ I-215 Southbound Ramps	City of Perris / Caltrans	D	Signal	AM	37.7	D
				PM	32.5	C
21. McCall Blvd/ I-215 Northbound Ramps	City of Perris	D	Signal	AM	23.1	C
				PM	37.0	D
22. McCall Blvd/ Menifee Rd	City of Menifee	D	Signal	AM	39.1	D
				PM	29.1	C
***Zone 4* – Corona Quarry**						
23. I-15 Southbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	36.4	D
				PM	43.9	D
24. I-15 Northbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	28.9	C
				PM	23.4	C
25. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	38.1	D
				PM	30.9	C
26. Sherborn St/ Magnolia Ave	City of Corona	D	Signal	AM	15.8	B
				PM	20.3	C

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.
d. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.
2. Grayscale denotes intersection overlap with zones, hence same delays are reported.

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

7.0 CONSTRUCTION PROJECT TRIP GENERATION/ DISTRIBUTION/ ASSIGNMENT

7.1 Construction Background

The proposed Alberhill Project includes the construction of the Alberhill Substation, two (2) 500-kV transmission line, one (1) new and modify four (4) existing 115-kV subtransmission lines and install telecommunications lines. The construction workforce is anticipated to include 100 construction workers and 93 heavy vehicles for the Alberhill Substation, 100 construction workers and 40 heavy vehicles for the staging areas located in Zone 1, 45 construction workers and 40 heavy vehicles for the staging areas located in Zones 2 and 3 and 10 construction workers and 72 heavy vehicles for dirt import activity from the Corona Quarry.

7.2 Trip Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the project site. ***Tables 7–1a, 7–1b*** and ***7–1c*** presents the project's construction trip generation. As discussed previously, the Alberhill System Project study area is anticipated to include four (4) zones.

- *Zone 1*, includes the construction of the Alberhill Substation and a staging area. The Alberhill Substation is comprised of 100 construction workers and 93 heavy vehicles. The staging area is comprised of 100 construction workers and 40 heavy vehicles.
- *Zones 2* and *3*, each includes the construction of a staging area, which comprises of 45 construction worker vehicles and 40 heavy vehicles.
- *Zone 4*, includes the dirt import trips from the Corona Quarry dirt import site, which comprises of 10 construction worker vehicles and 72 heavy vehicles.

The trip generation of the proposed project was estimated based on the following assumptions.

- A six-day work week (Monday through Saturday from 7:00 AM to 7:00 PM) is anticipated. For purposes of traffic analyses, the typical and more critical weekday commuter peaks were analyzed.

- Given that the work day start time is at 7:00 AM, it is assumed that the construction workers would arrive before the AM commuter peak hour (7:00 AM to 9:00 AM). However, the construction workers would leave during the PM commuter peak hour (4:00 PM to 6:00PM), to be conservative. It should be noted that even though SCE encourages carpooling among workers, to be conservative, the analyses assumes no carpooling.

- The delivery trucks and dirt trucks would arrive/depart in the AM and PM peak hours, but will deliver materials throughout the day. Therefore, 20% of the truck traffic was assumed in the AM and 20% during the PM peak hours. A total of 40% of truck traffic was assumed in the peak hours.

- Additionally, the heavy vehicle traffic is converted to Passenger Car Equivalent (PCE) trips using the Highway Capacity Manual (2010) approved factors. According to Highway

Capacity Manual 2010, PCE is defined as the number of passenger cars that are displaced by a single heavy vehicle of a particular type under the prevailing traffic conditions. Heavy vehicles have a greater traffic impact than passenger cars since:

- They are larger than passenger cars, and therefore, occupy more roadway space; and their performance characteristics are generally inferior to passenger cars, leading to the formation of downstream gaps in the traffic stream, which cannot always be effectively filled by normal passing maneuvers.

- *Exhibit 14-12,* PCE's for Heavy Vehicles in General Terrain Segments, (obtained from "Highway Capacity Manual prepared by Transportation Research Board," dated Year 2010) summarizes PCE factors for various types of vehicles. The type of terrain in the project area was conservatively assumed as "rolling" and the corresponding passenger car equivalents of 2.5 for trucks was used. *Appendix C* includes the PCE factors.

Zone 1, is calculated to generate total of 1,065 ADT with 67 inbound / 66 outbound trips during the AM peak hour and 67 inbound / 266 outbound trips during the PM peak hour.

Zones 2 and *3*, are calculated to generate total of 290 ADT with 20 inbound / 20 outbound trips during the AM peak hour and 20 inbound / 65 outbound trips during the PM peak hour.

Zone 4, is calculated to generate total of 380 ADT with 36 inbound / 36 outbound trips during the AM peak hour and 36 inbound / 46 outbound trips during the PM peak hour.

7.3 Construction Project Trip Distribution/Assignment

The ASP project proposes temporary staging areas that are anticipated to be used as a reporting location for workers and to stage equipment and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic intensive of the construction traffic (workers and heavy vehicles) for trip distribution and assignment purposes. Furthermore, to analyze a worst-case scenario, this traffic analysis assumes that 100% of the construction traffic will be accessing each staging area concurrently. Although no trips were assigned to intersections #4 and 6, it was included in the analysis as due to potential impacts from adjacent intersections.

The construction project traffic (100%) was assigned to the substation and each staging area. Project traffic volumes, both entering and exiting the Project sites, have been distributed and assigned to the adjacent street system based on the following considerations:

- location of site access in relation to the surrounding street system,
- the site's proximity to major traffic carriers and regional access routes (i.e. I-15 Freeway, I-215 Freeway, etc.),
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns,

- presence of traffic congestion in the surrounding vicinity,
- existing traffic volumes, and
- delivery and construction routes.

It is also important to note that the project proposes alternative staging areas (in Zone 1 and Zone 2). For the purpose of this analysis, only the preferred staging areas were analyzed. Given the locations of the alternative staging areas and the current intersection operations that would be serving these areas, no change in analysis or new impacts are anticipated.

Figures 7–1 to ***7–4*** shows the project's regional traffic distribution for *Zones 1–4* respectively. ***Figures 7–5*** to ***7–8*** shows the project assignment for *Zones 1–4* respectively. ***Figure 7–9*** shows the total project assignment.

TABLE 7–1A
CONSTRUCTION PROJECT TRIP GENERATION – ZONE 1

Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Alberhill Substation														
Construction Worker[b]	100	1.0	2 / employee	200	0%	0 : 0	0	0	0	50%	0 : 100	0	100	100
Heavy Vehicles[c]	93	2.5	2 / truck	465	20%	50 : 50	47	46	93	20%	50 : 50	47	46	93
Subtotal				*665*			*47*	*46*	*93*			*47*	*146*	*193*
Staging Area														
Construction Worker[b]	100	1.0	2 / employee	200	0%	0 : 0	0	0	0	50%	0 : 100	0	100	100
Heavy Vehicles[c]	40	2.5	2 / truck	200	20%	50 : 50	20	20	40	20%	50 : 50	20	20	40
Subtotal				*400*			*20*	*20*	*40*			*20*	*120*	*140*
Total				***1,065***			***67***	***66***	***133***			***67***	***266***	***333***

Footnotes:

a. ADT – average daily traffic.

b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.

c. Heavy vehicles are expected to arrive in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and PM peak hour.

TABLE 7–1B
CONSTRUCTION PROJECT TRIP GENERATION – ZONES 2 AND 3

Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Staging Area														
Construction Worker[b]	45	1.0	2 / employee	90	0%	0 : 0	0	0	0	50%	0 : 100	0	45	45
Heavy Vehicles[c]	40	2.5	2 / truck	200	20%	50 : 50	20	20	40	20%	50 : 50	20	20	40
Total				***290***			***20***	***20***	***40***			***20***	***65***	***85***

Footnotes:

a. ADT – average daily traffic.

b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.

c. Heavy vehicles are expected to arrive in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and PM peak hour.

TABLE 7–1C
CONSTRUCTION PROJECT TRIP GENERATION – ZONE 4

Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Corona Quarry														
Construction Worker[b]	10	1.0	2 / employee	20	0%	0 : 0	0	0	0	50%	0 : 100	0	10	10
Heavy Vehicles[b]	72	2.5	2 / truck	360	20%	50 : 50	36	36	72	20%	50 : 50	36	36	72
Total				***380***			***36***	***36***	***72***			***36***	***46***	***82***

Footnotes:

a. ADT – average daily traffic.

b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.

c. Heavy vehicles are expected to arrive in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and PM peak hour.

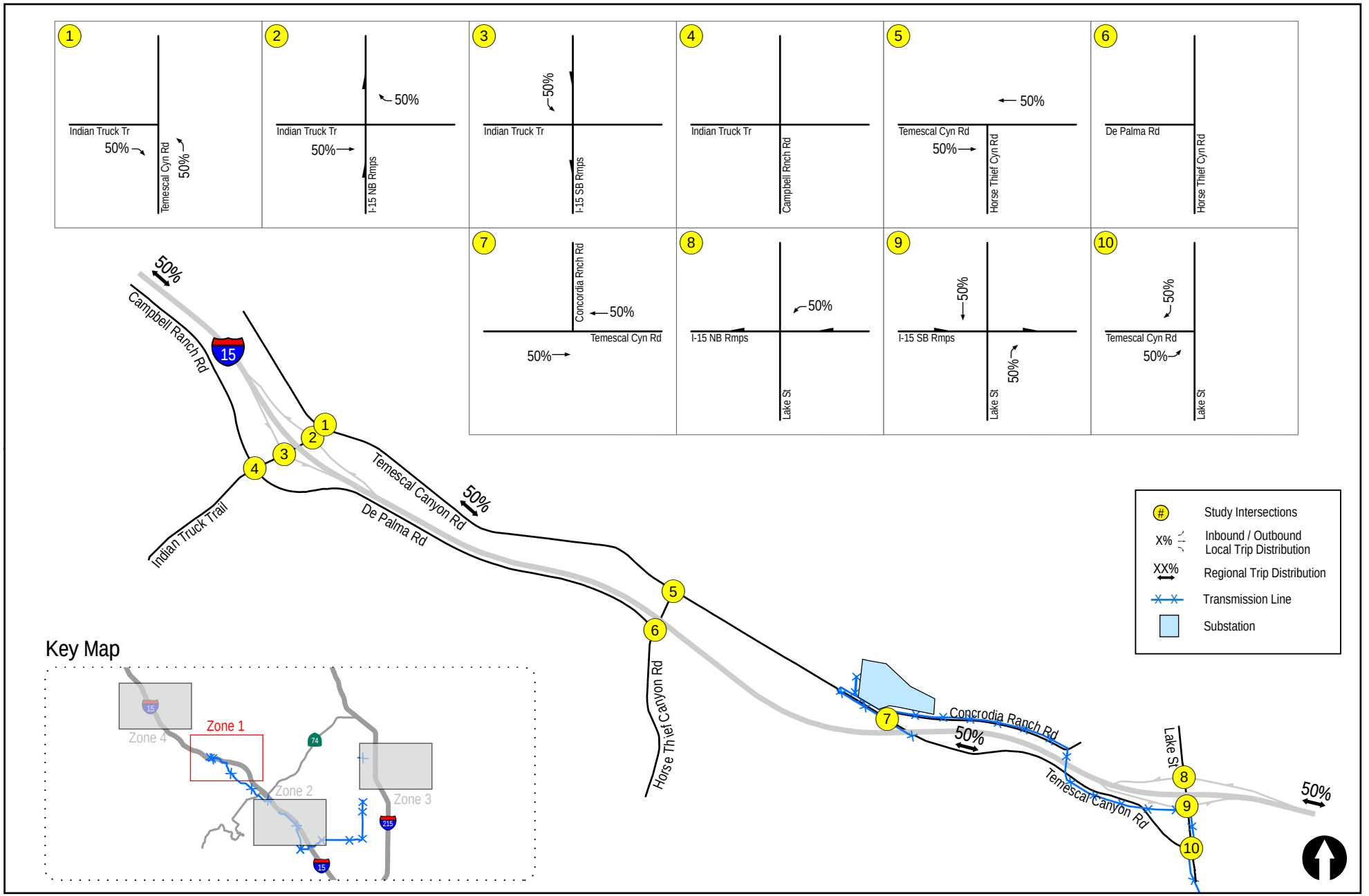

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Figure 7-1a

Project Traffic Distribution - Zone 1 Alberhill Substation
(Construction Workers)

ALBERHILL SYSTEM PROJECT

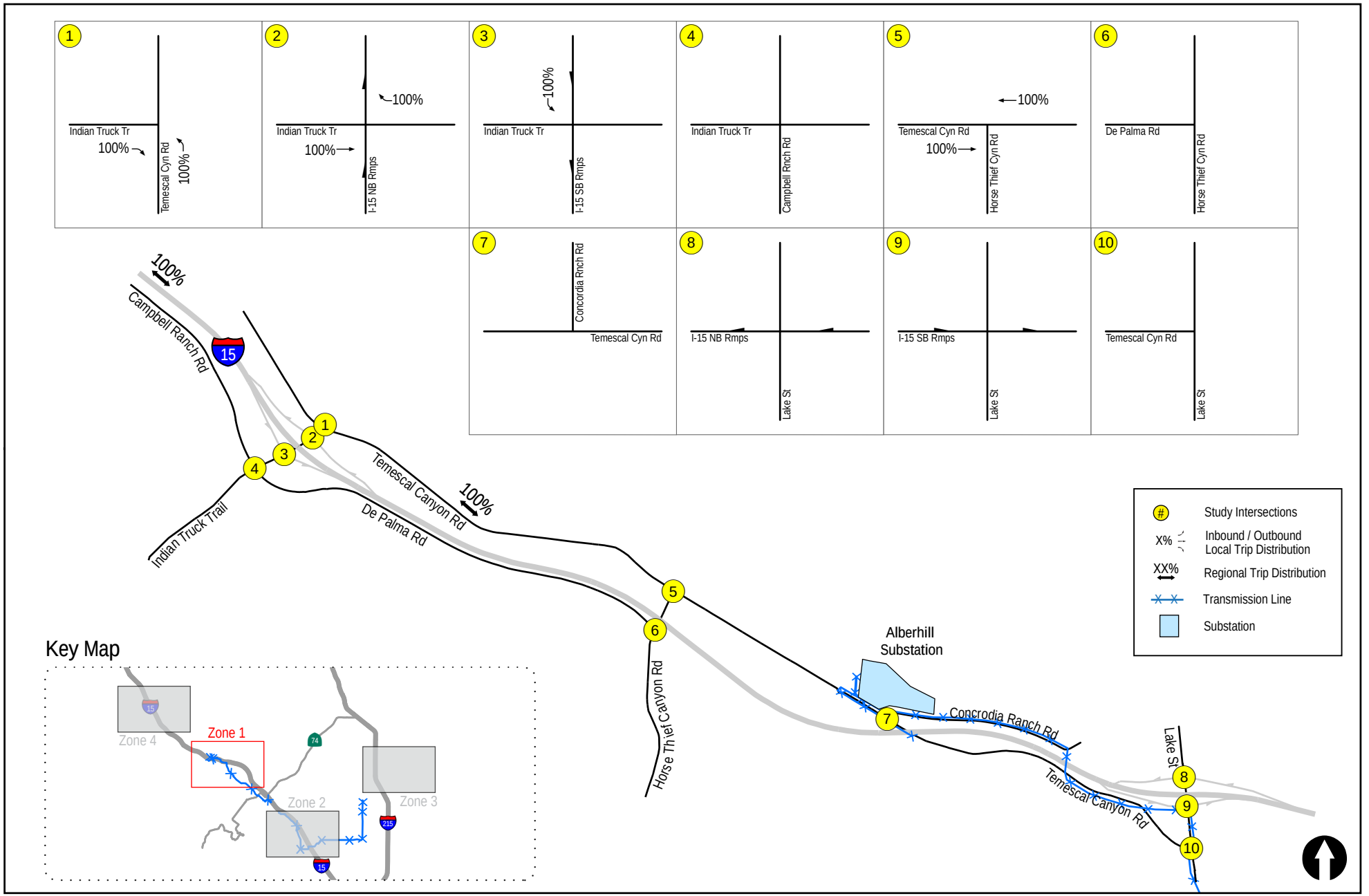

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Figure 7-1b

Project Traffic Distribution - Zone 1 Alberhill Substation

(Heavy Vehicles - Dirt Import)

ALBERHILL SYSTEM PROJECT

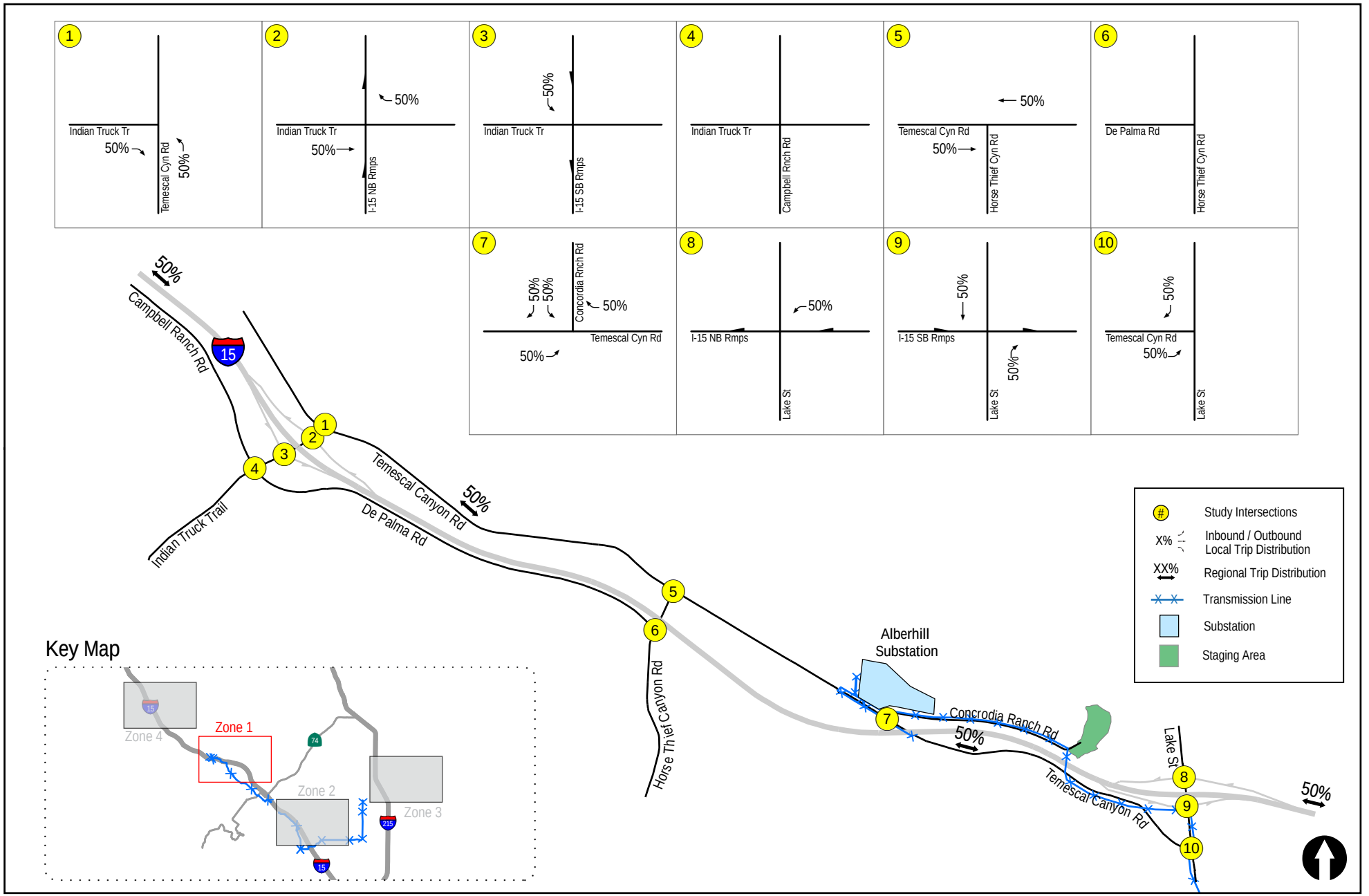

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Figure 7-1c

Project Traffic Distribution - Zone 1 Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

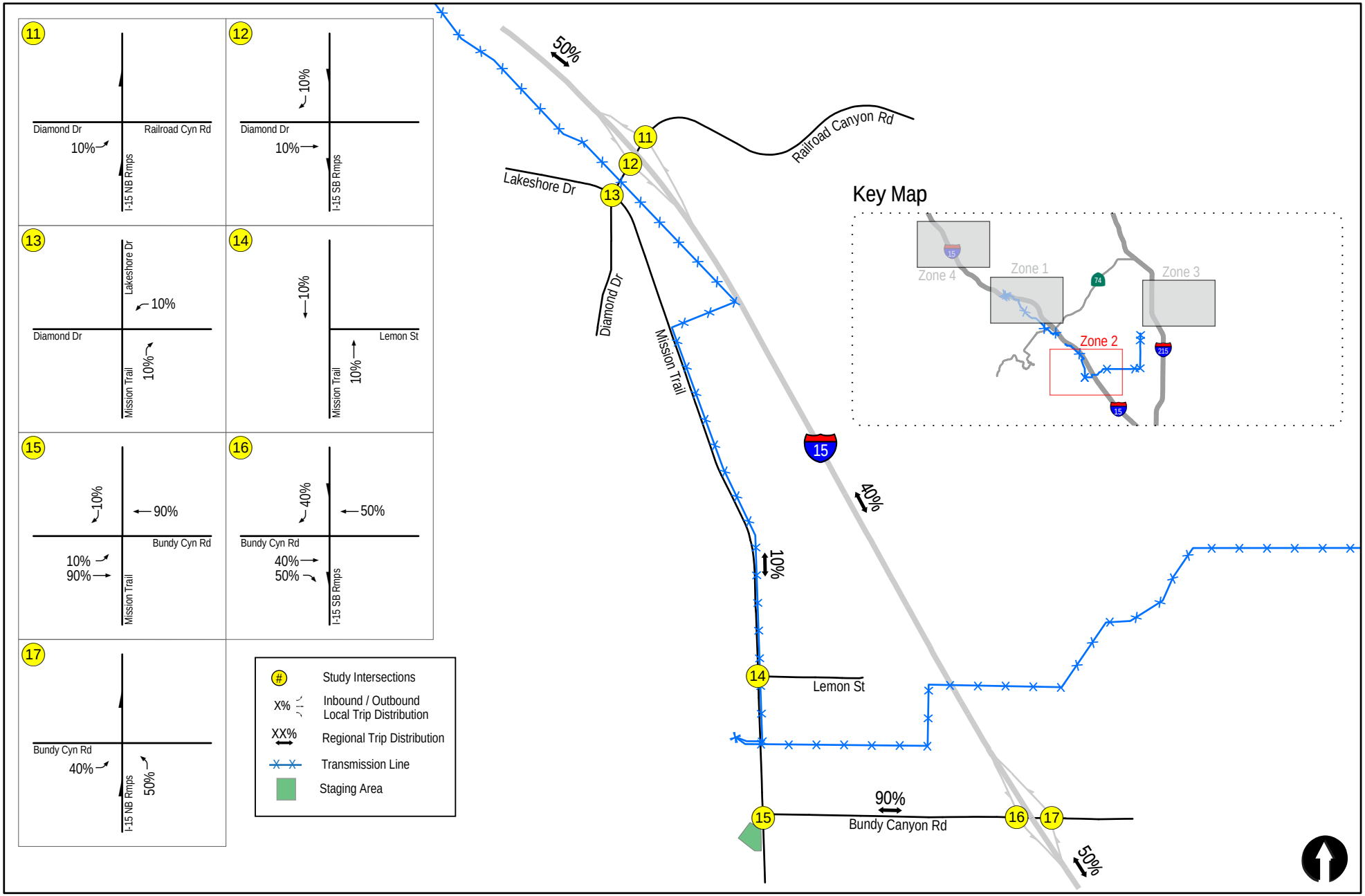

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Figure 7-2

Project Traffic Distribution - Zone 2 Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

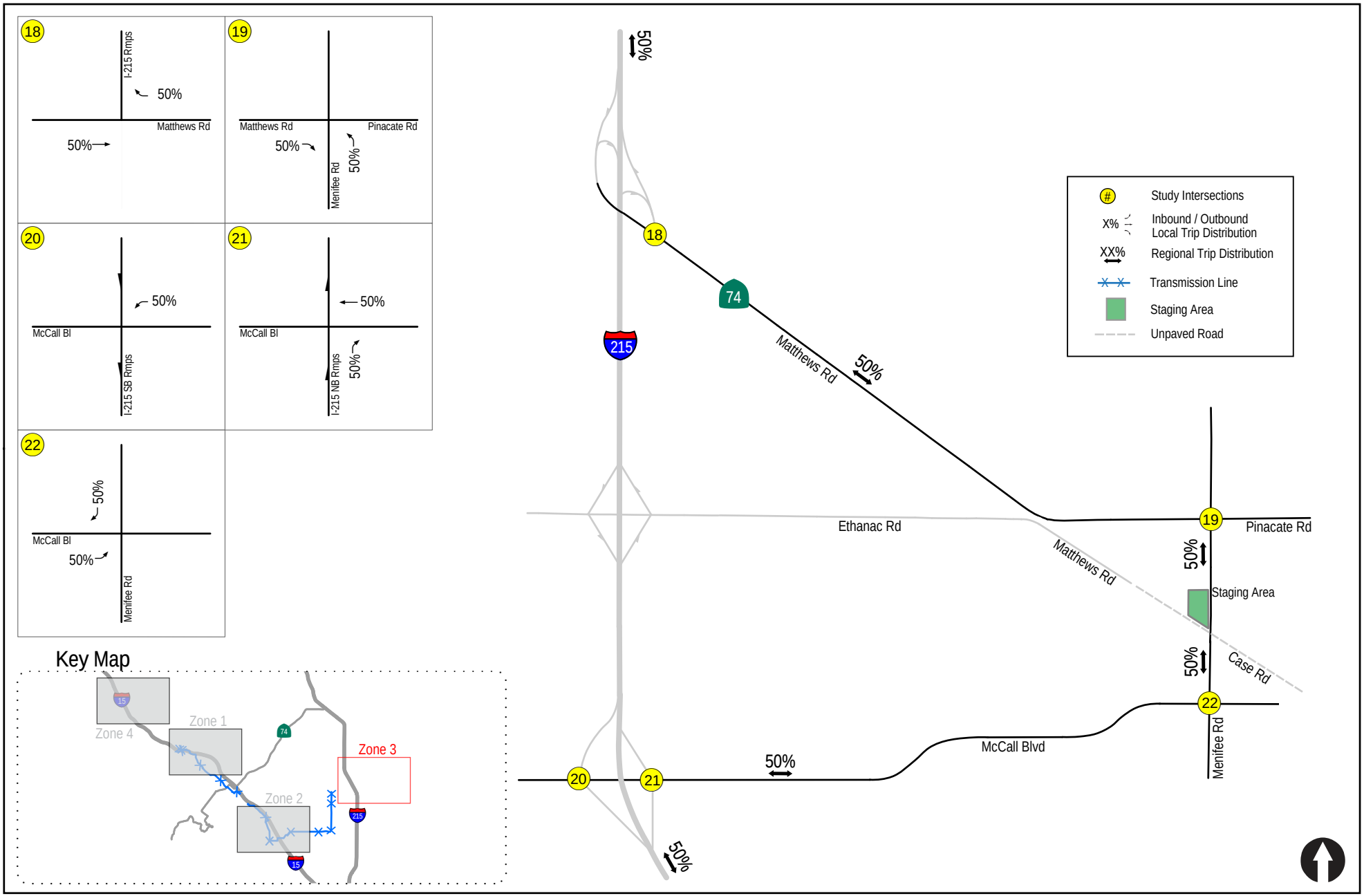

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Figure 7-3

Project Traffic Distribution - Zone 3 Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

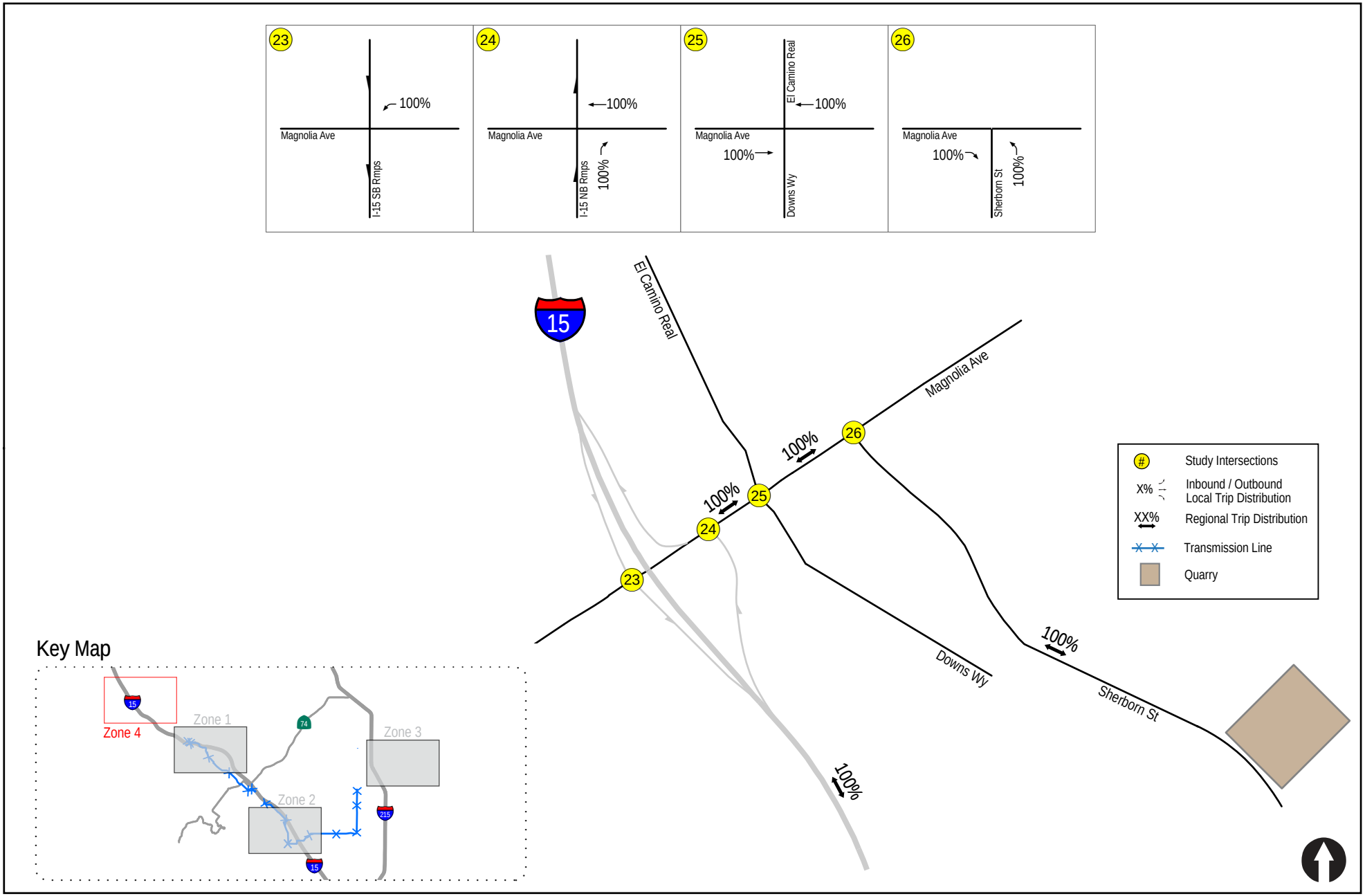

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Figure 7-4

Project Traffic Distribution - Zone 4 Quarry
(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

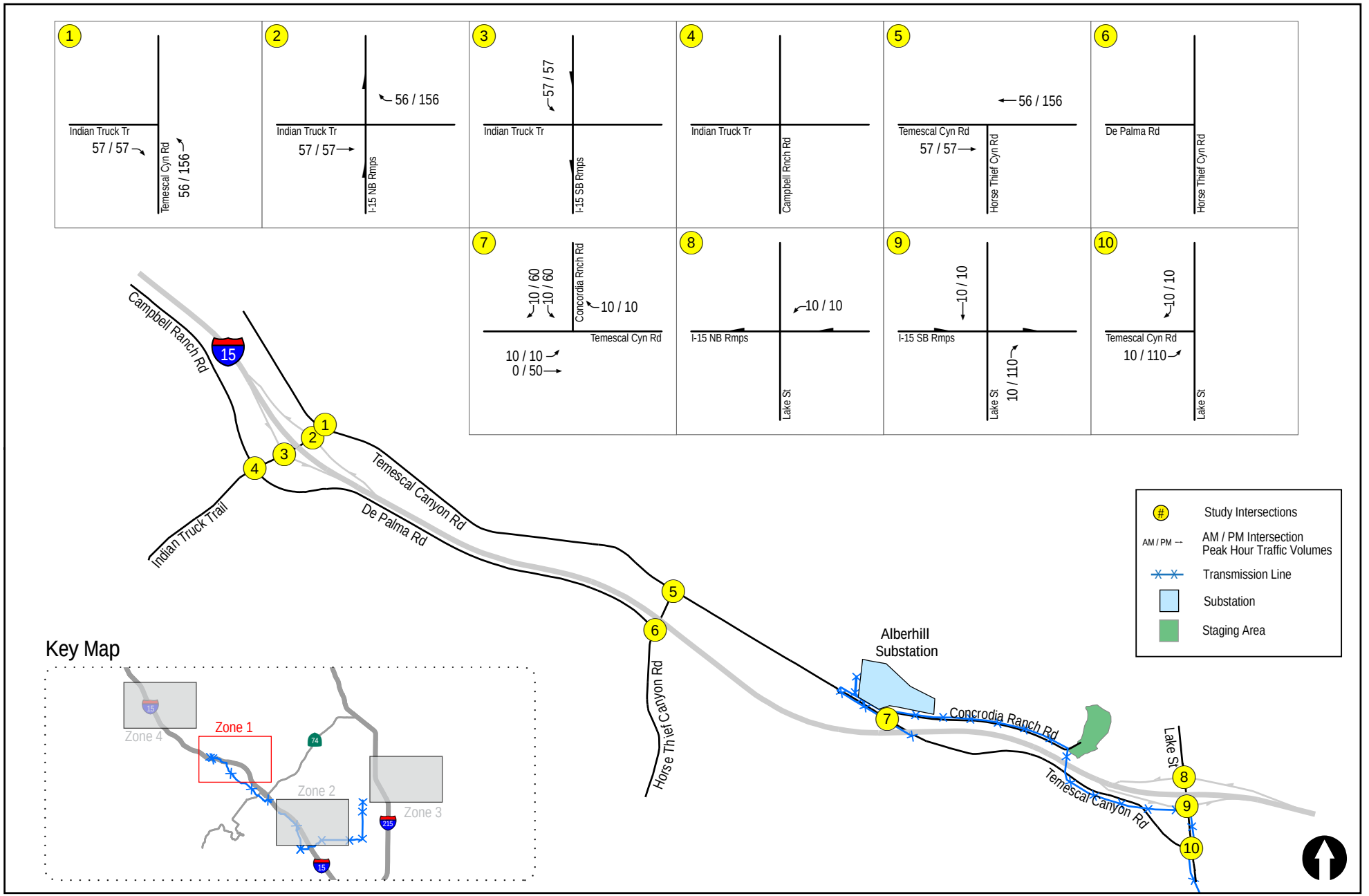

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Figure 7-5

Project Traffic Volumes - Zone 1 Alberhill Substation & Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

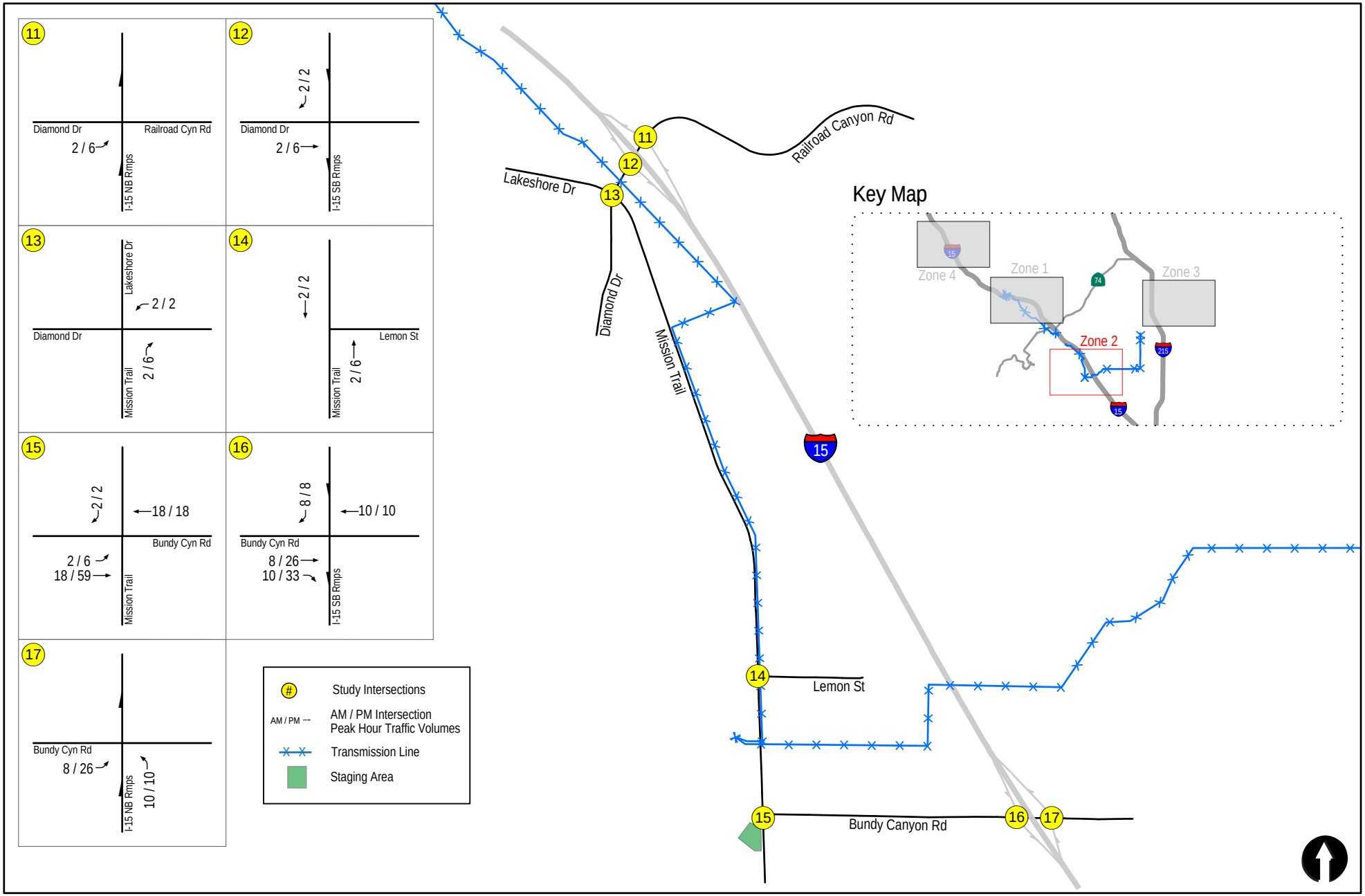

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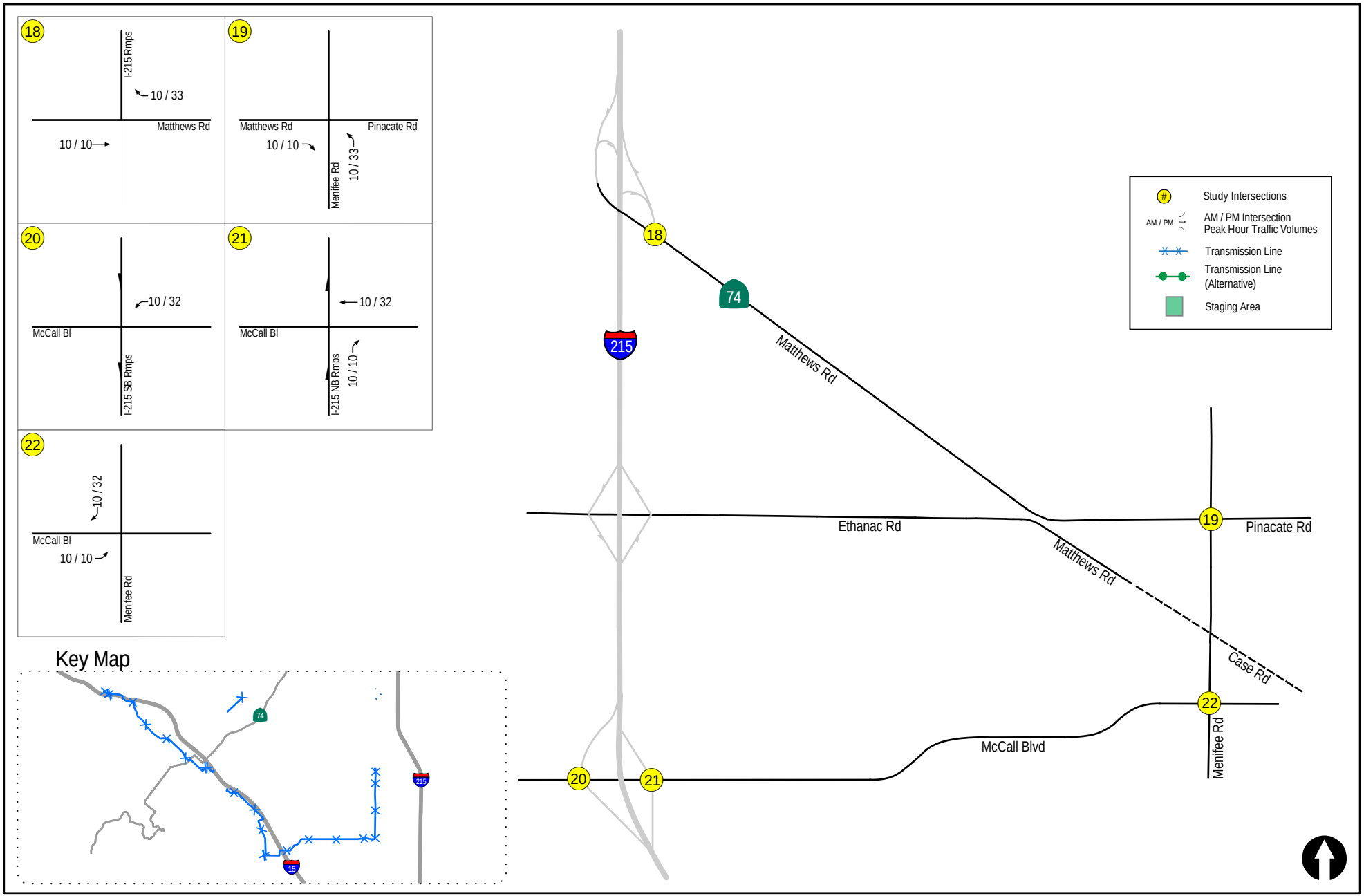
Figure 7-6

Project Traffic Volumes - Zone 2 Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT



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Date: 07/08/15

Figure 7-7

Project Traffic Volumes - Zone 3 Staging Area
(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

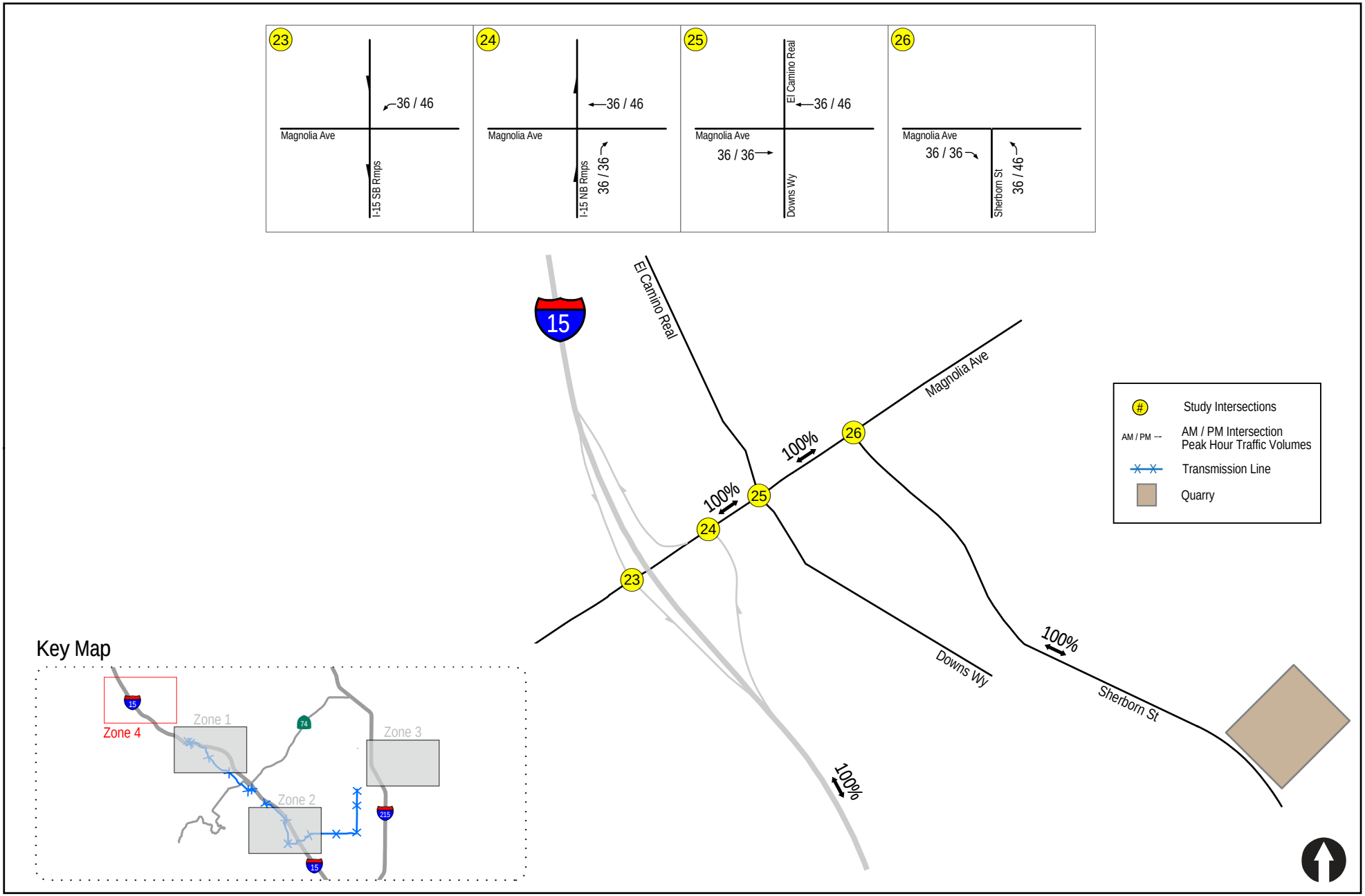

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Figure 7-8

Project Traffic Volumes - Zone 4 Quarry
(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

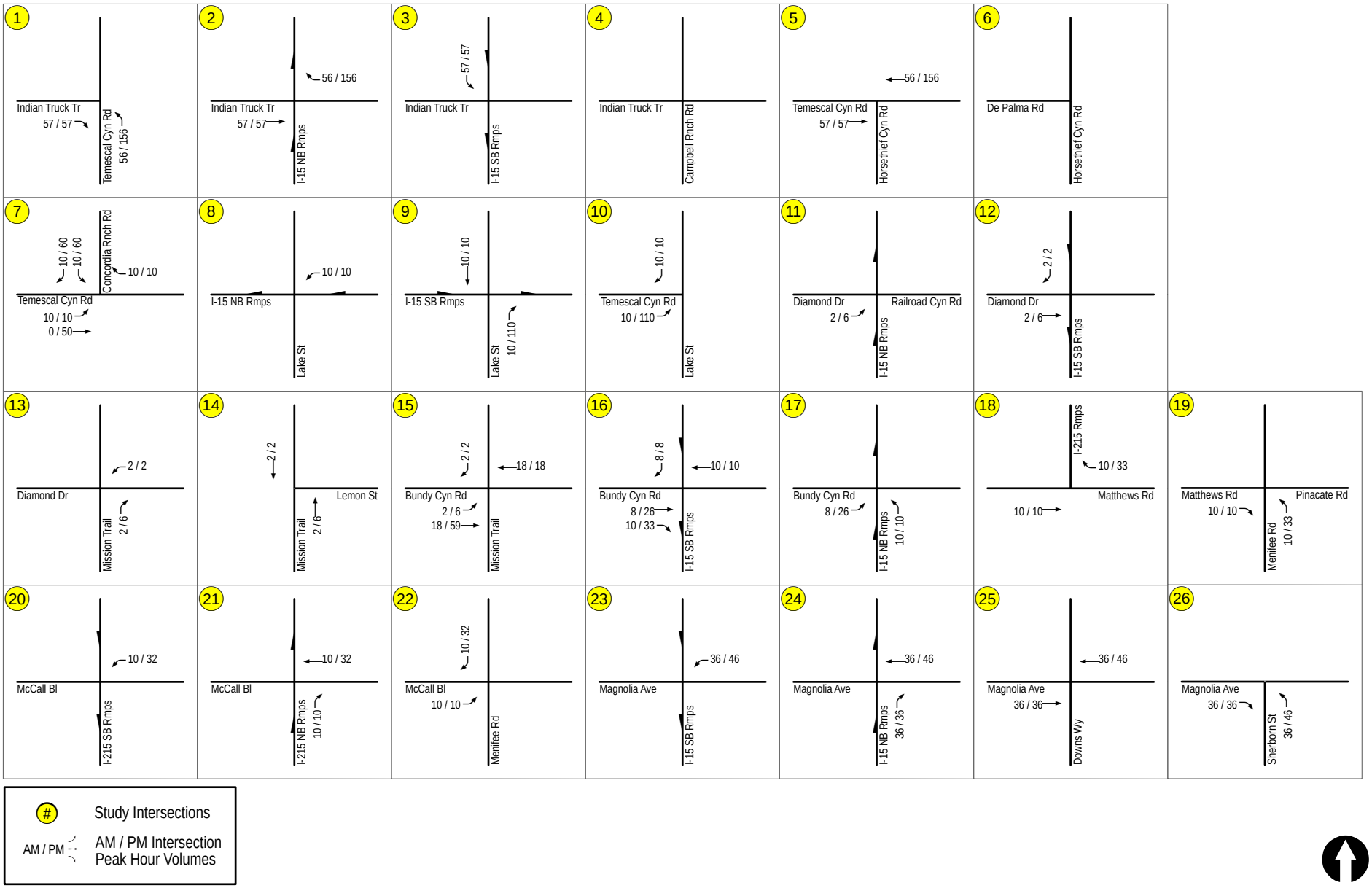

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Figure 7-9

Total Project Traffic Volumes

ALBERHILL SYSTEM PROJECT

8.0 EXISTING + PROJECT ANALYSIS

The California Environmental Quality Act (CEQA) Guidelines and recent court cases suggest the assessment of existing (ground) conditions with project build-out conditions. Thus, the Existing + Project analysis presumes the full build out of the project under the existing environmental conditions (existing traffic volumes, existing roadway infrastructure, and existing surrounding land uses).

Project trip distribution and assignment for the Existing + Project scenario was assumed to be the same as for the Near-Term scenario. ***Figure 8–1*** illustrates the Existing + Project traffic volumes.

8.1 Existing + Projects

Table 8–1 summarizes the Existing + Project intersections level of service. As seen in *Table 8–1*, all intersections were calculated to continue to operate at LOS D or better under Existing + Project conditions with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Based on the LOS thresholds outlined in *Section 5.0*, **significant impacts** are identified at the following intersections as they are calculated to operate at a deficient LOS:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS E during the PM peak hour)

Appendix D contains the Existing + Project intersection analysis worksheets.

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 1* – Alberhill Substation and Staging Area**										
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	D	Signal	AM	49.6	D	49.9	D	0.3	-
				PM	43.2	D	47.8	D	4.6	-
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	D	Signal	AM	38.6	D	38.7	D	0.1	-
				PM	31.6	C	32.0	C	0.4	-
3. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	D	Signal	AM	25.2	C	29.5	C	4.3	-
				PM	29.7	C	29.8	C	0.1	-
4. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	D	Signal	AM	38.7	D	38.7	D	0.0	-
				PM	37.2	D	37.2	D	0.0	-
5. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	C	OWSC[d]	AM	11.2	B	12.7	B	1.5	-
				PM	11.7	B	14.7	B	3.0	-
6. Horse Thief Canyon Rd/ De Palma Rd	Riverside County	C	AWSC[e]	AM	9.6	A	9.6	A	0.0	-
				PM	11.3	B	11.3	B	0.0	-
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	C	OWSC	AM	9.0	A	9.5	A	0.5	-
				PM	9.8	A	11.3	B	1.5	-
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM	**374.9**	**F**	**429.6**	**F**	**54.7**	**Yes**
				PM	18.7	C	19.4	C	0.7	-
9. Lake St/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM	17.8	C	18.1	C	0.3	-
				PM	25.2	D	26.4	D	1.2	-
10. Lake St/ Temescal Canyon Rd	City of Lake Elsinore	D	Signal	AM	7.8	A	8.0	A	0.2	-
				PM	13.8	B	20.5	C	6.7	-

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 2* – Staging Area**										
11. I-15 Northbound Ramps/ Railroad Canyon Rd	City of lake Elsinore / Caltrans	D	Signal	AM	21.5	C	21.6	C	0.1	-
				PM	27.0	C	27.1	C	0.1	-
12. I-15 Southbound Ramps/ Diamond Dr	City of lake Elsinore / Caltrans	D	Signal	AM	37.7	D	37.8	D	0.1	-
				PM	43.5	D	43.5	D	0.0	-
13. Diamond Dr/ Lakeshore Dr/ Mission Trail	City of Lake Elsinore	D	Signal	AM	41.7	D	41.7	D	0.0	-
				PM	49.0	D	49.4	D	0.4	-
14. Mission Trail/ Lemon St	City of Wildomar	D	Signal	AM	6.1	A	6.1	A	0.0	-
				PM	6.0	A	6.0	A	0.0	-
15. Mission Trail/ Bundy Canyon Rd	City of Wildomar	D	Signal	AM	17.5	B	17.8	B	0.3	-
				PM	18.5	B	19.2	B	0.7	-
16. I-15 Southbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	27.2	C	28.8	C	1.6	-
				PM	33.0	C	33.7	C	0.7	-
17. I-15 Northbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	22.6	C	23.2	C	0.6	-
				PM	38.6	D	39.7	D	1.1	-
***Zone 3* – Staging Area**										
18. I-215 Northbound Ramps/ Matthews Rd (SR 74)	City of Perris / Caltrans	D	Signal	AM	8.6	A	8.6	A	0.0	-
				PM	8.1	A	8.1	A	0.0	-
19. Menifee Rd/ Pinacate Rd (SR 74)	City of Menifee / Caltrans	D	Signal	AM	**144.6**	**F**	**144.6**	**F**	0.0	-
				PM	53.4	D	**55.3**	**E**	**1.9**	**Yes**
20. McCall Blvd/ I-215 Southbound Ramps	City of Menifee / Caltrans	D	Signal	AM	37.7	D	38.0	D	0.3	-
				PM	32.5	C	33.7	C	1.2	-

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
21. McCall Blvd/ I-215 Northbound Ramps	City of Menifee	D	Signal	AM	23.1	C	23.3	C	0.2	-
				PM	37.0	D	37.5	D	0.5	-
22. McCall Blvd/ Menifee Rd	City of Menifee	D	Signal	AM	39.1	D	39.6	D	0.5	-
				PM	29.1	C	29.2	C	0.1	-
***Zone 4* – Corona Quarry**										
23. I-15 Southbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	36.4	D	37.3	D	0.9	-
				PM	43.9	D	44.6	D	0.7	-
24. I-15 Northbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	28.9	C	29.4	C	0.5	-
				PM	23.4	C	23.7	C	0.3	-
25. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	38.1	D	38.9	D	0.8	-
				PM	30.9	C	31.4	C	0.5	-
26. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	15.8	B	16.0	B	0.2	-
				PM	20.3	C	20.5	C	0.2	-

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.
e. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

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

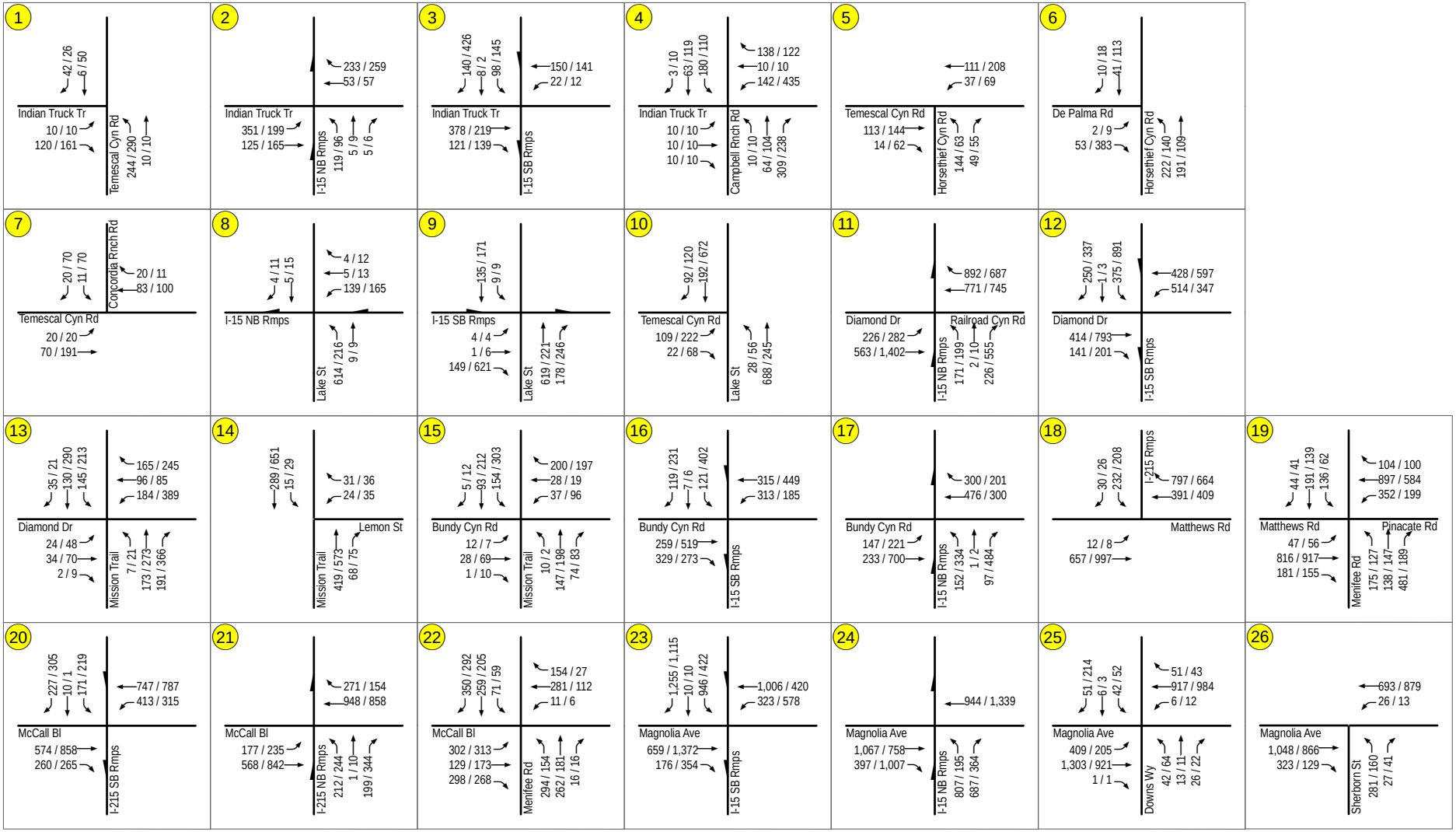

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Figure 8-1

Existing + Project Traffic Volumes

ALBERHILL SYSTEM PROJECT

9.0 CUMULATIVE PROJECTS

Cumulative projects represent reasonably foreseeable planned development that contributes to background traffic conditions for the Near-Term scenario. Based on a review of potential development in the area, the Valley-Ivyglen Project was considered and included in this traffic study. The following is a brief description of the cumulative project.

VALLEY-IVYGLEN PROJECT

The proposed VIG project would involve the construction of a new, single-circuit 115-kV sub-transmission line and fiber optic line. The transmission line would be approximately 27-miles long and be constructed within approximately 23 miles of new right-of-way (ROW). The applicant estimates that construction of the proposed Valley–Ivyglen Project would take approximately 27 months.

The VIG project proposes to use temporary staging areas, which include a combination of existing substations (Valley and Ivyglen) and undeveloped parcels. Temporary staging areas would be used as a reporting location for workers and to stage equipment and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic-intensive of the construction activity.

The Valley-Ivyglen Project study area includes four (4) zones. All zones includes the construction of a staging areas, which comprises of 125 construction worker vehicles and 28 heavy vehicles generating 390 average daily trips (ADT's).

Figure 9–1 shows the cumulative projects traffic volumes.

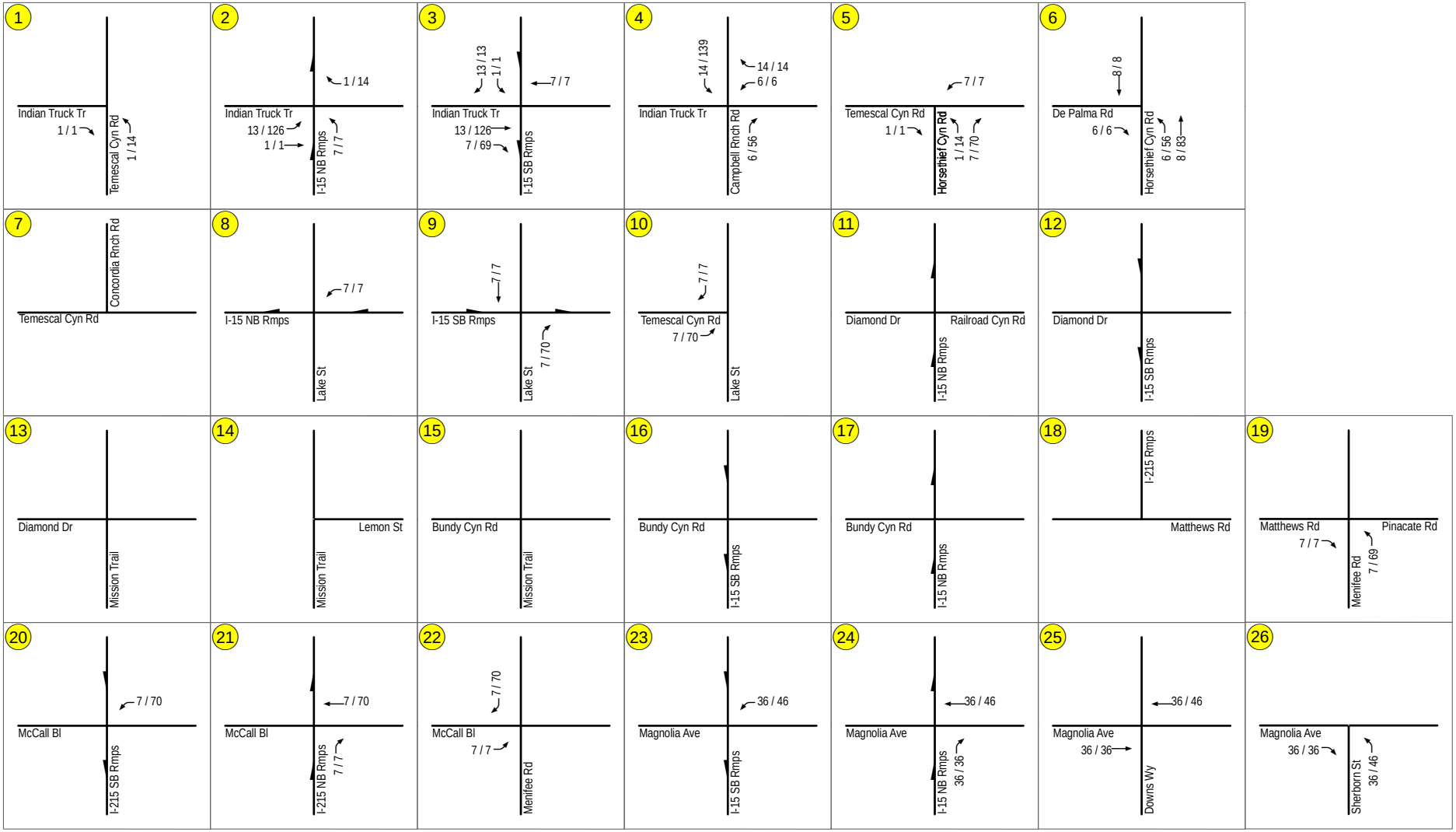

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Figure 9-1

Cumulative Projects Traffic Volumes

ALBERHILL SYSTEM PROJECT

10.0 NEAR-TERM ANALYSIS

The following section presents the analysis of study area intersections under Near-Term conditions without and with the Proposed Project.

10.1 Near-Term Traffic Volumes

Near-Term traffic volumes were calculated for the study area by adding the Near-Term cumulative project volumes onto the existing volumes. The traffic volumes represent LLG's best efforts of forecasting Near-Term conditions with the most recent information available at the time this report was prepared.

The volumes were also checked for consistency between intersections, where no driveways or roadways exist between intersections.

Figure 10–1 shows the Near-Term traffic volumes. ***Figure 10–2*** shows the Near-Term + Project traffic volumes.

10.2 Near-Term Operations

Table 10–1 summarizes the peak hour intersection operations for the Near-Term scenario. As seen in *Table 10–1*, all study area intersections are calculated to operate at LOS D or better with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Appendix E contains the Near-Term intersection analysis worksheets.

10.3 Near-Term + Project Operations

Table 10–1 summarizes the peak hour intersection operations for the Near-Term + Project scenario. As seen in *Table 10–1*, all study area intersections are calculated to continue to operate at LOS D or better with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Based on the LOS thresholds outlined in *Section 5.0*, **significant impacts** are identified at the following intersections as they are calculated to continue to operate at a deficient LOS:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Appendix F contains the Near-Term + Project intersection analysis worksheet

TABLE 10–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 1* – Alberhill Substation and Staging Area**										
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	D	Signal	AM	49.7	D	49.9	D	0.2	-
				PM	44.0	D	48.6	D	4.6	-
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	D	Signal	AM	38.9	D	39.3	D	0.4	-
				PM	34.7	C	35.3	D	0.6	-
3. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	D	Signal	AM	25.3	C	29.6	C	4.3	-
				PM	31.5	C	31.6	C	0.1	-
4. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	D	Signal	AM	39.5	D	39.5	D	0.0	-
				PM	45.7	D	45.7	D	0.0	-
5. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	C	OWSC[d]	AM	11.5	B	13.0	B	1.5	-
				PM	12.2	B	15.5	C	3.3	-
6. Horse Thief Canyon Rd/ De Palma Rd	Riverside County	C	AWSC[e]	AM	9.6	A	9.6	A	0.0	-
				PM	12.8	B	12.8	B	0.0	-
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	C	OWSC	AM	9.0	A	9.5	A	0.5	-
				PM	9.8	A	11.3	B	1.5	-
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM	**415.4**	**F**	**462.9**	**F**	**47.5**	**Yes**
				PM	19.2	C	19.9	C	0.7	-
9. Lake St/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM	18.0	C	18.3	C	0.3	-
				PM	26.0	D	27.3	D	1.3	-
10. Lake St/ Temescal Canyon Rd	City of Lake Elsinore	D	Signal	AM	8.0	A	8.2	A	0.2	-
				PM	17.2	B	31.7	C	14.5	-

TABLE 10–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 2* – Staging Area**										
11. I-15 Northbound Ramps/ Railroad Canyon Rd	City of lake Elsinore / Caltrans	D	Signal	AM	21.5	C	21.6	C	0.1	-
				PM	27.0	C	27.1	C	0.1	-
12. I-15 Southbound Ramps/ Diamond Dr	City of lake Elsinore / Caltrans	D	Signal	AM	37.7	D	37.8	D	0.1	-
				PM	43.5	D	43.5	D	0.0	-
13. Diamond Dr/ Lakeshore Dr/ Mission Trail	City of Lake Elsinore	D	Signal	AM	41.7	D	41.7	D	0.0	-
				PM	49.0	D	49.4	D	0.4	-
14. Mission Trail/ Lemon St	City of Wildomar	D	Signal	AM	6.1	A	6.1	A	0.0	-
				PM	6.0	A	6.0	A	0.0	-
15. Mission Trail/ Bundy Canyon Rd	City of Wildomar	D	Signal	AM	17.5	B	17.8	B	0.3	-
				PM	18.5	B	19.2	B	0.7	-
16. I-15 Southbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	27.2	C	28.8	C	1.6	-
				PM	33.0	C	33.7	C	0.7	-
17. I-15 Northbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	22.6	C	23.2	C	0.6	-
				PM	38.6	D	39.7	D	1.1	-
***Zone 3* – Staging Area**										
18. I-215 Northbound Ramps/ Matthews Rd (SR 74)	City of Perris / Caltrans	D	Signal	AM	8.6	A	8.6	A	0.0	-
				PM	8.1	A	8.1	A	0.0	-
19. Menifee Rd/ Pinacate Rd (SR 74)	City of Menifee / Caltrans	D	Signal	AM	**144.6**	**F**	**144.6**	**F**	0.0	-
				PM	**58.6**	**E**	**62.9**	**E**	**4.3**	**Yes**
20. McCall Blvd/ I-215 Southbound Ramps	City of Menifee / Caltrans	D	Signal	AM	37.9	D	38.2	D	0.3	-
				PM	35.1	D	36.4	D	1.3	-

TABLE 10–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
21. McCall Blvd/ I-215 Northbound Ramps	City of Menifee	D	Signal	AM	23.2	C	23.5	C	0.3	-
				PM	37.4	D	38.0	D	0.6	-
22. McCall Blvd/ Menifee Rd	City of Menifee	D	Signal	AM	39.5	D	40.0	D	0.5	-
				PM	29.4	C	29.6	C	0.2	-
***Zone 4* – Corona Quarry**										
23. I-15 Southbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	37.3	D	38.8	D	1.5	-
				PM	44.6	D	45.9	D	1.3	-
24. I-15 Northbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	29.4	C	29.9	C	0.5	-
				PM	23.7	C	24.1	C	0.4	-
25. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	38.9	D	39.9	D	1.0	-
				PM	31.4	C	35.3	D	3.9	-
26. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	16.0	B	16.2	B	0.2	-
				PM	20.5	C	20.8	C	0.3	-

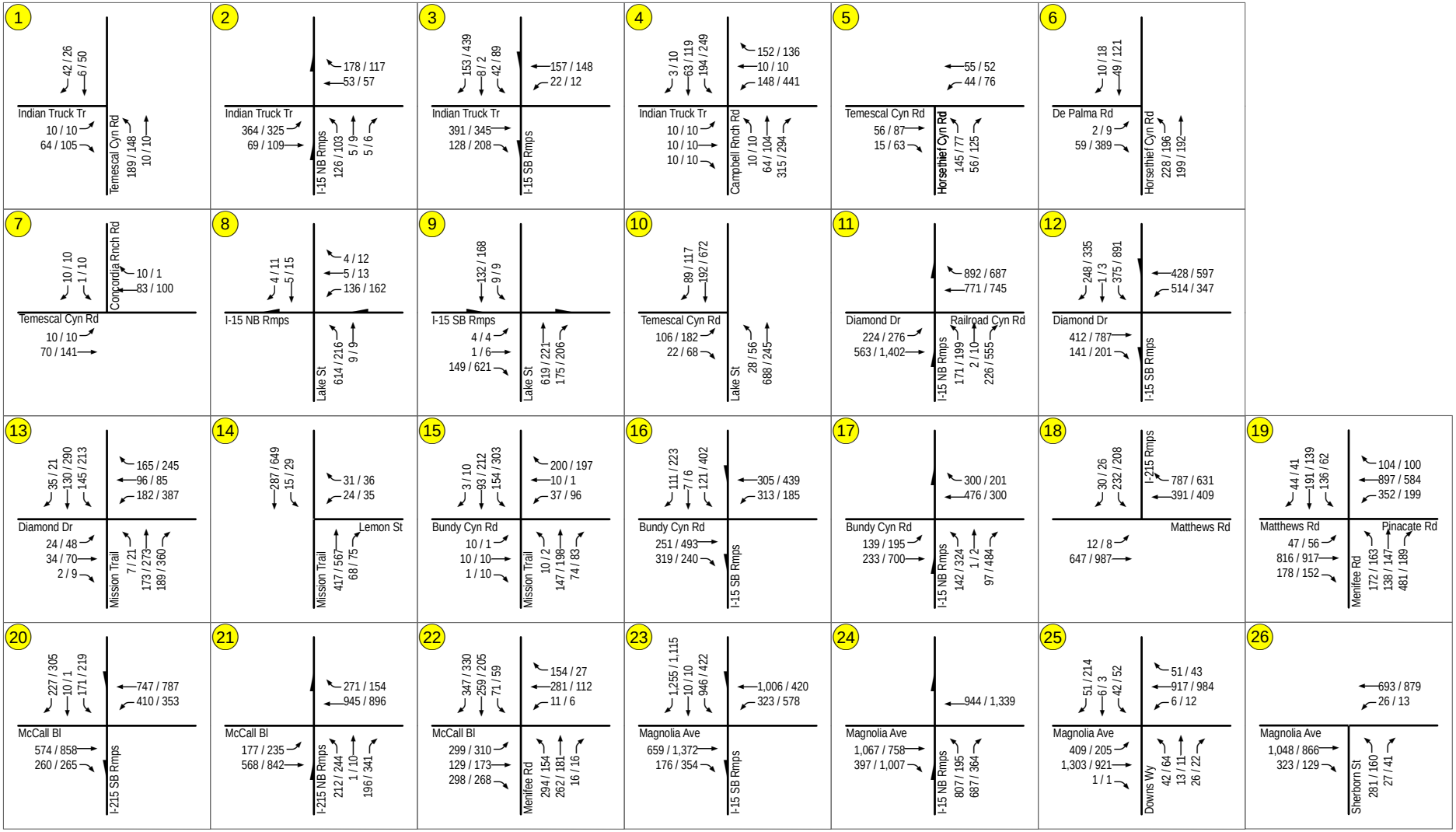
Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.
e. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

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



LINSCOTT LAW & GREENSPAN engineers

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Date: 07/28/15

Figure 10-1

Near-Term Traffic Volumes

ALBERHILL SYSTEM PROJECT

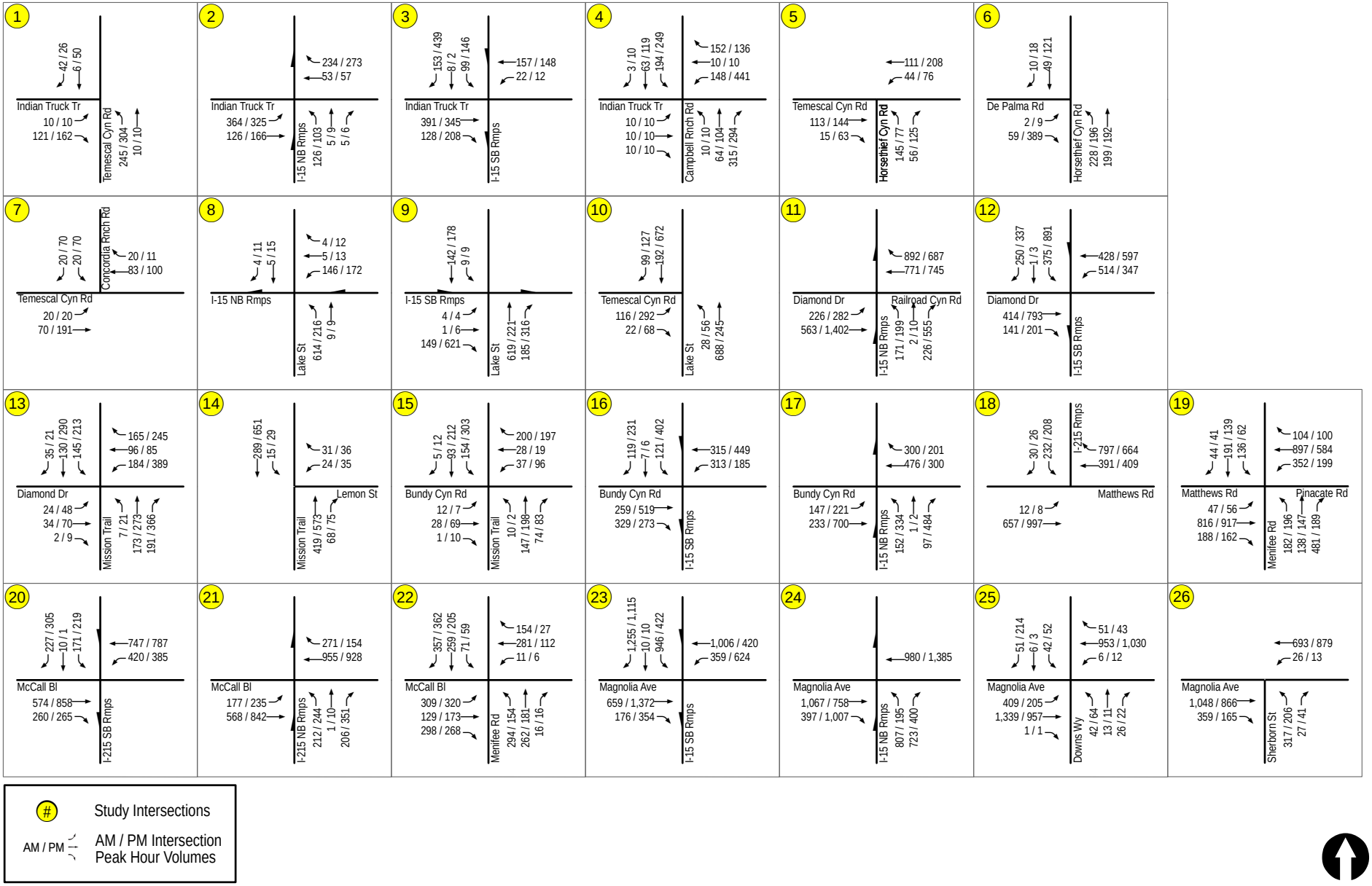

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Figure 10-2

Near-Term + Project Traffic Volumes

ALBERHILL SYSTEM PROJECT

11.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Per the significance criteria and the analysis methodology presented in this report, project-related traffic is calculated to cause two (2) significant impacts within the study area. The following section identifies the significance of impact and recommended mitigation measure to address operating deficiency. This improvement, if implemented, would improve efficiency of traffic flow and return the intersection operation to below a level of significance.

11.1 Significance of Impacts

Based on the traffic impact guidelines outlined in *Section 5.0*, a significant impact is identified at the following intersection:

- Lake St/ I-15 Northbound Ramps (LOS F in the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

11.2 Mitigation Measures

The following summarizes the recommended mitigation measure:

LAKE ST/ I-15 NORTHBOUND RAMPS

To mitigate the significant impact at the Lake Street/ I-15 NB ramp intersection, the project proposes to restrict construction traffic at this intersection during the AM peak hour. Given that the construction workers arrive prior to the commuter AM peak hour (7 AM to 9 AM), the restriction would apply to heavy vehicles only. The project should divert all heavy vehicles to the I-15/ Indian Truck Trail interchange during the AM peak hour. The contractor should be required to alert truck drivers of this condition and should install temporary signage on Lake Street to this effect.

As show in ***Tables 11–1*** and ***11–2***, with the implementation of the identified mitigation, no project traffic will utilize the off-ramp at the I-15 NB ramps/ Lake Street intersection during the commuter AM peak hour. Therefore, with the proposed mitigation, no traffic impacts are calculated as the level of service are reduced to pre-project levels.

As show in *Tables 11–1* and *11–2*, with the additional rerouted project traffic at the I-15/ Indian Truck Trail interchange, no impacts are identified at the affected intersections as the level of service are reduced to pre-project levels.

MENIFEE ROAD/ SR 74

To mitigate the significant impact at the Menifee Road/ SR 74 intersection, the project proposes to restrict construction traffic during the PM peak hour. The construction traffic would exit the staging area prior to or after the PM peak hour but not during the PM peak hour (4 – 6 p.m.). Alternatively, the project may also consider providing an alternative access route via Case road to I-215/ Ethanac Road interchange. Therefore, restriction of traffic, alternative access or any combination thereof, would reduce the level of service to pre-project levels.

As show in *Tables 11–1* and *11–2*, with the implementation of the identified mitigation, no traffic impacts are calculated as the level of service are reduced to pre-project levels.

Appendix G contains the post mitigation intersection calculation sheets.

TABLE 11–1
EXISTING + PROJECT MITIGATION ANALYSIS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Existing + Project Mitigation		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS	Delay	LOS		
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	LOS D	Signal	AM	49.6	D	49.9	D	50.0	D	0.4	–
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	38.6	D	38.7	D	38.8	D	0.2	–
5. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC[d]	AM	11.2	B	12.7	B	12.8	B	1.6	–
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC	AM	9.0	A	9.5	A	9.5	A	0.5	–
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC	AM	**374.9**	**F**	**429.6**	**F**	**374.9**	**F**	0.0	–
19. Menifee Rd/ SR 74	City of Menifee	LOS D	Signal	PM	53.4	D	**55.3**	**E**	53.4	D	0.0	–

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

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

TABLE 11–2
NEAR-TERM + PROJECT MITIGATION ANALYSIS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Near-Term + Project Mitigation		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS	Delay	LOS		
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	LOS D	Signal	AM	49.7	D	49.9	D	50.0	D	0.3	–
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	38.9	D	39.3	D	39.9	D	1.0	–
5. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC[d]	AM	11.5	B	13.0	B	13.2	B	1.7	–
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC	AM	9.0	A	9.5	A	9.5	A	0.5	–
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC	AM	**415.4**	**F**	**462.9**	**F**	**415.4**	**F**	0.0	–
19. Menifee Rd/ SR 74	City of Menifee	LOS D	Signal	PM	**58.6**	**E**	**62.9**	**E**	**58.6**	**E**	0.0	–

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

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

12.0 CONSTRUCTION MANAGEMENT PLAN

Construction traffic associated with trucks and employees will include some minor traffic delays; however, no significant impacts are anticipated with implementation of the proposed mitigation implemented. Nevertheless, to help further reduce the impact of construction-related traffic, it is recommended that Construction Management Plan (CMP) be implemented. The CMP should be developed in coordination with the responsible jurisdiction and at a minimum, address the following:

- **Staging Areas**
  - Identify the routes that workers and construction vehicles will utilize for the delivery of construction materials (i.e. lumber, tiles piping, windows, dirt import, etc.), to access the staging areas.
  - Ensure adequate sight distance per respective jurisdiction standards are provided at staging area locations to ensure proper line of sight is available for construction vehicular and truck traffic.
  - Delivery of materials is recommended to occur off-peak, wherever possible.
  - Encourage carpooling among construction workers to reduce construction traffic demand.
  - All construction-related parking at the staging areas should be kept out of the adjacent public roadways.

- **Transmission Lines/ Fiber Optic Lines Construction**
  - All haul routes should be kept clean and free of debris including but not limited to gravel and dirt as a result of its operations.
  - Hauling or transport of oversize loads should occur off-peak wherever possible.
  - Construction activities completed within public street rights-of-way would require the preparation of a Traffic Control Plan. This Plan should be prepared according to the standards established in the current California Manual on Uniform Traffic Control Device (MUTCD) as well as each respective jurisdiction's requirements.
  - Construction activity that requires partial lane closures is recommended to occur only during off-peak hours and would require traffic control personnel (such as flagmen) to ensure smooth and efficient flow of traffic.
  - Construction activity that requires full roadway closures is recommended to occur only during nights and weekends. This would require the preparation of a "detour" plan to ensure adequate alternate routes are planned.

- **Project Mitigation**
  - As part of the project traffic mitigation at the Lake Street/ I-15 NB ramp intersection, restrict project traffic at this interchange and re-route them to the I-15/ Indian Truck Trail interchange during the AM peak hour.
  - As part of the project traffic mitigation at the Menifee Road/ SR 74 intersection, the project proposes to restrict construction traffic during the PM peak hour (4 – 6 p.m.).

The construction traffic would exit the staging area prior to or after the PM peak hour but not during the PM peak hour. Alternatively, the project may also consider providing an alternative access route via Case road to I-215/ Ethanac Road interchange. Therefore, restriction of traffic, alternative access or any combination thereof, would reduce the level of service to pre-project levels.

ATTACHMENT B

EXISTING + PROJECT INTERSECTION ANALYSIS WORKSHEETS

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	120	244	10	6	42
Future Volume (veh/h)	10	120	244	10	6	42
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	130	265	11	7	46
Adj No. of Lanes	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	821	378	297	1275	891	729
Arrive On Green	0.24	0.24	0.17	0.68	0.48	0.48
Sat Flow, veh/h	3442	1583	1774	1863	1863	1523
Grp Volume(v), veh/h	11	130	265	11	7	46
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1863	1863	1523
Q Serve(g_s), s	0.3	8.9	19.0	0.2	0.3	2.1
Cycle Q Clear(g_c), s	0.3	8.9	19.0	0.2	0.3	2.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	821	378	297	1275	891	729
V/C Ratio(X)	0.01	0.34	0.89	0.01	0.01	0.06
Avail Cap(c_a), veh/h	821	378	696	1275	891	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	41.1	52.9	6.5	17.7	18.2
Incr Delay (d2), s/veh	0.0	2.5	9.0	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	8.5	10.1	0.1	0.1	0.9
LnGrp Delay(d),s/veh	37.8	43.5	62.0	6.5	17.8	18.4
LnGrp LOS	D	D	E	A	B	B
Approach Vol, veh/h	141			276	53	
Approach Delay, s/veh	43.1			59.8	18.3	
Approach LOS	D			E	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		94.0		36.0	26.8	67.2		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		89.0		31.0	51.0	33.0		
Max Q Clear Time (g_c+I1), s		2.2		10.9	21.0	4.1		
Green Ext Time (p_c), s		0.0		0.4	0.8	0.1		

Intersection Summary	
HCM 2010 Ctrl Delay	50.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	125	0	0	53	233	119	5	5	0	0	0
Future Volume (veh/h)	351	125	0	0	53	233	119	5	5	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	382	136	0	0	58	233	133	0	5			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	432	2015	0	0	1435	626	1255	0	545			
Arrive On Green	0.21	0.95	0.00	0.00	0.41	0.41	0.35	0.00	0.35			
Sat Flow, veh/h	3442	3632	0	0	3632	1544	3548	0	1541			
Grp Volume(v), veh/h	382	136	0	0	58	233	133	0	5			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1544	1774	0	1541			
Q Serve(g_s), s	14.0	0.3	0.0	0.0	1.3	13.7	3.3	0.0	0.3			
Cycle Q Clear(g_c), s	14.0	0.3	0.0	0.0	1.3	13.7	3.3	0.0	0.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	432	2015	0	0	1435	626	1255	0	545			
V/C Ratio(X)	0.88	0.07	0.00	0.00	0.04	0.37	0.11	0.00	0.01			
Avail Cap(c_a), veh/h	477	2015	0	0	1435	626	1255	0	545			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.99	0.99	0.00	0.00	0.69	0.69	1.00	0.00	1.00			
Uniform Delay (d), s/veh	50.5	1.4	0.0	0.0	23.4	27.1	28.2	0.0	27.2			
Incr Delay (d2), s/veh	16.6	0.1	0.0	0.0	0.0	1.2	0.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.6	0.1	0.0	0.0	0.6	6.0	1.6	0.0	0.1			
LnGrp Delay(d),s/veh	67.1	1.5	0.0	0.0	23.4	28.2	28.4	0.0	27.3			
LnGrp LOS	E	A			C	C	C		C			
Approach Vol, veh/h		518			291			138				
Approach Delay, s/veh		49.8			27.3			28.3				
Approach LOS		D			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		51.0		79.0			21.3	57.7
Change Period (Y+Rc), s		5.0		5.0			5.0	5.0
Max Green Setting (Gmax), s		46.0		74.0			18.0	51.0
Max Q Clear Time (g_c+I1), s		5.3		2.3			16.0	15.7
Green Ext Time (p_c), s		0.5		1.0			0.3	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	39.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	378	121	22	150	0	0	0	0	98	8	140
Future Volume (veh/h)	0	378	121	22	150	0	0	0	0	98	8	140
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	411	132	24	163	0				107	0	158
Adj No. of Lanes	0	3	1	1	2	0				1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2658	809	55	2096	0				587	0	999
Arrive On Green	0.00	0.17	0.17	0.01	0.20	0.00				0.33	0.00	0.33
Sat Flow, veh/h	0	5253	1549	1774	3632	0				1774	0	3022
Grp Volume(v), veh/h	0	411	132	24	163	0				107	0	158
Grp Sat Flow(s),veh/h/ln	0	1695	1549	1774	1770	0				1774	0	1511
Q Serve(g_s), s	0.0	8.9	9.4	1.7	4.9	0.0				5.6	0.0	4.8
Cycle Q Clear(g_c), s	0.0	8.9	9.4	1.7	4.9	0.0				5.6	0.0	4.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2658	809	55	2096	0				587	0	999
V/C Ratio(X)	0.00	0.15	0.16	0.43	0.08	0.00				0.18	0.00	0.16
Avail Cap(c_a), veh/h	0	2658	809	287	2096	0				587	0	999
HCM Platoon Ratio	1.00	0.33	0.33	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.92	0.92	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.4	29.6	63.2	23.3	0.0				31.0	0.0	30.7
Incr Delay (d2), s/veh	0.0	0.1	0.4	5.3	0.1	0.0				0.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.2	4.1	0.9	2.4	0.0				2.8	0.0	2.0
LnGrp Delay(d),s/veh	0.0	29.5	30.0	68.4	23.4	0.0				31.7	0.0	31.1
LnGrp LOS		C	C	E	C					C		C
Approach Vol, veh/h		543			187						265	
Approach Delay, s/veh		29.6			29.1						31.3	
Approach LOS		C			C						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			9.1	72.9		48.0		82.0
Change Period (Y+Rc), s			5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s			21.0	51.0		43.0		77.0
Max Q Clear Time (g_c+I1), s			3.7	11.4		7.6		6.9
Green Ext Time (p_c), s			0.0	3.6		1.0		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	142	10	138	10	64	309	180	63	3
Future Volume (veh/h)	10	10	10	142	10	138	10	64	309	180	63	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	11	11	205	0	104	11	70	336	196	68	3
Adj No. of Lanes	0	1	0	2	0	1	1	2	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	147	147	873	0	377	31	953	803	250	1117	49
Arrive On Green	0.26	0.26	0.26	0.25	0.00	0.25	0.02	0.27	0.27	0.07	0.32	0.32
Sat Flow, veh/h	570	570	570	3548	0	1531	1774	3539	1534	3442	3446	151
Grp Volume(v), veh/h	33	0	0	205	0	104	11	70	336	196	35	36
Grp Sat Flow(s),veh/h/ln	1711	0	0	1774	0	1531	1774	1770	1534	1721	1770	1828
Q Serve(g_s), s	1.9	0.0	0.0	6.0	0.0	7.1	0.8	1.9	17.7	7.3	1.8	1.8
Cycle Q Clear(g_c), s	1.9	0.0	0.0	6.0	0.0	7.1	0.8	1.9	17.7	7.3	1.8	1.8
Prop In Lane	0.33		0.33	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	442	0	0	873	0	377	31	953	803	250	574	592
V/C Ratio(X)	0.07	0.00	0.00	0.23	0.00	0.28	0.35	0.07	0.42	0.78	0.06	0.06
Avail Cap(c_a), veh/h	442	0	0	873	0	377	96	953	803	318	574	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	0.0	0.0	39.2	0.0	39.6	63.1	35.4	19.5	59.3	30.3	30.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.6	0.0	1.8	6.6	0.1	1.6	9.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	3.0	0.0	3.2	0.4	1.0	11.7	3.8	0.9	0.9
LnGrp Delay(d),s/veh	36.5	0.0	0.0	39.8	0.0	41.4	69.7	35.6	21.2	68.8	30.5	30.5
LnGrp LOS	D			D		D	E	D	C	E	C	C
Approach Vol, veh/h		33			309			417			267	
Approach Delay, s/veh		36.5			40.4			24.8			58.6	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.4	40.0		38.6	7.3	47.1		37.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	12.0	35.0		31.0	7.0	40.0		32.0
Max Q Clear Time (g_c+I1), s	9.3	19.7		3.9	2.8	3.8		9.1
Green Ext Time (p_c), s	0.2	1.5		0.1	0.0	0.4		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.7
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	113	14	37	111	144	49
Future Vol, veh/h	113	14	37	111	144	49
Conflicting Peds, #/hr	0	10	10	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	30
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	123	15	40	121	157	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	148	0	352	151
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	211	-
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	-	-	1434	-	646	895
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	824	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1420	-	614	878
Mov Cap-2 Maneuver	-	-	-	-	614	-
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	792	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	614	878	-	-	1420	-
HCM Lane V/C Ratio	0.255	0.061	-	-	0.028	-
HCM Control Delay (s)	12.9	9.4	-	-	7.6	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	1	0.2	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	53	222	191	41	10
Future Vol, veh/h	2	53	222	191	41	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	58	241	208	45	11
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	7.8	10	7.8
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	4%	0%
Vol Thru, %	0%	100%	0%	80%
Vol Right, %	0%	0%	96%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	191	55	51
LT Vol	222	0	2	0
Through Vol	0	191	0	41
RT Vol	0	0	53	10
Lane Flow Rate	241	208	60	55
Geometry Grp	7	7	2	5
Degree of Util (X)	0.346	0.269	0.074	0.069
Departure Headway (Hd)	5.168	4.667	4.473	4.497
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	693	766	805	799
Service Time	2.923	2.422	2.476	2.508
HCM Lane V/C Ratio	0.348	0.272	0.075	0.069
HCM Control Delay	10.7	9.2	7.8	7.8
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.5	1.1	0.2	0.2

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	70	83	29	20	29
Future Vol, veh/h	29	70	83	29	20	29
Conflicting Peds, #/hr	10	0	0	10	10	10
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	32	76	90	32	22	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	132	0	-	0	266	126
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	150	-
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	1453	-	-	-	723	924
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	878	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1439	-	-	-	693	906
Mov Cap-2 Maneuver	-	-	-	-	693	-
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	869	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1439	-	-	-	805
HCM Lane V/C Ratio	0.022	-	-	-	0.066
HCM Control Delay (s)	7.6	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	99.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	148	5	4	614	9	0	0	5	4
Future Vol, veh/h	0	0	0	148	5	4	614	9	0	0	5	4
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
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	-
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	161	5	4	667	10	0	0	5	4

Major/Minor	Minor1		Major1				Major2			
Conflicting Flow All	1361	1363	20	19	0	-	-	-	0
Stage 1	1344	1344	-	-	-	-	-	-	-
Stage 2	17	19	-	-	-	-	-	-	-
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	163	148	1058	1597	-	0	0	-	-
Stage 1	243	220	-	-	-	0	0	-	-
Stage 2	1006	880	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	~ 94	0	1048	1597	-	-	-	-	-
Mov Cap-2 Maneuver	~ 94	0	-	-	-	-	-	-	-
Stage 1	~ 141	0	-	-	-	-	-	-	-
Stage 2	996	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 463.7	8.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1597	-	96	-	-
HCM Lane V/C Ratio	0.418	-	1.778	-	-
HCM Control Delay (s)	8.9	0	$ 463.7	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	2.1	-	13.9	-	-

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

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	4	1	149	0	0	0	0	619	187	9	144	0
Future Vol, veh/h	4	1	149	0	0	0	0	619	187	9	144	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	290	-	-	-	-	-	-	-	-	-
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	4	1	162	0	0	0	0	673	203	10	157	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	962	1063	167	-	0	0	886	0	0
Stage 1	177	177	-	-	-	-	-	-	-
Stage 2	785	886	-	-	-	-	-	-	-
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	284	223	877	0	-	-	764	-	0
Stage 1	854	753	-	0	-	-	-	-	0
Stage 2	449	363	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	280	0	869	-	-	-	764	-	-
Mov Cap-2 Maneuver	280	0	-	-	-	-	-	-	-
Stage 1	854	0	-	-	-	-	-	-	-
Stage 2	443	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	280	869	764	-
HCM Lane V/C Ratio	-	-	0.019	0.186	0.013	-
HCM Control Delay (s)	-	-	18.1	10.1	9.8	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.7	0	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	118	22	28	688	192	101
Future Volume (veh/h)	118	22	28	688	192	101
Number	1	16	7	4	8	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	128	24	30	748	209	110
Adj No. of Lanes	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	277	247	90	1028	402	212
Arrive On Green	0.16	0.16	0.05	0.55	0.36	0.36
Sat Flow, veh/h	1774	1583	1774	1863	1130	595
Grp Volume(v), veh/h	128	24	30	748	0	319
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1725
Q Serve(g_s), s	2.2	0.4	0.6	10.3	0.0	5.0
Cycle Q Clear(g_c), s	2.2	0.4	0.6	10.3	0.0	5.0
Prop In Lane	1.00	1.00	1.00			0.34
Lane Grp Cap(c), veh/h	277	247	90	1028	0	613
V/C Ratio(X)	0.46	0.10	0.33	0.73	0.00	0.52
Avail Cap(c_a), veh/h	932	831	466	3369	0	2416
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	12.4	15.7	5.7	0.0	8.7
Incr Delay (d2), s/veh	1.2	0.2	2.1	1.0	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.4	0.3	5.5	0.0	2.4
LnGrp Delay(d),s/veh	14.4	12.6	17.9	6.7	0.0	9.4
LnGrp LOS	B	B	B	A		A
Approach Vol, veh/h	152			778	319	
Approach Delay, s/veh	14.1			7.2	9.4	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				23.9		10.4	6.7	17.2
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				62.0		18.0	9.0	48.0
Max Q Clear Time (g_c+I1), s				12.3		4.2	2.6	7.0
Green Ext Time (p_c), s				6.6		0.3	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	563	0	0	771	892	171	2	226	0	0	0
Future Volume (veh/h)	229	563	0	0	771	892	171	2	226	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	249	612	0	0	786	1004	186	2	246			
Adj No. of Lanes	2	3	0	0	1	2	0	1	2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	308	3687	0	0	1106	1816	337	4	513			
Arrive On Green	0.18	1.00	0.00	0.00	0.59	0.59	0.19	0.19	0.19			
Sat Flow, veh/h	3442	5253	0	0	1863	3058	1756	19	2679			
Grp Volume(v), veh/h	249	612	0	0	786	1004	188	0	246			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1863	1529	1775	0	1340			
Q Serve(g_s), s	8.3	0.0	0.0	0.0	35.6	23.8	11.5	0.0	9.8			
Cycle Q Clear(g_c), s	8.3	0.0	0.0	0.0	35.6	23.8	11.5	0.0	9.8			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	308	3687	0	0	1106	1816	340	0	513			
V/C Ratio(X)	0.81	0.17	0.00	0.00	0.71	0.55	0.55	0.00	0.48			
Avail Cap(c_a), veh/h	459	3687	0	0	1106	1816	340	0	513			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.85	0.85	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	48.3	0.0	0.0	0.0	17.1	14.7	43.8	0.0	43.2			
Incr Delay (d2), s/veh	5.6	0.1	0.0	0.0	3.9	1.2	6.3	0.0	3.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.0	0.0	19.3	10.3	6.2	0.0	3.8			
LnGrp Delay(d),s/veh	53.8	0.1	0.0	0.0	21.0	16.0	50.2	0.0	46.3			
LnGrp LOS	D	A			C	B	D		D			
Approach Vol, veh/h		861			1790			434				
Approach Delay, s/veh		15.6			18.2			48.0				
Approach LOS		B			B			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		92.0			15.7	76.3		28.0
Change Period (Y+Rc), s		5.0			5.0	5.0		5.0
Max Green Setting (Gmax), s		87.0			16.0	66.0		23.0
Max Q Clear Time (g_c+I1), s		2.0			10.3	37.6		13.5
Green Ext Time (p_c), s		5.0			0.4	13.2		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	417	141	514	428	0	0	0	0	375	1	253
Future Volume (veh/h)	0	417	141	514	428	0	0	0	0	375	1	253
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00				1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	453	153	559	465	0				408	0	276
Adj No. of Lanes	0	2	1	1	2	0				2	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1226	524	598	2566	0				680	0	568
Arrive On Green	0.00	0.11	0.11	0.34	0.73	0.00				0.19	0.00	0.19
Sat Flow, veh/h	0	3632	1513	1774	3632	0				3548	0	2963
Grp Volume(v), veh/h	0	453	153	559	465	0				408	0	276
Grp Sat Flow(s),veh/h/ln	0	1770	1513	1774	1770	0				1774	0	1481
Q Serve(g_s), s	0.0	14.2	11.1	36.6	5.0	0.0				12.6	0.0	10.0
Cycle Q Clear(g_c), s	0.0	14.2	11.1	36.6	5.0	0.0				12.6	0.0	10.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1226	524	598	2566	0				680	0	568
V/C Ratio(X)	0.00	0.37	0.29	0.94	0.18	0.00				0.60	0.00	0.49
Avail Cap(c_a), veh/h	0	1226	524	843	2566	0				680	0	568
HCM Platoon Ratio	1.00	0.33	0.33	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.90	0.90	0.69	0.69	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	41.0	39.6	38.5	5.2	0.0				44.3	0.0	43.2
Incr Delay (d2), s/veh	0.0	0.8	1.3	10.5	0.1	0.0				3.9	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.1	4.9	19.6	2.4	0.0				6.5	0.0	4.3
LnGrp Delay(d),s/veh	0.0	41.8	40.9	49.0	5.3	0.0				48.2	0.0	46.2
LnGrp LOS		D	D	D	A					D		D
Approach Vol, veh/h		606			1024						684	
Approach Delay, s/veh		41.6			29.2						47.4	
Approach LOS		D			C						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.4	46.6		28.0		92.0		
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	7.0	25.0		23.0		87.0		
Max Q Clear Time (g_c+I1), s	9.6	16.2		14.6		7.0		
Green Ext Time (p_c), s	1.8	2.4		1.9		3.6		

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	34	2	187	96	165	7	173	194	145	130	35
Future Volume (veh/h)	24	34	2	187	96	165	7	173	194	145	130	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	26	37	2	203	104	179	8	188	211	158	141	38
Adj No. of Lanes	1	3	0	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1650	87	265	668	582	24	1120	487	187	1129	294
Arrive On Green	0.03	0.33	0.33	0.03	0.12	0.12	0.01	0.32	0.32	0.11	0.41	0.41
Sat Flow, veh/h	1774	4936	262	3442	1770	1543	1774	3539	1539	1774	2764	720
Grp Volume(v), veh/h	26	25	14	203	104	179	8	188	211	158	88	91
Grp Sat Flow(s),veh/h/ln	1774	1695	1808	1721	1770	1543	1774	1770	1539	1774	1770	1714
Q Serve(g_s), s	1.7	0.6	0.6	7.0	6.3	12.7	0.5	4.6	13.0	10.5	3.7	4.0
Cycle Q Clear(g_c), s	1.7	0.6	0.6	7.0	6.3	12.7	0.5	4.6	13.0	10.5	3.7	4.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	60	1133	604	265	668	582	24	1120	487	187	723	700
V/C Ratio(X)	0.43	0.02	0.02	0.76	0.16	0.31	0.33	0.17	0.43	0.84	0.12	0.13
Avail Cap(c_a), veh/h	103	1133	604	373	668	582	103	1120	487	296	723	700
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	26.8	26.8	57.4	35.5	38.2	58.6	29.6	32.5	52.7	22.1	22.2
Incr Delay (d2), s/veh	4.9	0.0	0.1	5.9	0.5	1.3	7.7	0.3	2.8	12.0	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.3	3.6	3.2	5.6	0.3	2.3	5.9	5.8	1.9	1.9
LnGrp Delay(d),s/veh	61.7	26.8	26.9	63.3	35.9	39.6	66.4	29.9	35.3	64.7	22.5	22.6
LnGrp LOS	E	C	C	E	D	D	E	C	D	E	C	C
Approach Vol, veh/h		65			486			407			337	
Approach Delay, s/veh		40.8			48.7			33.4			42.3	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	45.1	6.6	54.0	9.1	50.3	17.7	43.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	13.0	31.0	7.0	49.0	7.0	37.0	20.0	36.0
Max Q Clear Time (g_c+I1), s	9.0	2.6	2.5	6.0	3.7	14.7	12.5	15.0
Green Ext Time (p_c), s	0.2	0.2	0.0	1.1	0.0	1.7	0.2	1.9

Intersection Summary		
HCM 2010 Ctrl Delay		41.8
HCM 2010 LOS		D

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	24	31	422	68	15	292
Future Volume (veh/h)	24	31	422	68	15	292
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.97		0.95	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	26	34	459	74	16	317
Adj No. of Lanes	0	0	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	66	86	1179	504	52	1923
Arrive On Green	0.09	0.09	0.33	0.33	0.03	0.54
Sat Flow, veh/h	696	910	3632	1511	1774	3632
Grp Volume(v), veh/h	61	0	459	74	16	317
Grp Sat Flow(s),veh/h/ln	1632	0	1770	1511	1774	1770
Q Serve(g_s), s	1.0	0.0	2.7	0.9	0.2	1.2
Cycle Q Clear(g_c), s	1.0	0.0	2.7	0.9	0.2	1.2
Prop In Lane	0.43	0.56		1.00	1.00	
Lane Grp Cap(c), veh/h	155	0	1179	504	52	1923
V/C Ratio(X)	0.39	0.00	0.39	0.15	0.31	0.16
Avail Cap(c_a), veh/h	1771	0	7299	3116	1155	10245
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	7.1	6.5	13.1	3.2
Incr Delay (d2), s/veh	1.6	0.0	0.2	0.1	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.4	0.4	0.2	0.6
LnGrp Delay(d),s/veh	13.4	0.0	7.3	6.6	16.4	3.2
LnGrp LOS	B		A	A	B	A
Approach Vol, veh/h	61		533			333
Approach Delay, s/veh	13.4		7.2			3.8
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.8	14.2				20.0		7.6
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	18.0	57.0				80.0		30.0
Max Q Clear Time (g_c+I1), s	2.2	4.7				3.2		3.0
Green Ext Time (p_c), s	0.0	3.7				2.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	58	1	37	58	200	10	147	74	154	93	8
Future Volume (veh/h)	15	58	1	37	58	200	10	147	74	154	93	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	16	63	1	40	63	217	11	160	80	167	101	9
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	259	4	154	204	428	34	1151	549	358	1906	168
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.02	0.49	0.49	0.10	0.58	0.58
Sat Flow, veh/h	166	1554	22	455	1227	1583	1774	2326	1110	3442	3291	290
Grp Volume(v), veh/h	80	0	0	103	0	217	11	120	120	167	54	56
Grp Sat Flow(s),veh/h/ln	1742	0	0	1682	0	1583	1774	1770	1667	1721	1770	1812
Q Serve(g_s), s	0.0	0.0	0.0	0.2	0.0	7.4	0.4	2.3	2.5	2.9	0.8	0.9
Cycle Q Clear(g_c), s	2.4	0.0	0.0	3.1	0.0	7.4	0.4	2.3	2.5	2.9	0.8	0.9
Prop In Lane	0.20		0.01	0.39		1.00	1.00		0.67	1.00		0.16
Lane Grp Cap(c), veh/h	358	0	0	358	0	428	34	875	825	358	1025	1049
V/C Ratio(X)	0.22	0.00	0.00	0.29	0.00	0.51	0.32	0.14	0.15	0.47	0.05	0.05
Avail Cap(c_a), veh/h	750	0	0	847	0	908	194	875	825	700	1025	1049
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	0.0	23.5	0.0	19.7	30.9	8.7	8.8	27.0	5.8	5.8
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.9	5.2	0.3	0.4	0.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	1.6	0.0	3.3	0.2	1.2	1.2	1.4	0.4	0.5
LnGrp Delay(d),s/veh	23.5	0.0	0.0	23.9	0.0	20.6	36.1	9.1	9.2	27.9	5.9	5.9
LnGrp LOS	C			C		C	D	A	A	C	A	A
Approach Vol, veh/h		80			320			251			277	
Approach Delay, s/veh		23.5			21.7			10.3			19.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.6	36.6		15.6	6.2	42.0		15.6
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	13.0	31.0		26.0	7.0	37.0		30.0
Max Q Clear Time (g_c+I1), s	4.4	4.5		4.4	2.4	2.9		9.4
Green Ext Time (p_c), s	0.3	1.4		0.3	0.0	0.6		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	272	346	313	332	0	0	0	0	121	7	132
Future Volume (veh/h)	0	272	346	313	332	0	0	0	0	121	7	132
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00				1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	296	376	340	361	0				132	8	143
Adj No. of Lanes	0	2	0	1	2	0				1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	868	747	372	2625	0				310	14	254
Arrive On Green	0.00	0.49	0.49	0.28	0.99	0.00				0.17	0.17	0.17
Sat Flow, veh/h	0	1863	1524	1774	3632	0				1774	81	1452
Grp Volume(v), veh/h	0	296	376	340	361	0				132	0	151
Grp Sat Flow(s),veh/h/ln	0	1770	1524	1774	1770	0				1774	0	1533
Q Serve(g_s), s	0.0	12.3	20.0	22.3	0.2	0.0				8.0	0.0	10.8
Cycle Q Clear(g_c), s	0.0	12.3	20.0	22.3	0.2	0.0				8.0	0.0	10.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		0.95
Lane Grp Cap(c), veh/h	0	868	747	372	2625	0				310	0	268
V/C Ratio(X)	0.00	0.34	0.50	0.91	0.14	0.00				0.43	0.00	0.56
Avail Cap(c_a), veh/h	0	868	747	577	2625	0				310	0	268
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.87	0.87	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	18.7	20.7	42.2	0.2	0.0				44.1	0.0	45.3
Incr Delay (d2), s/veh	0.0	1.1	2.4	12.1	0.1	0.0				4.2	0.0	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.3	8.9	12.1	0.1	0.0				4.3	0.0	5.2
LnGrp Delay(d),s/veh	0.0	19.8	23.1	54.4	0.3	0.0				48.3	0.0	53.6
LnGrp LOS		B	C	D	A					D		D
Approach Vol, veh/h		672			701						283	
Approach Delay, s/veh		21.6			26.5						51.1	
Approach LOS		C			C						D	

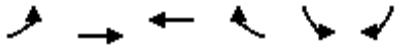
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	30.2	63.8		26.0		94.0		
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	39.0	45.0		21.0		89.0		
Max Q Clear Time (g_c+I1), s	24.3	22.0		12.8		2.2		
Green Ext Time (p_c), s	0.9	4.7		0.8		2.7		

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	233	0	0	476	300	169	1	97	0	0	0
Future Volume (veh/h)	160	233	0	0	476	300	169	1	97	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1900			
Adj Flow Rate, veh/h	174	253	0	0	517	326	184	1	105			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	202	2448	0	0	1102	693	399	3	341			
Arrive On Green	0.23	1.00	0.00	0.00	0.54	0.54	0.22	0.22	0.22			
Sat Flow, veh/h	1774	3632	0	0	2148	1293	1774	14	1517			
Grp Volume(v), veh/h	174	253	0	0	445	398	184	0	106			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1578	1774	0	1531			
Q Serve(g_s), s	11.3	0.0	0.0	0.0	18.7	18.8	10.8	0.0	6.9			
Cycle Q Clear(g_c), s	11.3	0.0	0.0	0.0	18.7	18.8	10.8	0.0	6.9			
Prop In Lane	1.00		0.00	0.00		0.82	1.00		0.99			
Lane Grp Cap(c), veh/h	202	2448	0	0	949	846	399	0	344			
V/C Ratio(X)	0.86	0.10	0.00	0.00	0.47	0.47	0.46	0.00	0.31			
Avail Cap(c_a), veh/h	384	2448	0	0	949	846	399	0	344			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.91	0.91	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	45.5	0.0	0.0	0.0	17.2	17.2	40.2	0.0	38.7			
Incr Delay (d2), s/veh	9.6	0.1	0.0	0.0	1.7	1.9	3.8	0.0	2.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.0	0.0	0.0	0.0	9.6	8.6	5.7	0.0	3.1			
LnGrp Delay(d),s/veh	55.1	0.1	0.0	0.0	18.9	19.1	44.0	0.0	41.0			
LnGrp LOS	E	A			B	B	D		D			
Approach Vol, veh/h		427			843			290				
Approach Delay, s/veh		22.5			19.0			42.9				
Approach LOS		C			B			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		88.0			18.6	69.4		32.0
Change Period (Y+Rc), s		5.0			5.0	5.0		5.0
Max Green Setting (Gmax), s		83.0			26.0	52.0		27.0
Max Q Clear Time (g_c+I1), s		2.0			13.3	20.8		12.8
Green Ext Time (p_c), s		1.8			0.4	6.5		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	678	391	0	232	30
Future Volume (veh/h)	12	678	391	0	232	30
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	20	737	425	0	252	33
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2
Cap, veh/h	63	1649	967	0	390	348
Arrive On Green	0.04	0.47	0.27	0.00	0.22	0.22
Sat Flow, veh/h	1774	3632	3725	0	1774	1583
Grp Volume(v), veh/h	20	737	425	0	252	33
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	0	1774	1583
Q Serve(g_s), s	0.4	4.5	3.2	0.0	4.1	0.5
Cycle Q Clear(g_c), s	0.4	4.5	3.2	0.0	4.1	0.5
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	63	1649	967	0	390	348
V/C Ratio(X)	0.32	0.45	0.44	0.00	0.65	0.09
Avail Cap(c_a), veh/h	724	6671	4670	0	2786	2487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	5.7	9.6	0.0	11.3	9.9
Incr Delay (d2), s/veh	2.8	0.2	0.3	0.0	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	1.6	0.0	2.2	0.5
LnGrp Delay(d),s/veh	17.8	5.9	9.9	0.0	13.1	10.0
LnGrp LOS	B	A	A		B	B
Approach Vol, veh/h		757	425		285	
Approach Delay, s/veh		6.2	9.9		12.7	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				19.8		12.0	6.1	13.7
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				60.0		50.0	13.0	42.0
Max Q Clear Time (g_c+I1), s				6.5		6.1	2.4	5.2
Green Ext Time (p_c), s				6.2		0.9	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	816	202	352	897	104	196	138	481	136	191	44
Future Volume (veh/h)	47	816	202	352	897	104	196	138	481	136	191	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	51	887	220	383	975	113	213	150	523	148	208	48
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	782	194	355	1396	162	198	140	284	131	184	42
Arrive On Green	0.04	0.28	0.28	0.20	0.44	0.44	0.19	0.19	0.19	0.20	0.20	0.20
Sat Flow, veh/h	1774	2793	692	1774	3181	369	1062	748	1521	653	918	212
Grp Volume(v), veh/h	51	562	545	383	542	546	363	0	523	404	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1715	1774	1770	1780	1810	0	1521	1783	0	0
Q Serve(g_s), s	4.3	42.0	42.0	30.0	37.2	37.2	28.0	0.0	28.0	30.0	0.0	0.0
Cycle Q Clear(g_c), s	4.3	42.0	42.0	30.0	37.2	37.2	28.0	0.0	28.0	30.0	0.0	0.0
Prop In Lane	1.00		0.40	1.00		0.21	0.59		1.00	0.37		0.12
Lane Grp Cap(c), veh/h	73	495	480	355	777	781	338	0	284	357	0	0
V/C Ratio(X)	0.70	1.13	1.14	1.08	0.70	0.70	1.07	0.00	1.84	1.13	0.00	0.00
Avail Cap(c_a), veh/h	106	495	480	355	777	781	338	0	284	357	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	71.0	54.0	54.0	60.0	34.0	34.1	61.0	0.0	61.0	60.0	0.0	0.0
Incr Delay (d2), s/veh	11.5	82.6	83.8	70.6	2.8	2.8	70.2	0.0	392.3	88.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	31.9	31.1	21.6	18.7	18.8	20.6	0.0	42.7	23.6	0.0	0.0
LnGrp Delay(d),s/veh	82.5	136.6	137.8	130.6	36.8	36.8	131.2	0.0	453.3	148.8	0.0	0.0
LnGrp LOS	F	F	F	F	D	D	F		F	F		
Approach Vol, veh/h		1158			1471			886			404	
Approach Delay, s/veh		134.8			61.2			321.4			148.8	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		33.0	35.0	47.0		35.0	11.2	70.8
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		28.0	30.0	42.0		30.0	9.0	63.0
Max Q Clear Time (g_c+I1), s		30.0	32.0	44.0		32.0	6.3	39.2
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	8.0

Intersection Summary		
HCM 2010 Ctrl Delay		150.8
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	574	260	434	747	0	0	0	0	171	10	227
Future Volume (veh/h)	0	574	260	434	747	0	0	0	0	171	10	227
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	624	0	472	812	0				186	11	247
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1357	607	517	2536	0				336	20	317
Arrive On Green	0.00	0.38	0.00	0.10	0.24	0.00				0.20	0.20	0.20
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1679	99	1583
Grp Volume(v), veh/h	0	624	0	472	812	0				197	0	247
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1779	0	1583
Q Serve(g_s), s	0.0	15.8	0.0	31.6	22.7	0.0				12.0	0.0	17.7
Cycle Q Clear(g_c), s	0.0	15.8	0.0	31.6	22.7	0.0				12.0	0.0	17.7
Prop In Lane	0.00		1.00	1.00		0.00				0.94		1.00
Lane Grp Cap(c), veh/h	0	1357	607	517	2536	0				356	0	317
V/C Ratio(X)	0.00	0.46	0.00	0.91	0.32	0.00				0.55	0.00	0.78
Avail Cap(c_a), veh/h	0	1357	607	710	2536	0				356	0	317
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.76	0.76	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.7	0.0	52.7	21.7	0.0				43.2	0.0	45.5
Incr Delay (d2), s/veh	0.0	1.1	0.0	10.4	0.3	0.0				6.1	0.0	17.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.9	0.0	17.1	11.2	0.0				6.5	0.0	9.3
LnGrp Delay(d),s/veh	0.0	28.8	0.0	63.1	21.9	0.0				49.3	0.0	62.7
LnGrp LOS		C		E	C					D		E
Approach Vol, veh/h		624			1284						444	
Approach Delay, s/veh		28.8			37.1						56.7	
Approach LOS		C			D						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			40.0	51.0		29.0		91.0
Change Period (Y+Rc), s			5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s			48.0	33.0		24.0		86.0
Max Q Clear Time (g_c+I1), s			33.6	17.8		19.7		24.7
Green Ext Time (p_c), s			1.4	3.8		0.8		7.1

Intersection Summary	
HCM 2010 Ctrl Delay	38.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	568	0	0	969	271	212	1	220	0	0	0
Future Volume (veh/h)	177	568	0	0	969	271	212	1	220	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	192	617	0	0	1053	0	230	1	239			
Adj No. of Lanes	1	2	0	0	2	1	0	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	219	2418	0	0	1834	821	412	2	369			
Arrive On Green	0.25	1.00	0.00	0.00	0.52	0.00	0.23	0.23	0.23			
Sat Flow, veh/h	1774	3632	0	0	3632	1583	1767	8	1583			
Grp Volume(v), veh/h	192	617	0	0	1053	0	231	0	239			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	12.5	0.0	0.0	0.0	24.5	0.0	13.8	0.0	16.4			
Cycle Q Clear(g_c), s	12.5	0.0	0.0	0.0	24.5	0.0	13.8	0.0	16.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	219	2418	0	0	1834	821	414	0	369			
V/C Ratio(X)	0.88	0.26	0.00	0.00	0.57	0.00	0.56	0.00	0.65			
Avail Cap(c_a), veh/h	355	2418	0	0	1834	821	414	0	369			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	44.3	0.0	0.0	0.0	19.8	0.0	40.5	0.0	41.5			
Incr Delay (d2), s/veh	11.7	0.2	0.0	0.0	1.3	0.0	5.3	0.0	8.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.8	0.1	0.0	0.0	12.2	0.0	7.4	0.0	8.0			
LnGrp Delay(d),s/veh	56.1	0.2	0.0	0.0	21.1	0.0	45.9	0.0	50.0			
LnGrp LOS	E	A			C		D		D			
Approach Vol, veh/h		809			1053			470				
Approach Delay, s/veh		13.5			21.1			48.0				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		33.0		87.0			19.8	67.2
Change Period (Y+Rc), s		5.0		5.0			5.0	5.0
Max Green Setting (Gmax), s		28.0		82.0			24.0	53.0
Max Q Clear Time (g_c+I1), s		18.4		2.0			14.5	26.5
Green Ext Time (p_c), s		1.6		5.0			0.4	8.7

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	129	298	11	281	154	294	262	16	71	259	371
Future Volume (veh/h)	323	129	298	11	281	154	294	262	16	71	259	371
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	351	140	324	12	305	167	320	285	17	77	282	403
Adj No. of Lanes	2	2	0	2	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	438	392	68	504	226	359	1609	96	109	589	527
Arrive On Green	0.12	0.25	0.25	0.02	0.14	0.14	0.20	0.47	0.47	0.06	0.33	0.33
Sat Flow, veh/h	3442	1770	1583	3442	3539	1583	1774	3395	202	1774	1770	1583
Grp Volume(v), veh/h	351	140	324	12	305	167	320	148	154	77	282	403
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1774	1770	1827	1774	1770	1583
Q Serve(g_s), s	10.1	6.5	19.6	0.3	8.2	10.2	17.8	4.9	4.9	4.3	12.8	23.1
Cycle Q Clear(g_c), s	10.1	6.5	19.6	0.3	8.2	10.2	17.8	4.9	4.9	4.3	12.8	23.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	430	438	392	68	504	226	359	839	866	109	589	527
V/C Ratio(X)	0.82	0.32	0.83	0.18	0.60	0.74	0.89	0.18	0.18	0.71	0.48	0.76
Avail Cap(c_a), veh/h	578	647	578	238	944	422	526	839	866	140	589	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	31.1	36.0	48.8	40.7	41.6	39.3	15.3	15.3	46.7	26.8	30.2
Incr Delay (d2), s/veh	6.7	0.4	6.3	1.2	1.2	4.7	12.7	0.5	0.4	11.0	2.8	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	3.2	9.2	0.2	4.1	4.8	10.0	2.5	2.6	2.4	6.7	11.6
LnGrp Delay(d),s/veh	49.8	31.5	42.3	50.0	41.9	46.3	52.0	15.7	15.8	57.6	29.6	40.4
LnGrp LOS	D	C	D	D	D	D	D	B	B	E	C	D
Approach Vol, veh/h		815			484			622			762	
Approach Delay, s/veh		43.7			43.6			34.4			38.1	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	53.0	7.0	30.1	25.5	38.7	17.6	19.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	8.0	48.0	7.0	37.0	30.0	26.0	17.0	27.0
Max Q Clear Time (g_c+I1), s	6.3	6.9	2.3	21.6	19.8	25.1	12.1	12.2
Green Ext Time (p_c), s	0.0	1.9	0.0	2.7	0.7	0.4	0.6	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	39.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	659	176	323	1006	0	0	0	0	946	10	1255
Future Volume (veh/h)	0	659	176	323	1006	0	0	0	0	946	10	1255
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	716	191	351	1093	0				1036	0	1364
Adj No. of Lanes	1	4	0	2	3	0				2	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	556	1596	409	0	1202	0				1153	0	1993
Arrive On Green	0.00	0.31	0.31	0.24	0.24	0.00				0.32	0.00	0.32
Sat Flow, veh/h	1774	5090	1304	0	5253	0				3548	0	3079
Grp Volume(v), veh/h	0	674	233	0	1093	0				1036	0	1364
Grp Sat Flow(s),veh/h/ln	1774	1602	1588	0	1695	0				1774	0	1539
Q Serve(g_s), s	0.0	13.4	14.1	0.0	25.1	0.0				33.4	0.0	34.5
Cycle Q Clear(g_c), s	0.0	13.4	14.1	0.0	25.1	0.0				33.4	0.0	34.5
Prop In Lane	1.00		0.82	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	556	1507	498	0	1202	0				1153	0	1993
V/C Ratio(X)	0.00	0.45	0.47	0.00	0.91	0.00				0.90	0.00	0.68
Avail Cap(c_a), veh/h	556	1507	498	0	1229	0				1153	0	1993
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	32.9	33.1	0.0	44.6	0.0				38.6	0.0	14.1
Incr Delay (d2), s/veh	0.0	1.0	3.1	0.0	9.9	0.0				11.1	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.1	6.6	0.0	12.8	0.0				18.0	0.0	23.1
LnGrp Delay(d),s/veh	0.0	33.9	36.3	0.0	54.5	0.0				49.7	0.0	16.0
LnGrp LOS		C	D		D					D		B
Approach Vol, veh/h		907			1093						2400	
Approach Delay, s/veh		34.5			54.5						30.6	
Approach LOS		C			D						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		42.6		44.0		33.4		
Change Period (Y+Rc), s		5.0		5.0		* 5		
Max Green Setting (Gmax), s		19.0		39.0		* 29		
Max Q Clear Time (g_c+I1), s		16.1		36.5		27.1		
Green Ext Time (p_c), s		1.6		2.1		1.3		

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1067	0	0	944	807	687
Future Volume (veh/h)	1067	0	0	944	807	687
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	0	1863	1863	1863
Adj Flow Rate, veh/h	1160	0	0	1026	877	747
Adj No. of Lanes	3	0	0	4	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1568	0	0	1976	2094	963
Arrive On Green	0.31	0.00	0.00	0.31	0.61	0.61
Sat Flow, veh/h	5421	0	0	6929	3442	1583
Grp Volume(v), veh/h	1160	0	0	1026	877	747
Grp Sat Flow(s),veh/h/ln	1695	0	0	1602	1721	1583
Q Serve(g_s), s	24.5	0.0	0.0	15.8	16.1	42.0
Cycle Q Clear(g_c), s	24.5	0.0	0.0	15.8	16.1	42.0
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1568	0	0	1976	2094	963
V/C Ratio(X)	0.74	0.00	0.00	0.52	0.42	0.78
Avail Cap(c_a), veh/h	1568	0	0	1976	2094	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	0.0	0.0	34.2	12.4	17.4
Incr Delay (d2), s/veh	3.2	0.0	0.0	1.0	0.6	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	0.0	0.0	7.1	7.7	19.9
LnGrp Delay(d),s/veh	40.4	0.0	0.0	35.2	13.0	23.5
LnGrp LOS	D			D	B	C
Approach Vol, veh/h	1160			1026	1624	
Approach Delay, s/veh	40.4			35.2	17.8	
Approach LOS	D			D	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		42.0				42.0		78.0
Change Period (Y+Rc), s		5.0				5.0		5.0
Max Green Setting (Gmax), s		37.0				37.0		73.0
Max Q Clear Time (g_c+I1), s		26.5				17.8		44.0
Green Ext Time (p_c), s		5.7				7.2		8.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	409	1303	1	6	917	51	42	13	26	42	6	51
Future Volume (veh/h)	409	1303	1	6	917	51	42	13	26	42	6	51
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	445	1416	1	7	997	55	50	14	28	46	0	60
Adj No. of Lanes	2	2	1	1	2	0	2	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	507	1795	785	22	1267	70	163	146	291	81	0	818
Arrive On Green	0.15	0.51	0.51	0.01	0.37	0.37	0.05	0.27	0.27	0.05	0.00	0.27
Sat Flow, veh/h	3442	3539	1548	1774	3405	188	3442	543	1087	1774	0	3068
Grp Volume(v), veh/h	445	1416	1	7	518	534	50	0	42	46	0	60
Grp Sat Flow(s),veh/h/ln	1721	1770	1548	1774	1770	1824	1721	0	1630	1774	0	1534
Q Serve(g_s), s	15.2	39.4	0.0	0.5	31.2	31.2	1.7	0.0	2.3	3.0	0.0	1.8
Cycle Q Clear(g_c), s	15.2	39.4	0.0	0.5	31.2	31.2	1.7	0.0	2.3	3.0	0.0	1.8
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	507	1795	785	22	658	678	163	0	437	81	0	818
V/C Ratio(X)	0.88	0.79	0.00	0.33	0.79	0.79	0.31	0.00	0.10	0.57	0.00	0.07
Avail Cap(c_a), veh/h	574	1795	785	133	658	678	201	0	437	103	0	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.1	24.3	14.6	58.8	33.5	33.5	55.3	0.0	33.0	56.1	0.0	32.9
Incr Delay (d2), s/veh	13.2	3.6	0.0	8.0	8.7	8.5	1.1	0.0	0.4	6.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	20.2	0.0	0.3	16.8	17.3	0.8	0.0	1.1	1.6	0.0	0.8
LnGrp Delay(d),s/veh	63.3	27.9	14.6	66.8	42.2	42.0	56.3	0.0	33.4	62.2	0.0	33.1
LnGrp LOS	E	C	B	E	D	D	E		C	E		C
Approach Vol, veh/h		1862			1059			92			106	
Approach Delay, s/veh		36.4			42.2			45.9			45.7	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	65.9	10.7	37.0	22.7	49.6	10.5	37.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	9.0	52.0	7.0	32.0	20.0	41.0	7.0	32.0
Max Q Clear Time (g_c+I1), s	2.5	41.4	3.7	3.8	17.2	33.2	5.0	4.3
Green Ext Time (p_c), s	0.0	7.0	0.0	0.2	0.5	4.0	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	38.9
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1048	323	26	693	281	27
Future Volume (veh/h)	1048	323	26	693	281	27
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1139	336	28	753	305	29
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1289	577	63	1562	1636	753
Arrive On Green	0.73	0.73	0.04	0.44	0.48	0.48
Sat Flow, veh/h	3632	1583	1774	3632	3442	1583
Grp Volume(v), veh/h	1139	336	28	753	305	29
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1721	1583
Q Serve(g_s), s	29.4	12.0	1.9	18.1	6.1	1.2
Cycle Q Clear(g_c), s	29.4	12.0	1.9	18.1	6.1	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1289	577	63	1562	1636	753
V/C Ratio(X)	0.88	0.58	0.45	0.48	0.19	0.04
Avail Cap(c_a), veh/h	1888	844	103	2242	1636	753
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	12.0	56.7	23.8	18.1	16.8
Incr Delay (d2), s/veh	2.3	0.5	4.9	0.2	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	5.1	1.0	8.8	3.0	0.5
LnGrp Delay(d),s/veh	16.6	12.5	61.6	24.0	18.4	16.9
LnGrp LOS	B	B	E	C	B	B
Approach Vol, veh/h	1475			781	334	
Approach Delay, s/veh	15.7			25.4	18.2	
Approach LOS	B			C	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		62.1	9.2	48.7				57.9
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		34.0	7.0	64.0				76.0
Max Q Clear Time (g_c+I1), s		8.1	3.9	31.4				20.1
Green Ext Time (p_c), s		1.2	0.0	12.3				6.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	161	331	10	50	26
Future Volume (veh/h)	10	161	331	10	50	26
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	175	360	11	54	28
Adj No. of Lanes	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	874	402	394	1247	761	621
Arrive On Green	0.25	0.25	0.22	0.67	0.41	0.41
Sat Flow, veh/h	3442	1583	1774	1863	1863	1519
Grp Volume(v), veh/h	11	175	360	11	54	28
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1863	1863	1519
Q Serve(g_s), s	0.3	12.1	25.7	0.3	2.3	1.4
Cycle Q Clear(g_c), s	0.3	12.1	25.7	0.3	2.3	1.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	874	402	394	1247	761	621
V/C Ratio(X)	0.01	0.44	0.91	0.01	0.07	0.05
Avail Cap(c_a), veh/h	874	402	805	1247	761	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	40.7	49.3	7.2	23.4	23.2
Incr Delay (d2), s/veh	0.0	3.4	8.6	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	11.4	13.5	0.1	1.2	0.6
LnGrp Delay(d),s/veh	36.3	44.1	57.9	7.2	23.6	23.3
LnGrp LOS	D	D	E	A	C	C
Approach Vol, veh/h	186			371	82	
Approach Delay, s/veh	43.6			56.4	23.5	
Approach LOS	D			E	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		92.0		38.0	33.9	58.1		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		87.0		33.0	59.0	23.0		
Max Q Clear Time (g_c+I1), s		2.3		14.1	27.7	4.3		
Green Ext Time (p_c), s		0.0		0.5	1.1	0.3		

Intersection Summary	
HCM 2010 Ctrl Delay	48.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	165	0	0	57	300	96	9	6	0	0	0
Future Volume (veh/h)	199	165	0	0	57	300	96	9	6	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	216	179	0	0	62	326	111	0	7			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	263	2042	0	0	1635	714	1228	0	533			
Arrive On Green	0.13	0.96	0.00	0.00	0.46	0.46	0.35	0.00	0.35			
Sat Flow, veh/h	3442	3632	0	0	3632	1547	3548	0	1541			
Grp Volume(v), veh/h	216	179	0	0	62	326	111	0	7			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1547	1774	0	1541			
Q Serve(g_s), s	7.9	0.3	0.0	0.0	1.2	18.7	2.7	0.0	0.4			
Cycle Q Clear(g_c), s	7.9	0.3	0.0	0.0	1.2	18.7	2.7	0.0	0.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	263	2042	0	0	1635	714	1228	0	533			
V/C Ratio(X)	0.82	0.09	0.00	0.00	0.04	0.46	0.09	0.00	0.01			
Avail Cap(c_a), veh/h	265	2042	0	0	1635	714	1228	0	533			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.99	0.99	0.00	0.00	0.59	0.59	1.00	0.00	1.00			
Uniform Delay (d), s/veh	55.8	1.0	0.0	0.0	19.2	23.8	28.7	0.0	27.9			
Incr Delay (d2), s/veh	18.0	0.1	0.0	0.0	0.0	1.2	0.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.4	0.1	0.0	0.0	0.6	8.2	1.4	0.0	0.2			
LnGrp Delay(d),s/veh	73.8	1.1	0.0	0.0	19.2	25.1	28.8	0.0	28.0			
LnGrp LOS	E	A			B	C	C		C			
Approach Vol, veh/h		395			388			118				
Approach Delay, s/veh		40.9			24.1			28.8				
Approach LOS		D			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		50.0		80.0			14.9	65.1
Change Period (Y+Rc), s		5.0		5.0			5.0	5.0
Max Green Setting (Gmax), s		45.0		75.0			10.0	60.0
Max Q Clear Time (g_c+I1), s		4.7		2.3			9.9	20.7
Green Ext Time (p_c), s		0.4		1.3			0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	32.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	219	139	12	141	0	0	0	0	145	2	426
Future Volume (veh/h)	0	219	139	12	141	0	0	0	0	145	2	426
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	238	146	13	153	0				158	0	464
Adj No. of Lanes	0	3	1	1	2	0				1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2401	730	36	1879	0				696	0	1190
Arrive On Green	0.00	0.16	0.16	0.01	0.18	0.00				0.39	0.00	0.39
Sat Flow, veh/h	0	5253	1547	1774	3632	0				1774	0	3034
Grp Volume(v), veh/h	0	238	146	13	153	0				158	0	464
Grp Sat Flow(s),veh/h/ln	0	1695	1547	1774	1770	0				1774	0	1517
Q Serve(g_s), s	0.0	5.2	10.7	0.9	4.7	0.0				7.7	0.0	14.3
Cycle Q Clear(g_c), s	0.0	5.2	10.7	0.9	4.7	0.0				7.7	0.0	14.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2401	730	36	1879	0				696	0	1190
V/C Ratio(X)	0.00	0.10	0.20	0.36	0.08	0.00				0.23	0.00	0.39
Avail Cap(c_a), veh/h	0	2401	730	259	1879	0				696	0	1190
HCM Platoon Ratio	1.00	0.33	0.33	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.96	0.96	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	31.2	33.5	63.7	27.1	0.0				26.4	0.0	28.3
Incr Delay (d2), s/veh	0.0	0.1	0.6	6.1	0.1	0.0				0.8	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	4.7	0.5	2.3	0.0				3.9	0.0	6.2
LnGrp Delay(d),s/veh	0.0	31.2	34.1	69.8	27.2	0.0				27.1	0.0	29.3
LnGrp LOS		C	C	E	C					C		C
Approach Vol, veh/h		384			166						622	
Approach Delay, s/veh		32.3			30.5						28.7	
Approach LOS		C			C						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			7.6	66.4		56.0		74.0
Change Period (Y+Rc), s			5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s			19.0	45.0		51.0		69.0
Max Q Clear Time (g_c+I1), s			2.9	12.7		16.3		6.7
Green Ext Time (p_c), s			0.0	2.2		2.6		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	435	10	122	10	104	238	110	119	10
Future Volume (veh/h)	10	10	10	435	10	122	10	104	238	110	119	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	11	11	519	0	92	11	113	259	120	129	11
Adj No. of Lanes	0	1	0	2	0	1	1	2	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	145	145	1010	0	437	31	898	840	183	952	80
Arrive On Green	0.25	0.25	0.25	0.28	0.00	0.28	0.02	0.25	0.25	0.05	0.29	0.29
Sat Flow, veh/h	570	570	570	3548	0	1536	1774	3539	1532	3442	3290	277
Grp Volume(v), veh/h	33	0	0	519	0	92	11	113	259	120	69	71
Grp Sat Flow(s),veh/h/ln	1711	0	0	1774	0	1536	1774	1770	1532	1721	1770	1797
Q Serve(g_s), s	1.9	0.0	0.0	15.9	0.0	5.9	0.8	3.2	12.2	4.4	3.7	3.8
Cycle Q Clear(g_c), s	1.9	0.0	0.0	15.9	0.0	5.9	0.8	3.2	12.2	4.4	3.7	3.8
Prop In Lane	0.33		0.33	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	436	0	0	1010	0	437	31	898	840	183	512	520
V/C Ratio(X)	0.08	0.00	0.00	0.51	0.00	0.21	0.35	0.13	0.31	0.66	0.13	0.14
Avail Cap(c_a), veh/h	436	0	0	1010	0	437	96	898	840	238	512	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.98	0.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	0.0	0.0	39.0	0.0	35.4	63.1	37.4	16.7	60.4	34.2	34.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.8	0.0	1.1	6.6	0.3	1.0	4.1	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	8.0	0.0	2.6	0.4	1.6	8.6	2.2	1.9	2.0
LnGrp Delay(d),s/veh	36.9	0.0	0.0	40.8	0.0	36.5	69.7	37.7	17.6	64.4	34.7	34.7
LnGrp LOS	D			D		D	E	D	B	E	C	C
Approach Vol, veh/h		33			611			383			260	
Approach Delay, s/veh		36.9			40.1			25.0			48.4	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	38.0		38.1	7.3	42.6		42.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	9.0	33.0		31.0	7.0	35.0		37.0
Max Q Clear Time (g_c+I1), s	6.4	14.2		3.9	2.8	5.8		17.9
Green Ext Time (p_c), s	0.1	1.5		0.1	0.0	0.8		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.2
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	144	62	69	249	63	55
Future Vol, veh/h	144	62	69	249	63	55
Conflicting Peds, #/hr	0	10	10	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	30
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	157	67	75	271	68	60

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	234	0	632	211
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	431	-
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	-	-	1333	-	444	829
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	655	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1320	-	406	813
Mov Cap-2 Maneuver	-	-	-	-	406	-
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	605	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	406	813	-	-	1320	-
HCM Lane V/C Ratio	0.169	0.074	-	-	0.057	-
HCM Control Delay (s)	15.7	9.8	-	-	7.9	0
HCM Lane LOS	C	A	-	-	A	A
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0.2	-

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	383	140	109	113	18
Future Vol, veh/h	9	383	140	109	113	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	416	152	118	123	20
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	12.3	10.6	9.9
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	2%	0%
Vol Thru, %	0%	100%	0%	86%
Vol Right, %	0%	0%	98%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	109	392	131
LT Vol	140	0	9	0
Through Vol	0	109	0	113
RT Vol	0	0	383	18
Lane Flow Rate	152	118	426	142
Geometry Grp	7	7	2	5
Degree of Util (X)	0.265	0.19	0.522	0.214
Departure Headway (Hd)	6.268	5.762	4.414	5.408
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	577	626	810	666
Service Time	3.973	3.466	2.486	3.415
HCM Lane V/C Ratio	0.263	0.188	0.526	0.213
HCM Control Delay	11.2	9.8	12.3	9.9
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	1.1	0.7	3.1	0.8

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	208	100	20	103	103
Future Vol, veh/h	29	208	100	20	103	103
Conflicting Peds, #/hr	10	0	0	10	10	10
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	32	226	109	22	112	112

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	141	0	-	0	430	140
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	300	-
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	1442	-	-	-	582	908
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1428	-	-	-	556	891
Mov Cap-2 Maneuver	-	-	-	-	556	-
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	744	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1428	-	-	-	685
HCM Lane V/C Ratio	0.022	-	-	-	0.327
HCM Control Delay (s)	7.6	0	-	-	12.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Intersection	
Int Delay, s/veh	12.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	174	13	12	216	9	0	0	15	11
Future Vol, veh/h	0	0	0	174	13	12	216	9	0	0	15	11
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
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	-
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	189	14	13	235	10	0	0	16	12

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	512	518	20	38	0	-	-	-	0
Stage 1	480	480	-	-	-	-	-	-	-
Stage 2	32	38	-	-	-	-	-	-	-
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	522	462	1058	1572	-	0	0	-	-
Stage 1	622	554	-	-	-	0	0	-	-
Stage 2	991	863	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	440	0	1048	1572	-	-	-	-	-
Mov Cap-2 Maneuver	440	0	-	-	-	-	-	-	-
Stage 1	529	0	-	-	-	-	-	-	-
Stage 2	981	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.8	7.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1572	-	457	-	-
HCM Lane V/C Ratio	0.149	-	0.473	-	-
HCM Control Delay (s)	7.7	0	19.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.5	-	2.5	-	-

Intersection	
Int Delay, s/veh	13.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	6	621	0	0	0	0	221	296	9	180	0
Future Vol, veh/h	4	6	621	0	0	0	0	221	296	9	180	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	290	-	-	-	-	-	-	-	-	-
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	4	7	695	0	0	0	0	240	322	10	196	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	627	788	206	-	0	0	572	0	0
Stage 1	216	216	-	-	-	-	-	-	-
Stage 2	411	572	-	-	-	-	-	-	-
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	323	835	0	-	-	1001	-	0
Stage 1	820	724	-	0	-	-	-	-	0
Stage 2	669	504	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	442	0	827	-	-	-	1001	-	-
Mov Cap-2 Maneuver	442	0	-	-	-	-	-	-	-
Stage 1	820	0	-	-	-	-	-	-	-
Stage 2	662	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.5	0	0.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	442	827	1001	-
HCM Lane V/C Ratio	-	-	0.025	0.841	0.01	-
HCM Control Delay (s)	-	-	13.4	27.7	8.6	0
HCM Lane LOS	-	-	B	D	A	A
HCM 95th %tile Q(veh)	-	-	0.1	9.9	0	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	272	68	56	245	672	129
Future Volume (veh/h)	272	68	56	245	672	129
Number	1	16	7	4	8	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	296	74	61	266	730	140
Adj No. of Lanes	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	348	310	119	1249	809	155
Arrive On Green	0.20	0.20	0.07	0.67	0.54	0.54
Sat Flow, veh/h	1774	1583	1774	1863	1509	289
Grp Volume(v), veh/h	296	74	61	266	0	870
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1799
Q Serve(g_s), s	12.0	2.9	2.5	4.1	0.0	32.5
Cycle Q Clear(g_c), s	12.0	2.9	2.5	4.1	0.0	32.5
Prop In Lane	1.00	1.00	1.00			0.16
Lane Grp Cap(c), veh/h	348	310	119	1249	0	965
V/C Ratio(X)	0.85	0.24	0.51	0.21	0.00	0.90
Avail Cap(c_a), veh/h	474	423	166	1494	0	1154
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.0	25.4	33.7	4.7	0.0	15.6
Incr Delay (d2), s/veh	10.5	0.4	3.4	0.1	0.0	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	2.8	1.3	2.1	0.0	18.3
LnGrp Delay(d),s/veh	39.5	25.8	37.1	4.8	0.0	24.4
LnGrp LOS	D	C	D	A		C
Approach Vol, veh/h	370			327	870	
Approach Delay, s/veh	36.8			10.8	24.4	
Approach LOS	D			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				55.1		19.7	10.0	45.1
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				60.0		20.0	7.0	48.0
Max Q Clear Time (g_c+I1), s				6.1		14.0	4.5	34.5
Green Ext Time (p_c), s				1.7		0.6	0.0	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	24.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	1402	0	0	745	687	199	10	555	0	0	0
Future Volume (veh/h)	300	1402	0	0	745	687	199	10	555	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	326	1524	0	0	1152	519	216	11	603			
Adj No. of Lanes	2	3	0	0	2	1	0	1	2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	391	3221	0	0	1781	740	479	24	766			
Arrive On Green	0.11	0.63	0.00	0.00	0.48	0.48	0.28	0.28	0.28			
Sat Flow, veh/h	3442	5253	0	0	3725	1547	1692	86	2703			
Grp Volume(v), veh/h	326	1524	0	0	1152	519	227	0	603			
Grp Sat Flow(s),veh/h/ln	1721	1695	0	0	1863	1547	1778	0	1351			
Q Serve(g_s), s	11.1	18.8	0.0	0.0	28.0	31.6	12.6	0.0	24.7			
Cycle Q Clear(g_c), s	11.1	18.8	0.0	0.0	28.0	31.6	12.6	0.0	24.7			
Prop In Lane	1.00		0.00	0.00		1.00	0.95		1.00			
Lane Grp Cap(c), veh/h	391	3221	0	0	1781	740	504	0	766			
V/C Ratio(X)	0.83	0.47	0.00	0.00	0.65	0.70	0.45	0.00	0.79			
Avail Cap(c_a), veh/h	516	3221	0	0	1781	740	504	0	766			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.43	0.43	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	52.1	11.5	0.0	0.0	23.7	24.6	35.3	0.0	39.7			
Incr Delay (d2), s/veh	4.0	0.2	0.0	0.0	1.8	5.5	2.9	0.0	8.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.5	8.8	0.0	0.0	14.9	14.5	6.6	0.0	10.1			
LnGrp Delay(d),s/veh	56.0	11.7	0.0	0.0	25.5	30.1	38.2	0.0	47.7			
LnGrp LOS	E	B			C	C	D		D			
Approach Vol, veh/h		1850			1671			830				
Approach Delay, s/veh		19.5			26.9			45.1				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		81.0			18.6	62.4		39.0
Change Period (Y+Rc), s		5.0			5.0	5.0		5.0
Max Green Setting (Gmax), s		76.0			18.0	53.0		34.0
Max Q Clear Time (g_c+I1), s		20.8			13.1	33.6		26.7
Green Ext Time (p_c), s		17.8			0.5	10.7		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	27.3
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	811	201	347	597	0	0	0	0	891	3	340
Future Volume (veh/h)	0	811	201	347	597	0	0	0	0	891	3	340
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00				1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	882	218	377	649	0				968	0	372
Adj No. of Lanes	0	2	1	1	2	0				2	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1157	494	411	2124	0				1124	0	956
Arrive On Green	0.00	0.22	0.22	0.08	0.20	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	3632	1510	1774	3632	0				3548	0	3018
Grp Volume(v), veh/h	0	882	218	377	649	0				968	0	372
Grp Sat Flow(s),veh/h/ln	0	1770	1510	1774	1770	0				1774	0	1509
Q Serve(g_s), s	0.0	28.0	15.0	25.3	18.8	0.0				30.8	0.0	11.5
Cycle Q Clear(g_c), s	0.0	28.0	15.0	25.3	18.8	0.0				30.8	0.0	11.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1157	494	411	2124	0				1124	0	956
V/C Ratio(X)	0.00	0.76	0.44	0.92	0.31	0.00				0.86	0.00	0.39
Avail Cap(c_a), veh/h	0	1157	494	458	2124	0				1124	0	956
HCM Platoon Ratio	1.00	0.67	0.67	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.77	0.77	0.63	0.63	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	42.5	37.4	54.3	26.8	0.0				38.5	0.0	32.0
Incr Delay (d2), s/veh	0.0	3.7	2.2	15.6	0.2	0.0				8.7	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.3	6.6	14.3	9.3	0.0				16.4	0.0	5.0
LnGrp Delay(d),s/veh	0.0	46.2	39.6	69.9	27.0	0.0				47.3	0.0	33.2
LnGrp LOS		D	D	E	C					D		C
Approach Vol, veh/h		1100			1026						1340	
Approach Delay, s/veh		44.9			42.8						43.4	
Approach LOS		D			D						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	32.8	44.2		43.0		77.0		
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	31.8	36.0		38.0		72.0		
Max Q Clear Time (g_c+I1), s	27.3	30.0		32.8		20.8		
Green Ext Time (p_c), s	0.5	3.3		2.7		5.3		

Intersection Summary	
HCM 2010 Ctrl Delay	43.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	70	9	392	85	245	21	273	384	213	290	21
Future Volume (veh/h)	48	70	9	392	85	245	21	273	384	213	290	21
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	52	76	10	426	92	266	23	297	396	232	315	23
Adj No. of Lanes	1	3	0	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	85	1170	147	478	615	536	55	1032	448	259	1357	99
Arrive On Green	0.05	0.26	0.26	0.14	0.35	0.35	0.03	0.29	0.29	0.15	0.41	0.41
Sat Flow, veh/h	1774	4556	573	3442	1770	1541	1774	3539	1537	1774	3340	242
Grp Volume(v), veh/h	52	56	30	426	92	266	23	297	396	232	166	172
Grp Sat Flow(s),veh/h/ln	1774	1695	1739	1721	1770	1541	1774	1770	1537	1774	1770	1813
Q Serve(g_s), s	3.4	1.5	1.6	14.6	4.3	16.3	1.5	7.8	29.5	15.4	7.4	7.5
Cycle Q Clear(g_c), s	3.4	1.5	1.6	14.6	4.3	16.3	1.5	7.8	29.5	15.4	7.4	7.5
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	85	870	446	478	615	536	55	1032	448	259	719	737
V/C Ratio(X)	0.61	0.06	0.07	0.89	0.15	0.50	0.42	0.29	0.88	0.90	0.23	0.23
Avail Cap(c_a), veh/h	133	870	446	488	615	536	103	1032	448	281	719	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	33.7	33.7	50.8	26.9	30.9	57.1	32.9	40.6	50.3	23.3	23.4
Incr Delay (d2), s/veh	6.9	0.1	0.3	17.5	0.5	3.1	4.9	0.7	21.6	27.4	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.7	0.8	8.1	2.2	7.4	0.8	3.9	15.2	9.5	3.7	3.9
LnGrp Delay(d),s/veh	62.9	33.8	34.0	68.2	27.4	34.0	61.9	33.6	62.2	77.7	24.1	24.1
LnGrp LOS	E	C	C	E	C	C	E	C	E	E	C	C
Approach Vol, veh/h		138			784			716			570	
Approach Delay, s/veh		44.8			51.8			50.3			45.9	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.7	35.8	8.7	53.8	10.8	46.7	22.5	40.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	17.0	29.0	7.0	47.0	9.0	37.0	19.0	35.0
Max Q Clear Time (g_c+I1), s	16.6	3.6	3.5	9.5	5.4	18.3	17.4	31.5
Green Ext Time (p_c), s	0.1	0.4	0.0	2.1	0.0	2.2	0.1	1.2

Intersection Summary		
HCM 2010 Ctrl Delay		49.4
HCM 2010 LOS		D

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	35	36	591	75	29	654
Future Volume (veh/h)	35	36	591	75	29	654
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.96		0.96	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	38	39	642	82	32	711
Adj No. of Lanes	0	0	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	87	89	1352	579	96	2080
Arrive On Green	0.11	0.11	0.38	0.38	0.05	0.59
Sat Flow, veh/h	800	821	3632	1516	1774	3632
Grp Volume(v), veh/h	78	0	642	82	32	711
Grp Sat Flow(s),veh/h/ln	1642	0	1770	1516	1774	1770
Q Serve(g_s), s	1.5	0.0	4.5	1.2	0.6	3.4
Cycle Q Clear(g_c), s	1.5	0.0	4.5	1.2	0.6	3.4
Prop In Lane	0.49	0.50		1.00	1.00	
Lane Grp Cap(c), veh/h	178	0	1352	579	96	2080
V/C Ratio(X)	0.44	0.00	0.47	0.14	0.33	0.34
Avail Cap(c_a), veh/h	1347	0	6774	2902	808	8925
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	7.7	6.6	15.0	3.5
Incr Delay (d2), s/veh	1.7	0.0	0.3	0.1	2.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.2	0.5	0.3	1.6
LnGrp Delay(d),s/veh	15.4	0.0	7.9	6.8	17.0	3.6
LnGrp LOS	B		A	A	B	A
Approach Vol, veh/h	78		724			743
Approach Delay, s/veh	15.4		7.8			4.2
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.8	17.6				24.3		8.6
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	15.0	63.0				83.0		27.0
Max Q Clear Time (g_c+I1), s	2.6	6.5				5.4		3.5
Green Ext Time (p_c), s	0.0	5.5				6.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	231	10	96	49	197	2	198	83	303	212	15
Future Volume (veh/h)	25	231	10	96	49	197	2	198	83	303	212	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	27	251	11	104	53	214	2	215	90	329	230	16
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	347	14	249	108	577	7	962	390	438	1728	119
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.00	0.39	0.39	0.13	0.51	0.51
Sat Flow, veh/h	71	1463	61	636	455	1583	1774	2460	997	3442	3359	232
Grp Volume(v), veh/h	289	0	0	157	0	214	2	153	152	329	120	126
Grp Sat Flow(s),veh/h/ln	1594	0	0	1091	0	1583	1774	1770	1687	1721	1770	1822
Q Serve(g_s), s	2.5	0.0	0.0	0.0	0.0	6.1	0.1	3.5	3.7	5.7	2.2	2.2
Cycle Q Clear(g_c), s	10.8	0.0	0.0	8.2	0.0	6.1	0.1	3.5	3.7	5.7	2.2	2.2
Prop In Lane	0.09		0.04	0.66		1.00	1.00		0.59	1.00		0.13
Lane Grp Cap(c), veh/h	443	0	0	357	0	577	7	692	659	438	910	937
V/C Ratio(X)	0.65	0.00	0.00	0.44	0.00	0.37	0.29	0.22	0.23	0.75	0.13	0.13
Avail Cap(c_a), veh/h	1135	0	0	638	0	924	202	692	659	505	910	937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	0.0	20.6	0.0	14.3	30.5	12.5	12.5	25.9	7.8	7.8
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.9	0.0	0.4	22.4	0.7	0.8	5.4	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.0	2.4	0.0	2.7	0.1	1.8	1.9	3.0	1.1	1.2
LnGrp Delay(d),s/veh	23.2	0.0	0.0	21.5	0.0	14.7	52.9	13.2	13.3	31.2	8.1	8.1
LnGrp LOS	C			C		B	D	B	B	C	A	A
Approach Vol, veh/h		289			371			307			575	
Approach Delay, s/veh		23.2			17.6			13.5			21.3	
Approach LOS		C			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.8	29.0		19.6	5.2	36.6		19.6
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	9.8	24.0		39.0	7.0	26.0		28.0
Max Q Clear Time (g_c+I1), s	11.7	5.7		12.8	2.1	4.2		10.2
Green Ext Time (p_c), s	0.2	1.6		1.8	0.0	1.3		1.6

Intersection Summary		
HCM 2010 Ctrl Delay	19.2	
HCM 2010 LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	591	363	185	466	0	0	0	0	402	6	244
Future Volume (veh/h)	0	591	363	185	466	0	0	0	0	402	6	244
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	642	395	201	507	0				437	7	265
Adj No. of Lanes	0	2	0	1	2	0				1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	880	541	222	2094	0				577	13	490
Arrive On Green	0.00	0.43	0.43	0.25	1.00	0.00				0.32	0.32	0.32
Sat Flow, veh/h	0	2164	1274	1774	3632	0				1774	40	1506
Grp Volume(v), veh/h	0	548	489	201	507	0				437	0	272
Grp Sat Flow(s),veh/h/ln	0	1770	1575	1774	1770	0				1774	0	1546
Q Serve(g_s), s	0.0	31.0	31.0	13.2	0.0	0.0				26.5	0.0	17.3
Cycle Q Clear(g_c), s	0.0	31.0	31.0	13.2	0.0	0.0				26.5	0.0	17.3
Prop In Lane	0.00		0.81	1.00		0.00				1.00		0.97
Lane Grp Cap(c), veh/h	0	752	670	222	2094	0				577	0	503
V/C Ratio(X)	0.00	0.73	0.73	0.91	0.24	0.00				0.76	0.00	0.54
Avail Cap(c_a), veh/h	0	752	670	222	2094	0				577	0	503
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.81	0.81	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	28.7	28.8	44.3	0.0	0.0				36.3	0.0	33.2
Incr Delay (d2), s/veh	0.0	6.1	6.9	31.3	0.2	0.0				9.0	0.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	16.4	14.7	8.3	0.1	0.0				14.4	0.0	8.0
LnGrp Delay(d),s/veh	0.0	34.9	35.6	75.6	0.2	0.0				45.3	0.0	37.3
LnGrp LOS		C	D	E	A					D		D
Approach Vol, veh/h		1037			708						709	
Approach Delay, s/veh		35.2			21.6						42.2	
Approach LOS		D			C						D	

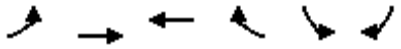
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	20.0	56.0		44.0		76.0		
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	15.0	51.0		39.0		71.0		
Max Q Clear Time (g_c+I1), s	15.2	33.0		28.5		2.0		
Green Ext Time (p_c), s	0.0	7.0		2.5		3.9		

Intersection Summary	
HCM 2010 Ctrl Delay	33.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	293	700	0	0	300	201	351	2	484	0	0	0
Future Volume (veh/h)	293	700	0	0	300	201	351	2	484	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1900			
Adj Flow Rate, veh/h	318	761	0	0	326	218	382	2	526			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	352	1917	0	0	608	395	665	2	577			
Arrive On Green	0.13	0.36	0.00	0.00	0.30	0.30	0.38	0.38	0.38			
Sat Flow, veh/h	1774	3632	0	0	2107	1309	1774	6	1538			
Grp Volume(v), veh/h	318	761	0	0	285	259	382	0	528			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1554	1774	0	1544			
Q Serve(g_s), s	21.2	19.2	0.0	0.0	16.1	16.7	20.6	0.0	39.0			
Cycle Q Clear(g_c), s	21.2	19.2	0.0	0.0	16.1	16.7	20.6	0.0	39.0			
Prop In Lane	1.00		0.00	0.00		0.84	1.00		1.00			
Lane Grp Cap(c), veh/h	352	1917	0	0	534	469	665	0	579			
V/C Ratio(X)	0.90	0.40	0.00	0.00	0.53	0.55	0.57	0.00	0.91			
Avail Cap(c_a), veh/h	458	1917	0	0	534	469	665	0	579			
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.62	0.62	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	50.9	23.6	0.0	0.0	34.9	35.1	29.9	0.0	35.6			
Incr Delay (d2), s/veh	12.0	0.4	0.0	0.0	3.8	4.6	3.6	0.0	21.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.6	9.5	0.0	0.0	8.4	7.8	10.7	0.0	20.0			
LnGrp Delay(d),s/veh	62.9	24.0	0.0	0.0	38.7	39.7	33.5	0.0	56.7			
LnGrp LOS	E	C			D	D	C		E			
Approach Vol, veh/h		1079			544			910				
Approach Delay, s/veh		35.5			39.2			46.9				
Approach LOS		D			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		70.0			28.8	41.2		50.0
Change Period (Y+Rc), s		5.0			5.0	5.0		5.0
Max Green Setting (Gmax), s		65.0			31.0	29.0		45.0
Max Q Clear Time (g_c+I1), s		21.2			23.2	18.7		41.0
Green Ext Time (p_c), s		6.4			0.6	2.5		1.9

Intersection Summary		
HCM 2010 Ctrl Delay		40.4
HCM 2010 LOS		D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	1018	409	0	208	26
Future Volume (veh/h)	8	1018	409	0	208	26
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	9	1272	445	0	226	28
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2
Cap, veh/h	29	2098	1640	0	322	287
Arrive On Green	0.02	0.59	0.46	0.00	0.18	0.18
Sat Flow, veh/h	1774	3632	3725	0	1774	1583
Grp Volume(v), veh/h	9	1272	445	0	226	28
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	0	1774	1583
Q Serve(g_s), s	0.2	10.1	3.4	0.0	5.3	0.7
Cycle Q Clear(g_c), s	0.2	10.1	3.4	0.0	5.3	0.7
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	29	2098	1640	0	322	287
V/C Ratio(X)	0.31	0.61	0.27	0.00	0.70	0.10
Avail Cap(c_a), veh/h	360	5912	4793	0	1442	1287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	5.7	7.3	0.0	17.0	15.1
Incr Delay (d2), s/veh	5.7	0.3	0.1	0.0	2.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.9	1.7	0.0	2.8	0.6
LnGrp Delay(d),s/veh	27.3	6.0	7.4	0.0	19.8	15.3
LnGrp LOS	C	A	A		B	B
Approach Vol, veh/h		1281	445		254	
Approach Delay, s/veh		6.2	7.4		19.3	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				31.3		13.0	5.7	25.5
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				74.0		36.0	9.0	60.0
Max Q Clear Time (g_c+I1), s				12.1		7.3	2.2	5.4
Green Ext Time (p_c), s				14.1		0.8	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	8.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	917	176	199	584	100	236	147	189	62	139	41
Future Volume (veh/h)	56	917	176	199	584	100	236	147	189	62	139	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.97	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	61	997	191	216	635	109	257	160	205	67	151	45
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	980	187	225	1249	214	297	185	409	63	142	42
Arrive On Green	0.04	0.33	0.33	0.13	0.42	0.42	0.27	0.27	0.27	0.14	0.14	0.14
Sat Flow, veh/h	1774	2940	562	1774	3002	514	1114	693	1534	451	1016	303
Grp Volume(v), veh/h	61	599	589	216	374	370	417	0	205	263	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1732	1774	1770	1746	1807	0	1534	1769	0	0
Q Serve(g_s), s	5.1	50.0	50.0	18.2	23.5	23.6	33.0	0.0	17.0	21.0	0.0	0.0
Cycle Q Clear(g_c), s	5.1	50.0	50.0	18.2	23.5	23.6	33.0	0.0	17.0	21.0	0.0	0.0
Prop In Lane	1.00		0.32	1.00		0.29	0.62		1.00	0.25		0.17
Lane Grp Cap(c), veh/h	78	590	577	225	736	727	482	0	409	248	0	0
V/C Ratio(X)	0.78	1.02	1.02	0.96	0.51	0.51	0.87	0.00	0.50	1.06	0.00	0.00
Avail Cap(c_a), veh/h	130	590	577	225	736	727	482	0	409	248	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	71.0	50.0	50.0	65.1	32.4	32.4	52.4	0.0	46.6	64.5	0.0	0.0
Incr Delay (d2), s/veh	15.7	41.2	42.5	49.0	0.6	0.6	18.4	0.0	4.3	74.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	31.2	30.7	12.0	11.5	11.4	18.9	0.0	7.7	15.4	0.0	0.0
LnGrp Delay(d),s/veh	86.7	91.2	92.5	114.1	33.0	33.0	70.8	0.0	50.9	139.0	0.0	0.0
LnGrp LOS	F	F	F	F	C	C	E		D	F		
Approach Vol, veh/h		1249			960			622			263	
Approach Delay, s/veh		91.6			51.3			64.3			139.0	
Approach LOS		F			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		45.0	24.0	55.0		26.0	11.6	67.4
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		40.0	19.0	50.0		21.0	11.0	58.0
Max Q Clear Time (g_c+I1), s		35.0	20.2	52.0		23.0	7.1	25.6
Green Ext Time (p_c), s		1.5	0.0	0.0		0.0	0.0	5.3

Intersection Summary		
HCM 2010 Ctrl Delay		77.6
HCM 2010 LOS		E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	858	265	425	787	0	0	0	0	219	1	305
Future Volume (veh/h)	0	858	265	425	787	0	0	0	0	219	1	305
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	933	0	462	855	0				238	1	225
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1421	636	500	2566	0				339	1	303
Arrive On Green	0.00	0.40	0.00	0.19	0.49	0.00				0.19	0.19	0.19
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1767	7	1583
Grp Volume(v), veh/h	0	933	0	462	855	0				239	0	225
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1774	0	1583
Q Serve(g_s), s	0.0	25.7	0.0	30.7	17.8	0.0				15.1	0.0	16.1
Cycle Q Clear(g_c), s	0.0	25.7	0.0	30.7	17.8	0.0				15.1	0.0	16.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1421	636	500	2566	0				340	0	303
V/C Ratio(X)	0.00	0.66	0.00	0.92	0.33	0.00				0.70	0.00	0.74
Avail Cap(c_a), veh/h	0	1421	636	621	2566	0				340	0	303
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.66	0.66	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.2	0.0	47.4	13.1	0.0				45.3	0.0	45.7
Incr Delay (d2), s/veh	0.0	2.4	0.0	12.6	0.2	0.0				11.5	0.0	15.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.0	0.0	16.8	8.8	0.0				8.5	0.0	8.3
LnGrp Delay(d),s/veh	0.0	31.6	0.0	60.1	13.3	0.0				56.8	0.0	60.8
LnGrp LOS		C		E	B					E		E
Approach Vol, veh/h		933			1317						464	
Approach Delay, s/veh		31.6			29.7						58.7	
Approach LOS		C			C						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			38.8	53.2		28.0		92.0
Change Period (Y+Rc), s			5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s			42.0	40.0		23.0		87.0
Max Q Clear Time (g_c+I1), s			32.7	27.7		18.1		19.8
Green Ext Time (p_c), s			1.1	5.2		1.0		7.6

Intersection Summary	
HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	842	0	0	968	154	244	10	365	0	0	0
Future Volume (veh/h)	235	842	0	0	968	154	244	10	365	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	255	915	0	0	1052	0	265	11	397			
Adj No. of Lanes	1	2	0	0	2	1	0	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	289	2300	0	0	1576	705	455	19	422			
Arrive On Green	0.05	0.21	0.00	0.00	0.45	0.00	0.27	0.27	0.27			
Sat Flow, veh/h	1774	3632	0	0	3632	1583	1707	71	1583			
Grp Volume(v), veh/h	255	915	0	0	1052	0	276	0	397			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1583	1777	0	1583			
Q Serve(g_s), s	17.1	26.6	0.0	0.0	28.1	0.0	16.2	0.0	29.4			
Cycle Q Clear(g_c), s	17.1	26.6	0.0	0.0	28.1	0.0	16.2	0.0	29.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.96		1.00			
Lane Grp Cap(c), veh/h	289	2300	0	0	1576	705	474	0	422			
V/C Ratio(X)	0.88	0.40	0.00	0.00	0.67	0.00	0.58	0.00	0.94			
Avail Cap(c_a), veh/h	384	2300	0	0	1576	705	474	0	422			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.67	0.67	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	55.6	27.0	0.0	0.0	26.3	0.0	38.2	0.0	43.1			
Incr Delay (d2), s/veh	12.1	0.3	0.0	0.0	2.3	0.0	5.2	0.0	31.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.4	13.2	0.0	0.0	14.2	0.0	8.6	0.0	16.6			
LnGrp Delay(d),s/veh	67.7	27.3	0.0	0.0	28.5	0.0	43.4	0.0	74.2			
LnGrp LOS	E	C			C		D		E			
Approach Vol, veh/h		1170			1052			673				
Approach Delay, s/veh		36.1			28.5			61.5				
Approach LOS		D			C			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		37.0		83.0			24.5	58.5
Change Period (Y+Rc), s		5.0		5.0			5.0	5.0
Max Green Setting (Gmax), s		32.0		78.0			26.0	47.0
Max Q Clear Time (g_c+I1), s		31.4		28.6			19.1	30.1
Green Ext Time (p_c), s		0.2		8.2			0.4	7.1

Intersection Summary	
HCM 2010 Ctrl Delay	39.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	173	268	6	112	27	154	181	16	59	205	402
Future Volume (veh/h)	334	173	268	6	112	27	154	181	16	59	205	402
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	363	188	291	7	122	29	167	197	17	64	223	437
Adj No. of Lanes	2	2	0	2	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	464	408	365	43	383	172	206	1552	133	111	737	660
Arrive On Green	0.13	0.23	0.23	0.01	0.11	0.11	0.12	0.47	0.47	0.06	0.42	0.42
Sat Flow, veh/h	3442	1770	1583	3442	3539	1583	1774	3300	282	1774	1770	1583
Grp Volume(v), veh/h	363	188	291	7	122	29	167	105	109	64	223	437
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1774	1770	1813	1774	1770	1583
Q Serve(g_s), s	9.1	8.2	15.5	0.2	2.8	1.5	8.2	3.0	3.0	3.1	7.5	19.9
Cycle Q Clear(g_c), s	9.1	8.2	15.5	0.2	2.8	1.5	8.2	3.0	3.0	3.1	7.5	19.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	464	408	365	43	383	172	206	832	853	111	737	660
V/C Ratio(X)	0.78	0.46	0.80	0.16	0.32	0.17	0.81	0.13	0.13	0.58	0.30	0.66
Avail Cap(c_a), veh/h	809	813	727	270	1070	479	437	832	853	199	737	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	29.6	32.4	43.6	36.8	36.2	38.5	13.3	13.3	40.7	17.4	21.0
Incr Delay (d2), s/veh	2.9	0.8	4.0	1.8	0.5	0.5	7.5	0.3	0.3	4.7	1.1	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	4.1	7.1	0.1	1.4	0.7	4.5	1.5	1.6	1.7	3.9	9.6
LnGrp Delay(d),s/veh	40.3	30.4	36.4	45.4	37.2	36.6	46.0	13.6	13.6	45.4	18.4	26.2
LnGrp LOS	D	C	D	D	D	D	D	B	B	D	B	C
Approach Vol, veh/h		842			158			381			724	
Approach Delay, s/veh		36.7			37.5			27.8			25.5	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	47.0	6.1	25.6	15.4	42.2	17.0	14.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	42.0	7.0	41.0	22.0	30.0	21.0	27.0
Max Q Clear Time (g_c+I1), s	5.1	5.0	2.2	17.5	10.2	21.9	11.1	4.8
Green Ext Time (p_c), s	0.0	1.3	0.0	3.1	0.3	2.7	0.9	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	31.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1372	354	578	420	0	0	0	0	422	10	1115
Future Volume (veh/h)	0	1372	354	578	420	0	0	0	0	422	10	1115
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1491	385	628	457	0				467	0	1212
Adj No. of Lanes	1	4	0	2	3	0				2	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	1161	3332	860	0	659	0				322	0	2341
Arrive On Green	0.00	0.65	0.65	0.13	0.13	0.00				0.09	0.00	0.09
Sat Flow, veh/h	1774	5091	1314	0	5253	0				3548	0	2953
Grp Volume(v), veh/h	0	1407	469	0	457	0				467	0	1212
Grp Sat Flow(s),veh/h/ln	1774	1602	1599	0	1695	0				1774	0	1476
Q Serve(g_s), s	0.0	17.2	17.2	0.0	10.3	0.0				10.9	0.0	10.9
Cycle Q Clear(g_c), s	0.0	17.2	17.2	0.0	10.3	0.0				10.9	0.0	10.9
Prop In Lane	1.00		0.82	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	1161	3145	1047	0	659	0				322	0	2341
V/C Ratio(X)	0.00	0.45	0.45	0.00	0.69	0.00				1.45	0.00	0.52
Avail Cap(c_a), veh/h	1161	3145	1047	0	975	0				322	0	2341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.1	10.1	0.0	49.9	0.0				54.5	0.0	5.3
Incr Delay (d2), s/veh	0.0	0.5	1.4	0.0	1.3	0.0				218.7	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.7	8.0	0.0	4.9	0.0				15.1	0.0	20.3
LnGrp Delay(d),s/veh	0.0	10.6	11.5	0.0	51.3	0.0				273.3	0.0	6.1
LnGrp LOS		B	B		D					F		A
Approach Vol, veh/h		1876			457						1679	
Approach Delay, s/veh		10.8			51.3						80.4	
Approach LOS		B			D						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		83.5		15.9		20.6		
Change Period (Y+Rc), s		5.0		5.0		* 5		
Max Green Setting (Gmax), s		36.0		10.9		* 23		
Max Q Clear Time (g_c+I1), s		19.2		12.9		12.3		
Green Ext Time (p_c), s		11.9		0.0		2.2		

Intersection Summary	
HCM 2010 Ctrl Delay	44.6
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	758	0	0	1339	195	364
Future Volume (veh/h)	758	0	0	1339	195	364
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	0	1863	1863	1863
Adj Flow Rate, veh/h	824	0	0	1455	212	396
Adj No. of Lanes	3	0	0	4	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	2246	0	0	2830	1635	752
Arrive On Green	0.44	0.00	0.00	0.44	0.47	0.47
Sat Flow, veh/h	5421	0	0	6929	3442	1583
Grp Volume(v), veh/h	824	0	0	1455	212	396
Grp Sat Flow(s),veh/h/ln	1695	0	0	1602	1721	1583
Q Serve(g_s), s	13.0	0.0	0.0	19.7	4.1	21.0
Cycle Q Clear(g_c), s	13.0	0.0	0.0	19.7	4.1	21.0
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2246	0	0	2830	1635	752
V/C Ratio(X)	0.37	0.00	0.00	0.51	0.13	0.53
Avail Cap(c_a), veh/h	2246	0	0	2830	1635	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	0.0	0.0	24.2	17.6	22.1
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.7	0.2	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	0.0	8.8	2.0	9.7
LnGrp Delay(d),s/veh	22.8	0.0	0.0	24.9	17.8	24.7
LnGrp LOS	C			C	B	C
Approach Vol, veh/h	824			1455	608	
Approach Delay, s/veh	22.8			24.9	22.3	
Approach LOS	C			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		58.0				58.0		62.0
Change Period (Y+Rc), s		5.0				5.0		5.0
Max Green Setting (Gmax), s		53.0				53.0		57.0
Max Q Clear Time (g_c+I1), s		15.0				21.7		23.0
Green Ext Time (p_c), s		6.9				13.7		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	921	1	12	984	43	64	11	22	52	3	214
Future Volume (veh/h)	205	921	1	12	984	43	64	11	22	52	3	214
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	223	921	1	13	1070	47	70	12	24	57	0	235
Adj No. of Lanes	2	2	1	1	2	0	2	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	1688	738	36	1434	63	181	156	311	88	0	870
Arrive On Green	0.08	0.48	0.48	0.03	0.55	0.55	0.05	0.29	0.29	0.05	0.00	0.28
Sat Flow, veh/h	3442	3539	1547	1774	3450	151	3442	544	1088	1774	0	3071
Grp Volume(v), veh/h	223	921	1	13	549	568	70	0	36	57	0	235
Grp Sat Flow(s),veh/h/ln	1721	1770	1547	1774	1770	1832	1721	0	1631	1774	0	1536
Q Serve(g_s), s	7.6	22.1	0.0	0.9	28.3	28.3	2.4	0.0	1.9	3.8	0.0	7.1
Cycle Q Clear(g_c), s	7.6	22.1	0.0	0.9	28.3	28.3	2.4	0.0	1.9	3.8	0.0	7.1
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	281	1688	738	36	736	761	181	0	467	88	0	870
V/C Ratio(X)	0.79	0.55	0.00	0.36	0.75	0.75	0.39	0.00	0.08	0.65	0.00	0.27
Avail Cap(c_a), veh/h	344	1688	738	118	736	761	402	0	467	237	0	870
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.1	22.2	16.4	57.6	22.0	22.0	55.0	0.0	31.2	56.0	0.0	33.4
Incr Delay (d2), s/veh	10.0	1.3	0.0	4.7	5.5	5.3	1.3	0.0	0.3	7.7	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	11.0	0.0	0.5	14.7	15.2	1.2	0.0	0.9	2.0	0.0	3.1
LnGrp Delay(d),s/veh	64.1	23.5	16.4	62.2	27.5	27.3	56.3	0.0	31.6	63.7	0.0	34.1
LnGrp LOS	E	C	B	E	C	C	E		C	E		C
Approach Vol, veh/h		1145			1130			106			292	
Approach Delay, s/veh		31.4			27.8			47.9			39.9	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	62.2	11.3	39.0	14.8	54.9	11.0	39.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	8.0	44.0	14.0	34.0	12.0	40.0	16.0	32.0
Max Q Clear Time (g_c+I1), s	2.9	24.1	4.4	9.1	9.6	30.3	5.8	3.9
Green Ext Time (p_c), s	0.0	6.6	0.1	0.9	0.2	5.0	0.1	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	866	129	13	879	160	41
Future Volume (veh/h)	866	129	13	879	160	41
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	941	140	14	955	174	45
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1094	490	39	1319	1873	861
Arrive On Green	0.62	0.62	0.02	0.37	0.54	0.54
Sat Flow, veh/h	3632	1583	1774	3632	3442	1583
Grp Volume(v), veh/h	941	140	14	955	174	45
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1721	1583
Q Serve(g_s), s	26.0	4.9	0.9	27.8	2.9	1.6
Cycle Q Clear(g_c), s	26.0	4.9	0.9	27.8	2.9	1.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1094	490	39	1319	1873	861
V/C Ratio(X)	0.86	0.29	0.36	0.72	0.09	0.05
Avail Cap(c_a), veh/h	2065	924	103	2418	1873	861
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	16.8	57.9	32.3	13.1	12.8
Incr Delay (d2), s/veh	1.7	0.2	5.6	0.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	2.1	0.5	13.7	1.4	0.7
LnGrp Delay(d),s/veh	22.4	17.0	63.5	33.1	13.2	13.0
LnGrp LOS	C	B	E	C	B	B
Approach Vol, veh/h	1081			969	219	
Approach Delay, s/veh	21.7			33.6	13.2	
Approach LOS	C			C	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		70.3	7.6	42.1				49.7
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		28.0	7.0	70.0				82.0
Max Q Clear Time (g_c+I1), s		4.9	2.9	28.0				29.8
Green Ext Time (p_c), s		0.7	0.0	9.1				8.8

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

ATTACHMENT C

POST MITIGATION INTERSECTION ANALYSIS WORKSHEETS

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	139	244	10	6	42
Future Volume (veh/h)	10	139	244	10	6	42
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	108	265	11	7	46
Adj No. of Lanes	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	794	365	297	1290	906	741
Arrive On Green	0.23	0.23	0.17	0.69	0.49	0.49
Sat Flow, veh/h	3442	1583	1774	1863	1863	1524
Grp Volume(v), veh/h	11	108	265	11	7	46
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1863	1863	1524
Q Serve(g_s), s	0.3	7.3	19.0	0.2	0.3	2.1
Cycle Q Clear(g_c), s	0.3	7.3	19.0	0.2	0.3	2.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	794	365	297	1290	906	741
V/C Ratio(X)	0.01	0.30	0.89	0.01	0.01	0.06
Avail Cap(c_a), veh/h	794	365	682	1290	906	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	41.3	52.9	6.2	17.2	17.7
Incr Delay (d2), s/veh	0.0	2.1	9.0	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	7.1	10.1	0.1	0.1	0.9
LnGrp Delay(d),s/veh	38.6	43.3	62.0	6.2	17.2	17.9
LnGrp LOS	D	D	E	A	B	B
Approach Vol, veh/h	119			276	53	
Approach Delay, s/veh	42.9			59.8	17.8	
Approach LOS	D			E	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		95.0		35.0	26.8	68.2		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		90.0		30.0	50.0	35.0		
Max Q Clear Time (g_c+I1), s		2.2		9.3	21.0	4.1		
Green Ext Time (p_c), s		0.0		0.3	0.8	0.1		

Intersection Summary	
HCM 2010 Ctrl Delay	50.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	125	0	0	53	233	119	5	24	0	0	0
Future Volume (veh/h)	351	125	0	0	53	233	119	5	24	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	393	136	0	0	58	253	139	0	19			
Adj No. of Lanes	2	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	441	1987	0	0	1397	610	1283	0	557			
Arrive On Green	0.21	0.94	0.00	0.00	0.39	0.39	0.36	0.00	0.36			
Sat Flow, veh/h	3442	3632	0	0	3632	1544	3548	0	1542			
Grp Volume(v), veh/h	393	136	0	0	58	253	139	0	19			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1544	1774	0	1542			
Q Serve(g_s), s	14.4	0.3	0.0	0.0	1.3	15.4	3.4	0.0	1.0			
Cycle Q Clear(g_c), s	14.4	0.3	0.0	0.0	1.3	15.4	3.4	0.0	1.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	441	1987	0	0	1397	610	1283	0	557			
V/C Ratio(X)	0.89	0.07	0.00	0.00	0.04	0.42	0.11	0.00	0.03			
Avail Cap(c_a), veh/h	477	1987	0	0	1397	610	1283	0	557			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.99	0.99	0.00	0.00	0.69	0.69	1.00	0.00	1.00			
Uniform Delay (d), s/veh	50.2	1.8	0.0	0.0	24.2	28.5	27.6	0.0	26.8			
Incr Delay (d2), s/veh	17.6	0.1	0.0	0.0	0.0	1.4	0.2	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.9	0.2	0.0	0.0	0.6	6.8	1.7	0.0	0.5			
LnGrp Delay(d),s/veh	67.8	1.9	0.0	0.0	24.2	29.9	27.7	0.0	26.9			
LnGrp LOS	E	A			C	C	C		C			
Approach Vol, veh/h		529			311			158				
Approach Delay, s/veh		50.8			28.9			27.6				
Approach LOS		D			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		52.0		78.0			21.7	56.3
Change Period (Y+Rc), s		5.0		5.0			5.0	5.0
Max Green Setting (Gmax), s		47.0		73.0			18.0	50.0
Max Q Clear Time (g_c+I1), s		5.4		2.3			16.4	17.4
Green Ext Time (p_c), s		0.5		1.0			0.3	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	40.3
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	5.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	132	14	37	111	144	49
Future Vol, veh/h	132	14	37	111	144	49
Conflicting Peds, #/hr	0	10	10	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	30
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	143	15	40	121	157	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	168	0	372	171
Stage 1	-	-	-	-	161	-
Stage 2	-	-	-	-	211	-
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	-	-	1410	-	629	873
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	824	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1397	-	598	856
Mov Cap-2 Maneuver	-	-	-	-	598	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	598	856	-	-	1397	-
HCM Lane V/C Ratio	0.262	0.062	-	-	0.029	-
HCM Control Delay (s)	13.1	9.5	-	-	7.7	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	1	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	70	83	10	20	29
Future Vol, veh/h	48	70	83	10	20	29
Conflicting Peds, #/hr	10	0	0	10	10	10
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	52	76	90	11	22	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	111	0	-	0	296	116
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	190	-
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	-	-	-	695	936
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	842	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1465	-	-	-	656	918
Mov Cap-2 Maneuver	-	-	-	-	656	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1465	-	-	-	789
HCM Lane V/C Ratio	0.036	-	-	-	0.068
HCM Control Delay (s)	7.5	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	74.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	129	5	4	614	9	0	0	5	4
Future Vol, veh/h	0	0	0	129	5	4	614	9	0	0	5	4
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
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	-
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	142	5	5	667	10	0	0	5	4

Major/Minor	Minor1		Major1				Major2		
Conflicting Flow All	1361	1363	20	19	0	-	-	-	0
Stage 1	1344	1344	-	-	-	-	-	-	-
Stage 2	17	19	-	-	-	-	-	-	-
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	163	148	1058	1597	-	0	0	-	-
Stage 1	243	220	-	-	-	0	0	-	-
Stage 2	1006	880	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	~ 94	0	1048	1597	-	-	-	-	-
Mov Cap-2 Maneuver	~ 94	0	-	-	-	-	-	-	-
Stage 1	~ 141	0	-	-	-	-	-	-	-
Stage 2	996	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 374.9	8.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1597	-	97	-	-
HCM Lane V/C Ratio	0.418	-	1.565	-	-
HCM Control Delay (s)	8.9	0	$ 374.9	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	2.1	-	11.7	-	-

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	816	171	352	897	104	165	138	481	136	191	44
Future Volume (veh/h)	47	816	171	352	897	104	165	138	481	136	191	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	51	887	186	383	975	113	179	150	523	148	208	48
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	811	170	355	1396	162	184	154	284	131	184	42
Arrive On Green	0.04	0.28	0.28	0.20	0.44	0.44	0.19	0.19	0.19	0.20	0.20	0.20
Sat Flow, veh/h	1774	2896	607	1774	3181	369	987	827	1521	653	918	212
Grp Volume(v), veh/h	51	542	531	383	542	546	329	0	523	404	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1733	1774	1770	1780	1813	0	1521	1783	0	0
Q Serve(g_s), s	4.3	42.0	42.0	30.0	37.2	37.2	27.0	0.0	28.0	30.0	0.0	0.0
Cycle Q Clear(g_c), s	4.3	42.0	42.0	30.0	37.2	37.2	27.0	0.0	28.0	30.0	0.0	0.0
Prop In Lane	1.00		0.35	1.00		0.21	0.54		1.00	0.37		0.12
Lane Grp Cap(c), veh/h	73	495	485	355	777	781	339	0	284	357	0	0
V/C Ratio(X)	0.70	1.09	1.09	1.08	0.70	0.70	0.97	0.00	1.84	1.13	0.00	0.00
Avail Cap(c_a), veh/h	106	495	485	355	777	781	339	0	284	357	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	71.0	54.0	54.0	60.0	34.0	34.1	60.6	0.0	61.0	60.0	0.0	0.0
Incr Delay (d2), s/veh	11.5	68.3	69.0	70.6	2.8	2.8	42.3	0.0	392.3	88.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	29.9	29.4	21.6	18.7	18.8	17.5	0.0	42.7	23.6	0.0	0.0
LnGrp Delay(d),s/veh	82.5	122.3	123.0	130.6	36.8	36.8	102.9	0.0	453.3	148.8	0.0	0.0
LnGrp LOS	F	F	F	F	D	D	F		F	F		
Approach Vol, veh/h		1124			1471			852			404	
Approach Delay, s/veh		120.8			61.2			318.0			148.8	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		33.0	35.0	47.0		35.0	11.2	70.8
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		28.0	30.0	42.0		30.0	9.0	63.0
Max Q Clear Time (g_c+I1), s		30.0	32.0	44.0		32.0	6.3	39.2
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	8.0

Intersection Summary	
HCM 2010 Ctrl Delay	144.6
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	917	145	199	584	100	94	147	189	62	139	41
Future Volume (veh/h)	56	917	145	199	584	100	94	147	189	62	139	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	61	997	158	216	635	109	102	160	205	67	151	45
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	1120	177	244	1379	236	133	209	285	71	160	48
Arrive On Green	0.05	0.37	0.37	0.14	0.46	0.46	0.19	0.19	0.19	0.16	0.16	0.16
Sat Flow, veh/h	1774	3041	481	1774	3003	514	711	1116	1521	451	1016	303
Grp Volume(v), veh/h	61	580	575	216	374	370	262	0	205	263	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1752	1774	1770	1748	1827	0	1521	1770	0	0
Q Serve(g_s), s	4.5	41.1	41.3	16.0	19.3	19.4	18.2	0.0	16.9	19.7	0.0	0.0
Cycle Q Clear(g_c), s	4.5	41.1	41.3	16.0	19.3	19.4	18.2	0.0	16.9	19.7	0.0	0.0
Prop In Lane	1.00		0.27	1.00		0.29	0.39		1.00	0.25		0.17
Lane Grp Cap(c), veh/h	83	652	645	244	813	803	342	0	285	278	0	0
V/C Ratio(X)	0.73	0.89	0.89	0.88	0.46	0.46	0.77	0.00	0.72	0.95	0.00	0.00
Avail Cap(c_a), veh/h	305	728	721	385	813	803	342	0	285	278	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	62.9	39.6	39.7	56.6	24.8	24.8	51.6	0.0	51.0	55.8	0.0	0.0
Incr Delay (d2), s/veh	11.7	12.1	12.4	13.8	0.4	0.4	15.1	0.0	14.6	41.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	22.3	22.2	8.8	9.5	9.5	10.6	0.0	8.3	12.9	0.0	0.0
LnGrp Delay(d),s/veh	74.5	51.8	52.1	70.4	25.2	25.2	66.7	0.0	65.6	97.4	0.0	0.0
LnGrp LOS	E	D	D	E	C	C	E		E	F		
Approach Vol, veh/h		1216			960			467			263	
Approach Delay, s/veh		53.1			35.4			66.2			97.4	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		30.0	23.4	54.2		26.0	11.3	66.4
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		25.0	29.0	55.0		21.0	23.0	61.0
Max Q Clear Time (g_c+I1), s		20.2	18.0	43.3		21.7	6.5	21.4
Green Ext Time (p_c), s		1.0	0.4	6.0		0.0	0.1	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	53.4
HCM 2010 LOS	D