APPENDIX A

LEVEL OF SERVICE CONCEPTS, ANALYSIS METHODOLOGIES, STANDARDS OF SIGNIFICANCE

Roadway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
(Used for surface streets, freeways, expressways and conventional highways)			
"A"	≤0.41	None	Free flow.
"B"	>0.41-0.62	None	Free to stable flow, light to moderate volumes.
"C"	>0.62-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	>0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	>0.92-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
(Used for surface streets and conventional highways)			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
(Used for freeways and expressways)			
"F(0)"	>1.00-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F(1)"	>1.25-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
"F(2)"	>1.35-1.45	Very Severe 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F(3)"	>1.45	Extremely Severe 3+ hours of delay	Gridlock

Source: Caltrans, 1992.

LEVEL OF SERVICE (LOS) DEFINITIONS

The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. Levels of service for freeway segments can generally be categorized as shown in the table above.

Signalized Intersection Level of Service
Highway Capacity Manual Operational Analysis Method

The operational analysis method for evaluation of signalized intersections presented in the *2000 Highway Capacity Manual* (Transportation Research Board Special Report 209) defines level of service in terms of delay, or more specifically, control stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption, and lost travel time.

Control Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
<10	LOS A describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
>10 – 20	LOS B describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
>20 – 35	LOS C describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
>35 – 55	LOS D describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
>55 – 80	LOS E is considered to be the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80	LOS F describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: Highway Capacity Manual 2000, Exhibit 16-2

Minor Street Stop and All-Way Stop Controlled Intersection Level of Service
Highway Capacity Manual Operational Analysis Method

The Highway Capacity Manual (HCM) analysis method for evaluating minor street stop intersections is based on the average total delay for each impeded movement. For all-way stop controlled intersections it is based on the average total delay for the entire intersection. As used here, total delay is defined as the total elapsed time from when a when a vehicle stops at the end of a queue until the vehicle departs from the stop line; this time includes the time required for the vehicle to travel from the last-in-queue to the first-in-queue position. The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. The resulting delay is used to determine the level of service as shown in the following table.

Average Total Delay	Level of Service (LOS) Characteristics
0-10	*LOS A* – Little or no delay
>10 – 15	*LOS B* – Short traffic delay
>15 – 25	*LOS C* – Average traffic delay
>25 – 35	*LOS D* – Long traffic delays
>35 – 50	*LOS E* – Very long traffic delays
>50	*LOS F* – When the demand exceeds the capacity of the lane, extreme delays will be encountered and queuing may cause severe congestion to the intersection.

Source: Highway Capacity Manual 2000, Exhibit 17-22

ESCONDIDO
City of Choice

CITY OF ESCONDIDO
Traffic Impact Analysis Guideline

The City's General Plan (2012) established a goal of L.O.S. "C" for all City streets, however, due to overall citywide traffic conditions, L.O.S. "D" was considered acceptable. If the existing LOS is "D" or worse, preservation of the existing LOS must be maintained, or acceptable mitigation must be identified.
Currently the approved level-of-service standards for different street segments based on their classifications and ADT within the City of Escondido are as follows:

CITY OF ESCONDIDO PROPOSED LEVEL OF SERVICE STANDARDS
STREET SEGMENT AVERAGE DAILY VEHICLE TRIP THRESHOLDS

Street Classification	Lanes	Cross Sections	Level of Service				
			A	B	C	D	E
Prime Arterial	(8 lanes) (6 lanes)	116/136 (NP) 106/126 (NP)	23,800 20,400	37,800 32,400	51,800 44,400	62,300 53,400	70,000 60,000
Major Road	(6 lanes) (4 lanes)	90/110 (NP) 82/102 (NP)	17,000 12,600	27,000 20,000	37,000 27,400	44,500 32,900	50,000 37,000
Collector	(4 lanes) (4 lanes)	64/84 (NP) (WP)	11,600 6,800	18,500 10,800	25,300 14,800	30,400 17,800	34,200 20,000
Local Collector	(2 lanes)	42/66 (NP) (WP)	5,100 3,400	8,100 5,400	11,100 7,400	13,400 8900	15,000 10,000

NP: No Parking, WP: With Parking
The following V/C Ratios were utilized for determining Existing and Future Level of Service.

Level of Service	(V/C Ratio)
A - Less than or Equal to	0.00 to 0.34
B - Less than or Equal to	0.35 to 0.54
C - Less than or Equal to	0.55 to 0.74
D - Less than or Equal to	0.75 to 0.89
E - Less than or Equal to	0.90 to 1.00

For any development, passenger vehicle trips shall be estimated using the rates and methodologies outlined in "Trip Generation Rates for San Diego Region", latest edition, published by SANDAG (if rates not available, ITE rates shall be used). Since based on the adopted 2013 General Plan of the City of Escondido, the goal Level-Of-Service is C, a Traffic Impact Analysis (TIA) must be prepared for any project that generates and adds more than 2% of the ADT for LOS C to any street segment within the preliminary study area identified by the City staff. Based on the above mentioned threshold, the following table contains the trigger-points for Traffic Impact Analysis within the City of Escondido for different street classifications.

PROPOSED A.D.T. THRESHOLDS FOR ROADWAY SEGMENTS TO
TRIGGER TRAFFIC IMPACT ANALYSIS FOR NEW DEVELOPMENTS

Street Classification	Lanes	Cross Sections (ft.)	TIA Trigger-Points (ADT generation)
Prime Arterial	(8 lanes) (6 lanes)	116/136 (NP) 106/126 (NP)	900 800
Major Road	(6 lanes) (4 lanes)	90/110 (NP) 82/102 (NP)	700 500
Collector	(4 lanes) (4 lanes)	64/84 (NP) (WP)	500 250
Local Collector and other	(2 lanes) (2 lanes)	42/66 (NP) (WP)	200

A Traffic Impact Analysis should be undertaken for any type of development that generates daily trips more than the above mentioned trigger-points. Certain types of projects which generate less than 500 ADTs may be considered by the City staff for a TIA waiver only where the affected segments and intersections operate at LOS C or better. On the contrary, City staff may require a TIA for any kind of development if the possible traffic impact of the project is believed to be considerable. The study area would be identified based on the fact that any complete transportation impact analysis should include at least all site access points and major intersections (signalized and un-signalized) adjacent to the site in the study area. Below are the proposed trigger-points to identify if an intersection should be included in the TIA or not:

PROPOSED A.D.T. THRESHOLDS FOR INTERSECTIONS TO BE INCLUDED IN THE TRAFFIC IMPACT ANALYSIS

Intersection Classification (Minor leg of the intersection)	**TIA Trigger-Points (AM or PM peak hour trips added to any leg)**
Prime Arterial	50
Major Road	40
Collector	30
Local Collector	20

* 2% of A.D.T. for LOS "C" has been used as a guide to calculate the trigger-point values
* Study area can be expanded by City Engineer

Certain types of developments that their traffic impact is found to be significant need to identify measures to mitigate the traffic impact. In accordance with "SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region", the following thresholds shall be used to identify if a project is of significance traffic impact under any scenario. Based on SANTEC/ITE guidelines, if now or in the future, the project's traffic impact causes the values in the table below to be exceeded in a roadway segment or an intersection that is operating at a LOS D or worse, it is determined to be a significant project and it shall identify mitigation measures. Below are the proposed thresholds for determining significant traffic impacts to a roadway segment or an intersection.

CITY OF ESCONDIDO PROPOSED THRESHOLDS TO IDENTIFY PROJECTS SIGNIFICANT TRAFFIC IMPACT

Level of Service With Project	**Allowable Change due to Project Impact**		
	Roadway Segments		**Intersections**
	V/C	**Speed Reduction(mph)**	**Delay (sec.)**
D, E or F	0.02	1	2

* No Significant Impact occurs at areas in GP Downtown Specific Area that operates on LOS "D" or better
* Mitigation measures should also be considered for any segment or intersection operating on LOS "F" subject to less than significant impact.
* V: Volume C: Capacity (use LOS "E")

APPENDIX B

TRAFFIC COUNT DATA

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE:				
9/3/14	LOCATION:	ESCONDIDO	PROJECT #:	PTD14-0905-02
WEDNESDAY	NORTH & SOUTH:	CHARISE	LOCATION #:	1
	EAST & WEST:	BROTHERTON	CONTROL:	1-WAY STOP (SB)

NOTES:

AM / PM / MD / OTHER / OTHER

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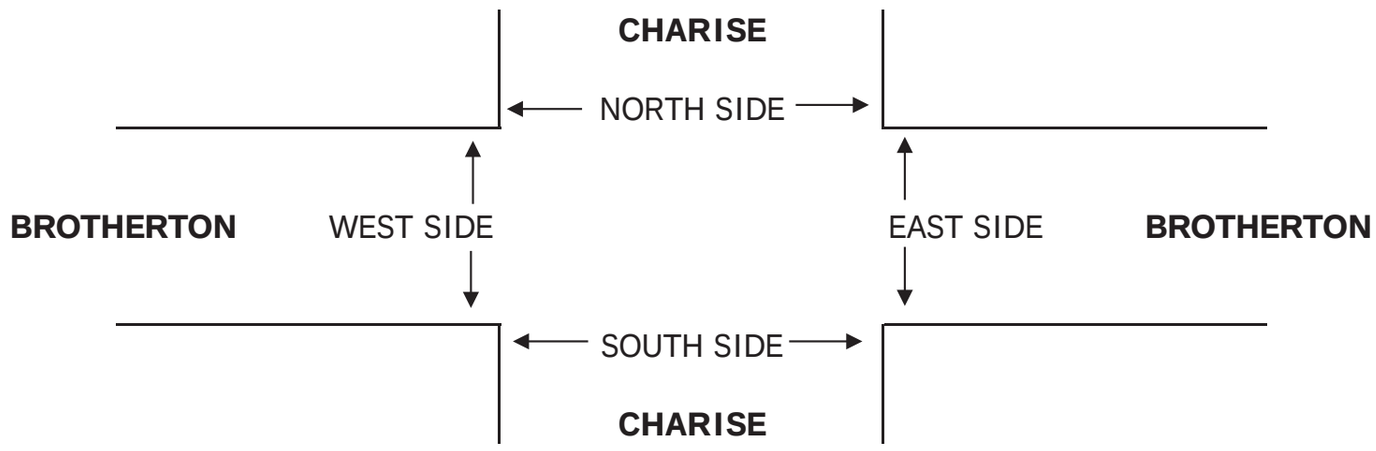
		NORTHBOUND CHARISE			SOUTHBOUND CHARISE			EASTBOUND BROTHERTON			WESTBOUND BROTHERTON				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	X	X	X	0.5	X	0.5	0	1	X	X	1	0		X	X	X	X	
AM	7:00 AM				0		0	0	2			7	0	9					0
	7:15 AM				1		0	0	3			6	1	11					0
	7:30 AM				0		3	1	4			13	1	22					0
	7:45 AM				3		3	2	5			6	1	20					0
	8:00 AM				4		1	4	6			4	1	20					0
	8:15 AM				4		1	0	6			4	0	15					0
	8:30 AM				0		0	0	0			6	1	7					0
	8:45 AM				5		1	1	4			6	1	18					0
	VOLUMES	0	0	0	17	0	9	8	30	0	0	52	6	122	0	0	0	0	0
	APPROACH %	0%	0%	0%	65%	0%	35%	21%	79%	0%	0%	90%	10%						
	APP/DEPART	0	/	14	26	/	0	38	/	47	58	/	61	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	0	11	0	8	7	21	0	0	27	3	77					
	APPROACH %	0%	0%	0%	58%	0%	42%	25%	75%	0%	0%	90%	10%						
	PEAK HR FACTOR		0.000			0.792			0.700			0.536		0.875					
	APP/DEPART	0	/	10	19	/	0	28	/	32	30	/	35	0					
PM	4:00 PM				2		0	4	2			10	1	19					0
	4:15 PM				1		2	1	6			5	1	16					0
	4:30 PM				1		1	2	2			9	2	17					0
	4:45 PM				0		0	1	2			8	2	13					0
	5:00 PM				0		3	4	4			13	2	26					0
	5:15 PM				1		2	3	2			16	3	27					0
	5:30 PM				3		1	1	6			12	1	24					0
	5:45 PM				0		0	3	3			6	5	17					0
	VOLUMES	0	0	0	8	0	9	19	27	0	0	79	17	159	0	0	0	0	0
	APPROACH %	0%	0%	0%	47%	0%	53%	41%	59%	0%	0%	82%	18%						
	APP/DEPART	0	/	36	17	/	0	46	/	35	96	/	88	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	0	0	4	0	6	11	15	0	0	47	11	94					
	APPROACH %	0%	0%	0%	40%	0%	60%	42%	58%	0%	0%	81%	19%						
	PEAK HR FACTOR		0.000			0.625			0.813			0.763		0.870					
	APP/DEPART	0	/	22	10	/	0	26	/	19	58	/	53	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
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AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

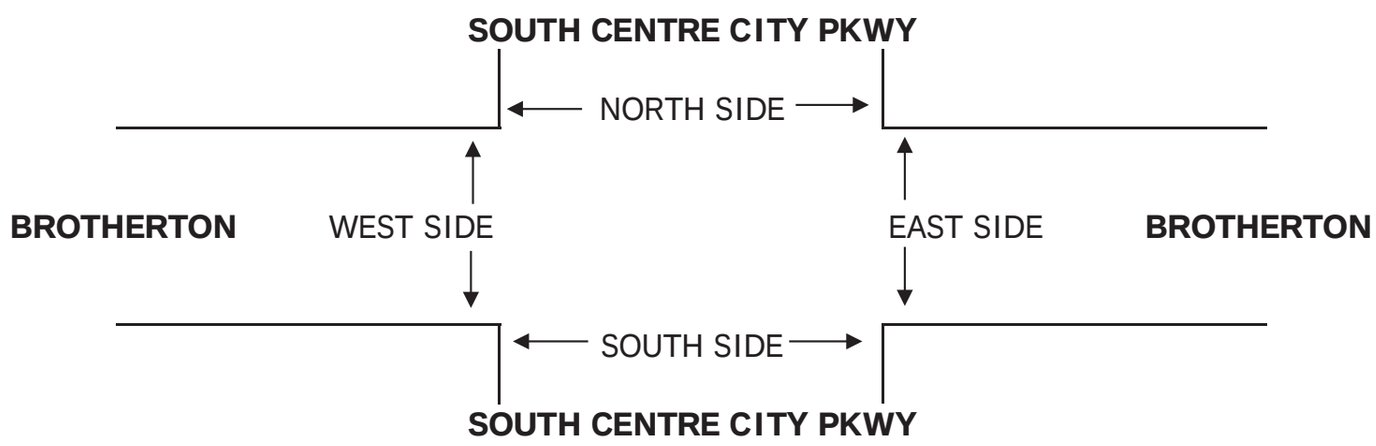
DATE:				
9/3/14	LOCATION:	ESCONDIDO	PROJECT #:	PTD14-0905-02
WEDNESDAY	NORTH & SOUTH:	SOUTH CENTRE CITY PKWY	LOCATION #:	2
	EAST & WEST:	BROTHERTON	CONTROL:	1-WAY STOP (NB)

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

	NORTHBOUND SOUTH CENTRE CITY PKWY			SOUTHBOUND SOUTH CENTRE CITY PKWY			EASTBOUND BROTHERTON			WESTBOUND BROTHERTON				U-TURNS				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
LANES:	0.5	X	0.5	X	X	X	X	1	0	0	1	X		X	X	X	X	
7:00 AM	0		0					2	1	2	7		12					0
7:15 AM	0		0					2	3	0	8		13					0
7:30 AM	1		0					3	0	6	13		23					0
7:45 AM	1		0					8	0	5	5		19					0
8:00 AM	0		0					8	2	9	5		24					0
8:15 AM	0		0					8	1	4	4		17					0
8:30 AM	0		0					0	0	4	7		11					0
8:45 AM	0		0					5	4	4	8		21					0
AM VOLUMES	2	0	0	0	0	0	0	36	11	34	57	0	140	0	0	0	0	0
AM APPROACH %	100%	0%	0%	0%	0%	0%	0%	77%	23%	37%	63%	0%						
AM APP/DEPART	2	/	0	0	/	45	47	/	36	91	/	59	0					
AM BEGIN PEAK HR		7:30 AM																
AM VOLUMES	2	0	0	0	0	0	0	27	3	24	27	0	83					
AM APPROACH %	100%	0%	0%	0%	0%	0%	0%	90%	10%	47%	53%	0%						
AM PEAK HR FACTOR		0.500			0.000			0.750			0.671		0.865					
AM APP/DEPART	2	/	0	0	/	27	30	/	27	51	/	29	0					
4:00 PM	3		1					4	0	4	8		20					0
4:15 PM	0		0					4	2	2	7		15					0
4:30 PM	1		0					3	1	0	9		14					0
4:45 PM	1		0					2	1	4	9		17					0
5:00 PM	2		0					4	0	3	13		22					0
5:15 PM	0		0					3	1	2	18		24					0
5:30 PM	0		0					8	0	3	14		25					0
5:45 PM	1		1					2	1	2	10		17					0
PM VOLUMES	8	0	2	0	0	0	0	30	6	20	88	0	154	0	0	0	0	0
PM APPROACH %	80%	0%	20%	0%	0%	0%	0%	83%	17%	19%	81%	0%						
PM APP/DEPART	10	/	0	0	/	26	36	/	32	108	/	96	0					
PM BEGIN PEAK HR		5:00 PM																
PM VOLUMES	3	0	1	0	0	0	0	17	2	10	55	0	88					
PM APPROACH %	75%	0%	25%	0%	0%	0%	0%	89%	11%	15%	85%	0%						
PM PEAK HR FACTOR		0.500			0.000			0.594			0.813		0.880					
PM APP/DEPART	4	/	0	0	/	12	19	/	18	65	/	58	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

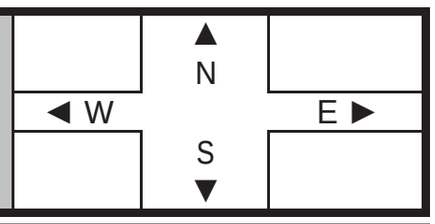
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE:				
9/3/14	LOCATION:	ESCONDIDO	PROJECT #:	PTD14-0905-02
WEDNESDAY	NORTH & SOUTH:	CENTRE CITY PKWY	LOCATION #:	3
	EAST & WEST:	BROTHERTON	CONTROL:	2-WAY STOP (EW)

NOTES:

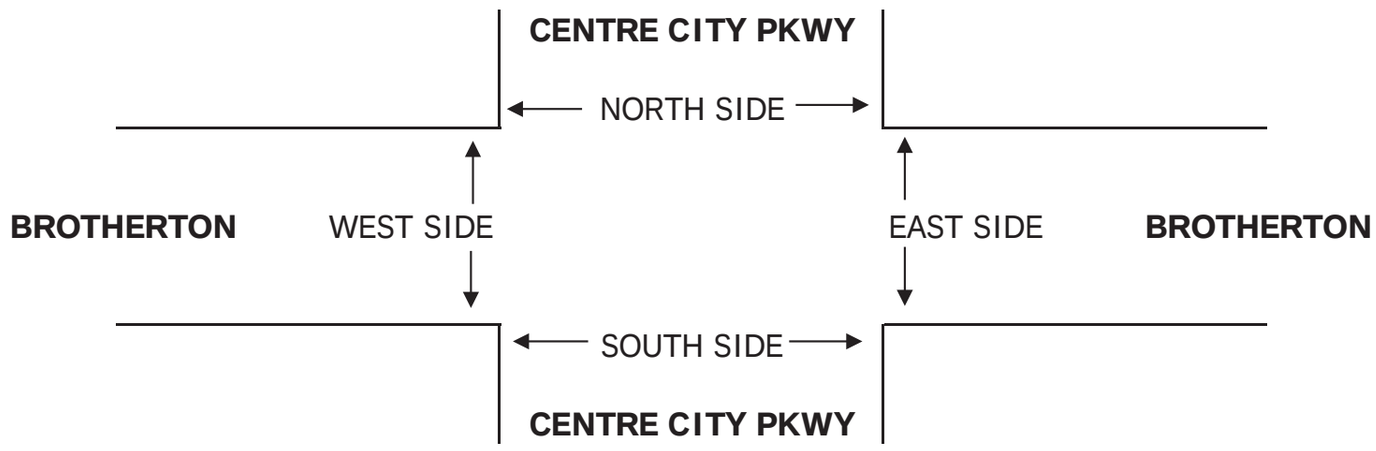
AM / PM / MD / OTHER / OTHER



	NORTHBOUND CENTRE CITY PKWY			SOUTHBOUND CENTRE CITY PKWY			EASTBOUND BROTHERTON			WESTBOUND BROTHERTON			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	X	X	1	X	X	1	

U-TURNS				
NB	SB	EB	WB	TTL
X	X	X	X	

		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	4	89	2	9	315	6			2			3	430					0
	7:15 AM	3	151	9	2	338	5			2			2	512					0
	7:30 AM	4	148	10	5	320	15			4			6	512					0
	7:45 AM	0	161	9	4	255	10			8			2	449					0
	8:00 AM	1	177	8	4	278	13			8			2	491					0
	8:15 AM	2	168	9	11	262	5			8			1	466					0
	8:30 AM	3	160	4	5	221	8			0			4	405					0
	8:45 AM	4	158	5	4	161	8			5			3	348					0
	VOLUMES	21	1,212	56	44	2,150	70	0	0	37	0	0	23	3,613	0	0	0	0	0
	APPROACH %	2%	94%	4%	2%	95%	3%	0%	0%	100%	0%	0%	100%						
	APP/DEPART	1,289	/	1,235	2,264	/	2,187	37	/	100	23	/	91	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	8	637	36	15	1,191	43	0	0	22	0	0	12	1,964					
	APPROACH %	1%	94%	5%	1%	95%	3%	0%	0%	100%	0%	0%	100%						
	PEAK HR FACTOR		0.915			0.905			0.688			0.500		0.959					
	APP/DEPART	681	/	649	1,249	/	1,213	22	/	51	12	/	51	0					
PM	4:00 PM	6	250	31	4	151	6			4			8	460					0
	4:15 PM	3	213	34	10	188	6			4			7	465					0
	4:30 PM	5	238	23	8	170	4			3			2	453					0
	4:45 PM	4	268	47	13	168	9			3			10	522					0
	5:00 PM	5	331	44	10	215	11			1			8	625					0
	5:15 PM	9	318	50	11	180	12			5			15	600					0
	5:30 PM	7	336	40	10	170	10			6			12	591					0
	5:45 PM	5	284	42	8	134	7			4			9	493					0
	VOLUMES	44	2,238	311	74	1,376	65	0	0	30	0	0	71	4,209	0	0	0	0	0
	APPROACH %	2%	86%	12%	5%	91%	4%	0%	0%	100%	0%	0%	100%						
	APP/DEPART	2,593	/	2,309	1,515	/	1,406	30	/	385	71	/	109	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	25	1,253	181	44	733	42	0	0	15	0	0	45	2,338					
	APPROACH %	2%	86%	12%	5%	89%	5%	0%	0%	100%	0%	0%	100%						
	PEAK HR FACTOR		0.952			0.868			0.625			0.750		0.935					
	APP/DEPART	1,459	/	1,298	819	/	748	15	/	225	45	/	67	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

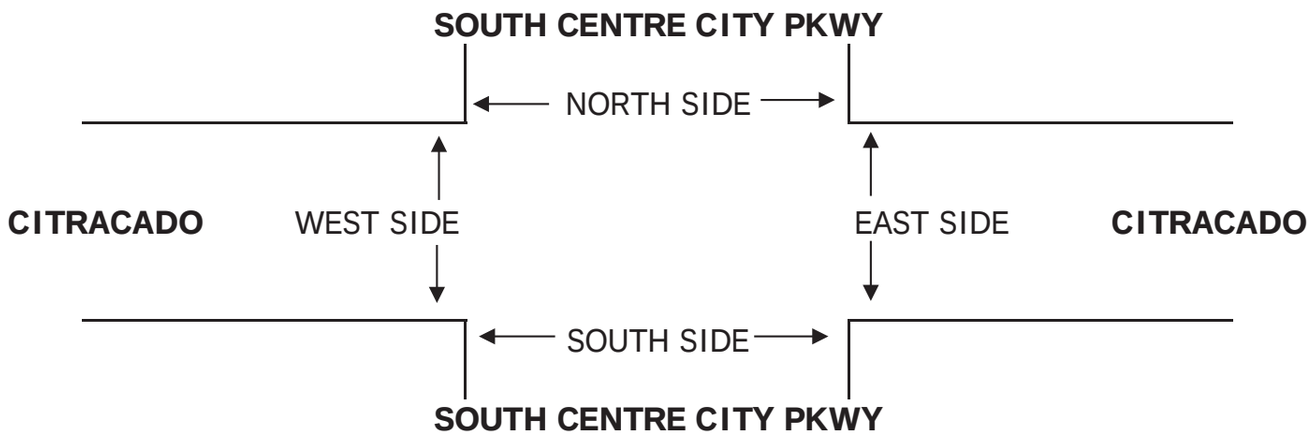
DATE:				
9/3/14	LOCATION:	ESCONDIDO	PROJECT #:	PTD14-0905-02
WEDNESDAY	NORTH & SOUTH:	SOUTH CENTRE CITY PKWY	LOCATION #:	4
	EAST & WEST:	CITRACADO	CONTROL:	2-WAY STOP (NS)

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND SOUTH CENTRE CITY PKWY			SOUTHBOUND SOUTH CENTRE CITY PKWY			EASTBOUND CITRACADO			WESTBOUND CITRACADO				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0		X	X	X	X	
AM	7:00 AM	6	0	3	4	0	2	1	18	0	1	40	2	77					0
	7:15 AM	2	0	2	5	0	3	2	17	0	1	51	2	85					0
	7:30 AM	9	0	4	4	0	4	2	21	1	2	50	5	102					0
	7:45 AM	4	1	2	7	1	3	3	29	2	5	35	3	95					0
	8:00 AM	2	0	2	7	0	2	4	19	1	3	40	4	84					0
	8:15 AM	0	0	2	7	0	0	0	18	1	2	36	0	66					0
	8:30 AM	1	0	0	5	0	0	2	23	0	1	27	4	63					0
	8:45 AM	2	0	2	3	0	1	2	15	1	2	28	2	58					0
	VOLUMES	26	1	17	42	1	15	16	160	6	17	307	22	630	0	0	0	0	0
	APPROACH %	59%	2%	39%	72%	2%	26%	9%	88%	3%	5%	89%	6%						
	APP/DEPART	44	/	39	58	/	24	182	/	219	346	/	348	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	17	1	10	23	1	12	11	86	4	11	176	14	366					
	APPROACH %	61%	4%	36%	64%	3%	33%	11%	85%	4%	5%	88%	7%						
	PEAK HR FACTOR		0.538			0.818			0.743			0.882		0.897					
	APP/DEPART	28	/	26	36	/	16	101	/	119	201	/	205	0					
PM	4:00 PM	2	1	5	4	0	0	3	48	1	1	32	3	100					0
	4:15 PM	0	0	2	6	0	0	2	41	1	3	29	1	85					0
	4:30 PM	1	0	3	4	0	1	2	39	3	2	28	1	84					0
	4:45 PM	3	0	3	5	1	2	2	47	3	1	22	4	93					0
	5:00 PM	1	0	2	11	0	2	2	52	0	4	29	2	105					0
	5:15 PM	2	1	4	7	0	2	2	50	0	1	28	1	98					0
	5:30 PM	0	1	2	8	0	2	0	49	2	5	36	4	109					0
	5:45 PM	0	0	2	7	1	2	2	36	0	1	17	2	70					0
	VOLUMES	9	3	23	52	2	11	15	362	10	18	221	18	744	0	0	0	0	0
	APPROACH %	26%	9%	66%	80%	3%	17%	4%	94%	3%	7%	86%	7%						
	APP/DEPART	35	/	36	65	/	30	387	/	437	257	/	241	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	6	2	11	31	1	8	6	198	5	11	115	11	405					
	APPROACH %	32%	11%	58%	78%	3%	20%	3%	95%	2%	8%	84%	8%						
	PEAK HR FACTOR		0.679			0.769			0.968			0.761		0.929					
	APP/DEPART	19	/	19	40	/	17	209	/	240	137	/	129	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

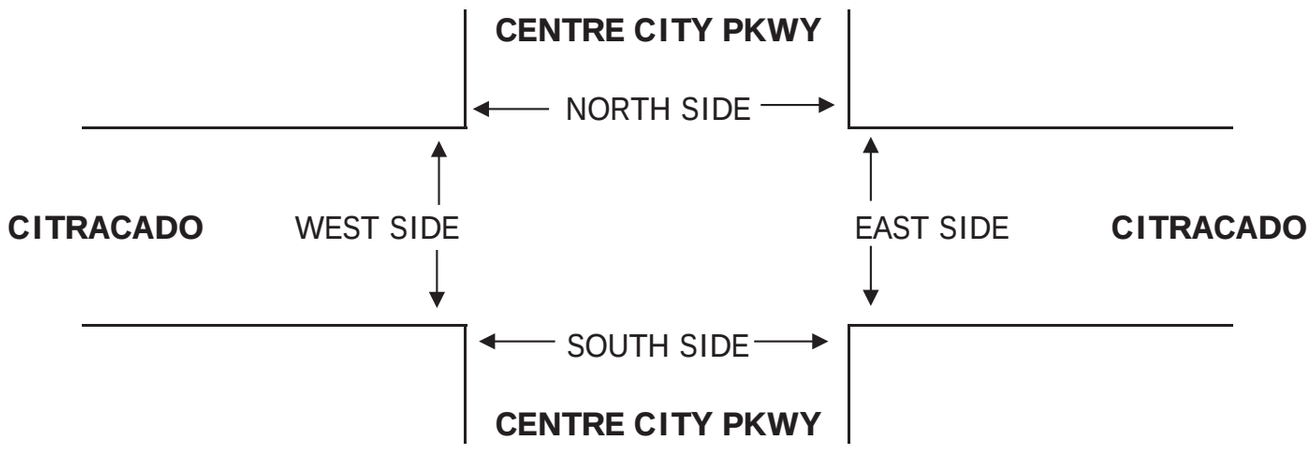
DATE:				
9/3/14	LOCATION:	ESCONDIDO	PROJECT #:	PTD14-0905-02
WEDNESDAY	NORTH & SOUTH:	CENTRE CITY PKWY	LOCATION #:	5
	EAST & WEST:	CITRACADO	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND CENTRE CITY PKWY			SOUTHBOUND CENTRE CITY PKWY			EASTBOUND CITRACADO			WESTBOUND CITRACADO				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	2	0	1	2	0	1	1	0	1	1	0		X	X	X	X	
AM	7:00 AM	5	113	5	4	335	12	9	8	6	54	28	4	583					0
	7:15 AM	8	148	5	0	294	23	7	13	5	41	21	3	568					0
	7:30 AM	7	133	9	2	290	19	17	9	4	44	31	3	568					0
	7:45 AM	4	157	6	4	246	16	20	7	11	46	23	4	544					0
	8:00 AM	5	138	9	1	258	22	19	8	3	55	18	3	539		1			1
	8:15 AM	5	145	7	2	269	18	16	6	4	37	17	2	528					0
	8:30 AM	4	157	5	1	206	10	14	11	2	31	15	5	461					0
	8:45 AM	4	156	5	5	137	16	12	6	3	33	13	2	392					0
	VOLUMES	42	1,147	51	19	2,035	136	114	68	38	341	166	26	4,183	0	1	0	0	1
	APPROACH %	3%	93%	4%	1%	93%	6%	52%	31%	17%	64%	31%	5%						
	APP/DEPART	1,240	/	1,287	2,190	/	2,414	220	/	138	533	/	344	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	24	551	25	10	1,165	70	53	37	26	185	103	14	2,263					
	APPROACH %	4%	92%	4%	1%	94%	6%	46%	32%	22%	61%	34%	5%						
	PEAK HR FACTOR		0.898			0.887			0.763			0.878		0.970					
	APP/DEPART	600	/	618	1,245	/	1,376	116	/	72	302	/	197	0					
PM	4:00 PM	3	257	9	6	133	8	28	28	3	27	24	5	531					0
	4:15 PM	3	213	6	10	161	14	25	20	3	29	16	6	506					0
	4:30 PM	1	216	14	6	179	15	23	20	5	29	15	5	528		1			1
	4:45 PM	6	287	16	4	143	12	22	25	6	27	9	2	559					0
	5:00 PM	9	340	23	8	178	15	38	17	11	20	11	9	679	1				1
	5:15 PM	6	328	33	9	152	13	22	30	8	22	13	5	641	1				1
	5:30 PM	11	358	22	3	159	16	34	20	6	25	18	0	672	1	1			2
	5:45 PM	3	322	33	8	121	5	15	24	3	23	13	7	577		1			1
	VOLUMES	42	2,321	156	54	1,226	98	207	184	45	202	119	39	4,693	3	3	0	0	6
	APPROACH %	2%	92%	6%	4%	89%	7%	47%	42%	10%	56%	33%	11%						
	APP/DEPART	2,519	/	2,567	1,378	/	1,473	436	/	394	360	/	259	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	29	1,348	111	28	610	49	109	91	28	90	55	21	2,569					
	APPROACH %	2%	91%	7%	4%	89%	7%	48%	40%	12%	54%	33%	13%						
	PEAK HR FACTOR		0.951			0.854			0.864			0.965		0.946					
	APP/DEPART	1,488	/	1,478	687	/	728	228	/	230	166	/	133	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

S. CENTRE CITY PKWY BTN BROTHERTON & CITRACADO

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	0		0				
00:15	0		0					12:15	0		0				
00:30	0		0					12:30	0		1				
00:45	0	0	0	0				12:45	3	3	2	3			6
01:00	0		0					13:00	1		0				
01:15	0		0					13:15	0		1				
01:30	0		0					13:30	1		1				
01:45	0	0	0	0				13:45	1	3	1	3			6
02:00	0		0					14:00	1		4				
02:15	0		0					14:15	2		0				
02:30	0		0					14:30	2		1				
02:45	0	0	0	0				14:45	2	7	5	10			17
03:00	0		0					15:00	0		1				
03:15	0		0					15:15	0		1				
03:30	0		0					15:30	3		1				
03:45	0	0	0	0				15:45	0	3	3	6			9
04:00	0		0					16:00	4		4				
04:15	0		0					16:15	0		4				
04:30	0		0					16:30	1		1				
04:45	0	0	0	0				16:45	1	6	6	15			21
05:00	0		0					17:00	3		2				
05:15	0		1					17:15	0		2				
05:30	1		0					17:30	0		4				
05:45	0	1	0	1			2	17:45	2	5	3	11			16
06:00	1		1					18:00	0		1				
06:15	0		0					18:15	1		2				
06:30	0		3					18:30	0		1				
06:45	1	2	8	12			14	18:45	1	2	4	8			10
07:00	0		3					19:00	0		3				
07:15	0		4					19:15	0		3				
07:30	1		5					19:30	0		0				
07:45	1	2	6	18			20	19:45	0	0	0	6			6
08:00	0		11					20:00	1		0				
08:15	0		5					20:15	5		1				
08:30	1		4					20:30	1		1				
08:45	0	1	8	28			29	20:45	0	7	0	2			9
09:00	0		5					21:00	0		0				
09:15	0		2					21:15	0		1				
09:30	2		1					21:30	1		0				
09:45	1	3	4	12			15	21:45	0	1	0	1			2
10:00	1		1					22:00	0		0				
10:15	0		2					22:15	0		0				
10:30	0		2					22:30	0		0				
10:45	1	2	2	7			9	22:45	0	0	0	0			
11:00	0		2					23:00	0		0				
11:15	3		2					23:15	1		1				
11:30	0		5					23:30	0		0				
11:45	1	4	3	12			16	23:45	0	1	0	1			2
Total Vol.		15		90			**105**			38		66			**104**

Daily Totals

NB	SB	EB	WB	**Combined**
53	156			**209**

	AM			**PM**		
Split %	14.3%	85.7%	**50.2%**	36.5%	63.5%	**49.8%**
Peak Hour	09:15	08:00	**07:30**	14:00	16:00	**16:00**
Volume	4	28	**29**	7	15	**21**
P.H.F.	0.50	0.64	**0.66**	0.88	0.63	**0.66**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

CENTRE CITY PKWY N-O BROTHERTON

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	18		10					12:00	188		151				
00:15	26		9					12:15	170		161				
00:30	20		5					12:30	161		152				
00:45	15	79	5	29			108	12:45	184	703	144	608			1311
01:00	13		3					13:00	175		128				
01:15	14		2					13:15	141		168				
01:30	10		4					13:30	162		154				
01:45	12	49	8	17			66	13:45	195	673	162	612			1285
02:00	7		4					14:00	184		155				
02:15	8		4					14:15	190		160				
02:30	9		1					14:30	212		152				
02:45	10	34	4	13			47	14:45	241	827	177	644			1471
03:00	5		5					15:00	252		162				
03:15	4		4					15:15	268		148				
03:30	3		10					15:30	284		177				
03:45	4	16	8	27			43	15:45	312	1116	178	665			1781
04:00	2		12					16:00	262		178				
04:15	8		13					16:15	235		212				
04:30	10		41					16:30	248		180				
04:45	18	38	50	116			154	16:45	295	1040	179	749			1789
05:00	20		55					17:00	332		242				
05:15	19		101					17:15	342		213				
05:30	20		122					17:30	352		188				
05:45	35	94	161	439			533	17:45	280	1306	156	799			2105
06:00	44		175					18:00	300		151				
06:15	51		230					18:15	305		142				
06:30	60		298					18:30	278		132				
06:45	89	244	357	1060			1304	18:45	277	1160	121	546			1706
07:00	90		326					19:00	212		101				
07:15	161		355					19:15	180		90				
07:30	155		362					19:30	141		84				
07:45	172	578	251	1294			1872	19:45	132	665	99	374			1039
08:00	188		288					20:00	128		91				
08:15	152		275					20:15	122		75				
08:30	166		235					20:30	101		84				
08:45	148	654	184	982			1636	20:45	111	462	66	316			778
09:00	151		158					21:00	90		66				
09:15	121		161					21:15	88		50				
09:30	123		141					21:30	91		41				
09:45	162	557	158	618			1175	21:45	70	339	32	189			528
10:00	135		131					22:00	95		33				
10:15	128		135					22:15	88		41				
10:30	121		139					22:30	40		30				
10:45	118	502	128	533			1035	22:45	38	261	28	132			393
11:00	135		127					23:00	41		20				
11:15	144		141					23:15	33		19				
11:30	128		152					23:30	31		20				
11:45	151	558	131	551			1109	23:45	20	125	11	70			195
Total Vol.		3403		5679			**9082**			8677		5704			**14381**

Daily Totals

NB	SB	EB	WB	**Combined**
12080	11383			**23463**

	AM			**PM**		
Split %	37.5%	62.5%	**38.7%**	60.3%	39.7%	**61.3%**
Peak Hour	07:45	06:45	**07:15**	16:45	16:45	**16:45**
Volume	678	1400	**1932**	1321	822	**2143**
P.H.F.	0.90	0.97	**0.93**	0.96	0.85	**0.93**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

CENTRE CITY PKWY BTN BROTHERTON & CITRACADO

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	29		11					12:00	173		140				
00:15	23		8					12:15	190		153				
00:30	19		3					12:30	174		146				
00:45	15	86	7	29			115	12:45	195	732	146	585			1317
01:00	17		4					13:00	171		135				
01:15	13		4					13:15	165		152				
01:30	8		8					13:30	169		157				
01:45	18	56	9	25			81	13:45	205	710	160	604			1314
02:00	8		6					14:00	206		146				
02:15	11		6					14:15	199		158				
02:30	10		2					14:30	232		187				
02:45	7	36	6	20			56	14:45	265	902	150	641			1543
03:00	4		6					15:00	286		148				
03:15	4		5					15:15	297		161				
03:30	6		15					15:30	280		185				
03:45	5	19	14	40			59	15:45	331	1194	166	660			1854
04:00	3		10					16:00	294		151				
04:15	12		18					16:15	253		195				
04:30	13		49					16:30	248		216				
04:45	14	42	55	132			174	16:45	315	1110	161	723			1833
05:00	16		69					17:00	386		184				
05:15	18		103					17:15	362		177				
05:30	16		136					17:30	395		182				
05:45	42	92	170	478			570	17:45	341	1484	142	685			2169
06:00	40		175					18:00	318		148				
06:15	49		230					18:15	310		132				
06:30	66		298					18:30	298		129				
06:45	96	251	357	1060			1311	18:45	278	1204	114	523			1727
07:00	131		341					19:00	189		106				
07:15	148		321					19:15	195		103				
07:30	156		315					19:30	133		120				
07:45	177	612	252	1229			1841	19:45	146	663	103	432			1095
08:00	172		295					20:00	149		76				
08:15	168		298					20:15	137		82				
08:30	184		221					20:30	116		79				
08:45	164	688	162	976			1664	20:45	105	507	71	308			815
09:00	149		156					21:00	113		65				
09:15	135		156					21:15	89		76				
09:30	127		159					21:30	107		55				
09:45	148	559	168	639			1198	21:45	83	392	37	233			625
10:00	144		142					22:00	92		42				
10:15	135		149					22:15	59		48				
10:30	132		139					22:30	58		31				
10:45	134	545	143	573			1118	22:45	62	271	20	141			412
11:00	148		143					23:00	48		29				
11:30	142		134					23:30	24		14				
11:45	161	594	138	561			1155	23:45	37	157	12	77			234
Total Vol.		3580		5762			**9342**			9326		5612			**14938**

Daily Totals

NB	SB	EB	WB	**Combined**
12906	11374			**24280**

	AM			**PM**		
Split %	38.3%	61.7%	**38.5%**	62.4%	37.6%	**61.5%**
Peak Hour	07:45	06:45	**06:45**	17:00	16:15	**17:00**
Volume	701	1334	**1865**	1484	756	**2169**
P.H.F.	0.95	0.93	**0.99**	0.97	0.88	**0.94**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

CENTRE CITY PKWY S-O CITRACADO

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	32		8					12:00	166		136				
00:15	21		8					12:15	170		149				
00:30	22		4					12:30	173		146				
00:45	9	84	6	26			110	12:45	172	681	150	581			1262
01:00	14		5					13:00	148		137				
01:15	13		4					13:15	158		145				
01:30	9		9					13:30	162		163				
01:45	14	50	9	27			77	13:45	187	655	160	605			1260
02:00	8		4					14:00	204		144				
02:15	10		4					14:15	187		163				
02:30	11		2					14:30	226		190				
02:45	6	35	4	14			49	14:45	258	875	158	655			1530
03:00	6		6					15:00	277		150				
03:15	3		5					15:15	288		170				
03:30	6		14					15:30	285		188				
03:45	4	19	18	43			62	15:45	315	1165	161	669			1834
04:00	5		10					16:00	270		177				
04:15	11		20					16:15	231		181				
04:30	13		50					16:30	233		215				
04:45	13	42	53	133			175	16:45	315	1049	188	761			1810
05:00	20		72					17:00	362		221				
05:15	15		96					17:15	370		168				
05:30	25		143					17:30	384		212				
05:45	40	100	175	486			586	17:45	341	1457	158	759			2216
06:00	36		184					18:00	336		167				
06:15	44		242					18:15	313		139				
06:30	67		319					18:30	286		132				
06:45	90	237	410	1155			1392	18:45	262	1197	122	560			1757
07:00	128		384					19:00	187		104				
07:15	168		362					19:15	186		112				
07:30	151		342					19:30	126		119				
07:45	160	607	313	1401			2008	19:45	140	639	110	445			1084
08:00	142		312					20:00	145		83				
08:15	168		303					20:15	123		85				
08:30	162		231					20:30	114		75				
08:45	170	642	189	1035			1677	20:45	94	476	75	318			794
09:00	132		152					21:00	115		60				
09:15	122		162					21:15	97		80				
09:30	124		172					21:30	94		59				
09:45	139	517	175	661			1178	21:45	76	382	44	243			625
10:00	117		153					22:00	94		49				
10:15	133		170					22:15	63		62				
10:30	122		145					22:30	61		32				
10:45	110	482	152	620			1102	22:45	64	282	23	166			448
11:00	126		137					23:00	50		28				
11:30	132		132					23:30	27		13				
11:45	149	533	146	574			1107	23:45	35	155	16	80			235
Total Vol.		3348		6175			**9523**			9013		5842			**14855**

Daily Totals

NB	SB	EB	WB	**Combined**
12361	12017			**24378**

	AM			**PM**		
Split %	35.2%	64.8%	**39.1%**	60.7%	39.3%	**60.9%**
Peak Hour	11:45	06:45	**06:45**	17:00	16:15	**16:45**
Volume	658	1498	**2035**	1457	805	**2220**
P.H.F.	0.95	0.91	**0.96**	0.98	0.91	**0.93**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

BROTHERTON BTN CHARISE & S. CENTRE CITY PKWY

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		1			12:00			1		5		
00:15			0		2			12:15			2		4		
00:30			0		3			12:30			1		4		
00:45			0	0	0	6	6	12:45			2	6	6	19	25
01:00			1		0			13:00			4		9		
01:15			0		0			13:15			7		8		
01:30			0		0			13:30			8		10		
01:45			0	1	0	0	1	13:45			2	21	10	37	58
02:00			0		0			14:00			2		11		
02:15			0		0			14:15			5		8		
02:30			0		0			14:30			3		9		
02:45			0	0	0	0		14:45			1	11	5	33	44
03:00			0		0			15:00			4		13		
03:15			0		0			15:15			1		7		
03:30			0		0			15:30			1		8		
03:45			1	1	0	0	1	15:45			2	8	9	37	45
04:00			1		0			16:00			5		12		
04:15			1		0			16:15			6		8		
04:30			3		0			16:30			4		10		
04:45			4	9	0	0	9	16:45			3	18	11	41	59
05:00			1		0			17:00			4		14		
05:15			3		2			17:15			4		17		
05:30			3		2			17:30			9		15		
05:45			4	11	4	8	19	17:45			2	19	11	57	76
06:00			2		5			18:00			3		8		
06:15			5		1			18:15			3		13		
06:30			5		3			18:30			3		12		
06:45			6	18	4	13	31	18:45			2	11	9	42	53
07:00			4		8			19:00			0		13		
07:15			6		8			19:15			2		8		
07:30			3		13			19:30			1		4		
07:45			8	21	5	34	55	19:45			2	5	9	34	39
08:00			11		7			20:00			3		13		
08:15			8		4			20:15			2		10		
08:30			0		7			20:30			5		3		
08:45			8	27	8	26	53	20:45			0	10	4	30	40
09:00			5		4			21:00			3		5		
09:15			2		7			21:15			0		8		
09:30			1		7			21:30			1		3		
09:45			5	13	2	20	33	21:45			1	5	5	21	26
10:00			2		3			22:00			2		1		
10:15			4		5			22:15			0		2		
10:30			0		7			22:30			0		2		
10:45			2	8	2	17	25	22:45			0	2	4	9	11
11:00			2		8			23:00			2		2		
11:15			5		14			23:15			0		0		
11:30			4		4			23:30			0		4		
11:45			2	13	6	32	45	23:45			1	3	1	7	10
Total Vol.				122		156	**278**					119		367	**486**

Daily Totals

NB	SB	EB	WB	Combined
		241	523	**764**

	AM			PM		
Split %	43.9%	56.1%	**36.4%**	24.5%	75.5%	**63.6%**
Peak Hour	07:30	07:00	**07:15**	12:45	16:45	**16:45**
Volume	30	34	**61**	21	57	**77**
P.H.F.	0.68	0.65	**0.85**	0.66	0.84	**0.80**

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

F. BROTHERTON BTN S. CENTRE CITY PKWY & CENTRE CITY

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		1			12:00			1		5		
00:15			0		2			12:15			5		4		
00:30			0		3			12:30			9		3		
00:45			0	0	0	6	6	12:45			5	20	8	20	40
01:00			1		0			13:00			7		13		
01:15			0		0			13:15			9		8		
01:30			0		0			13:30			5		8		
01:45			0	1	0	0	1	13:45			2	23	9	38	61
02:00			0		0			14:00			2		13		
02:15			0		0			14:15			5		9		
02:30			0		0			14:30			3		7		
02:45			0	0	0	0		14:45			1	11	5	34	45
03:00			0		0			15:00			8		13		
03:15			0		0			15:15			3		8		
03:30			0		0			15:30			2		8		
03:45			1	1	0	0	1	15:45			5	18	6	35	53
04:00			1		0			16:00			5		12		
04:15			2		0			16:15			4		9		
04:30			4		0			16:30			4		8		
04:45			3	10	0	0	10	16:45			2	15	11	40	55
05:00			1		0			17:00			4		18		
05:15			3		2			17:15			4		20		
05:30			2		1			17:30			8		15		
05:45			4	10	4	7	17	17:45			2	18	12	65	83
06:00			0		4			18:00			2		9		
06:15			5		1			18:15			3		13		
06:30			10		4			18:30			9		12		
06:45			7	22	7	16	38	18:45			1	15	9	43	58
07:00			2		9			19:00			1		13		
07:15			2		8			19:15			2		9		
07:30			4		18			19:30			1		3		
07:45			7	15	11	46	61	19:45			4	8	9	34	42
08:00			8		15			20:00			5		12		
08:15			8		8			20:15			1		9		
08:30			0		10			20:30			5		3		
08:45			5	21	12	45	66	20:45			0	11	4	28	39
09:00			7		7			21:00			3		4		
09:15			0		7			21:15			0		7		
09:30			3		5			21:30			1		3		
09:45			5	15	5	24	39	21:45			0	4	4	18	22
10:00			2		3			22:00			1		1		
10:15			5		6			22:15			0		2		
10:30			4		8			22:30			0		2		
10:45			3	14	2	19	33	22:45			0	1	4	9	10
11:00			2		8			23:00			1		2		
11:15			8		11			23:15			0		0		
11:30			5		4			23:30			0		4		
11:45			5	20	7	30	50	23:45			0	1	1	7	8
Total Vol.				129		193	**322**					145		371	**516**

Daily Totals

NB	SB	EB	WB	Combined
		274	564	**838**

	AM			PM		
Split %	40.1%	59.9%	**38.4%**	28.1%	71.9%	**61.6%**
Peak Hour	07:30	07:15	**07:30**	12:30	17:00	**17:00**
Volume	27	52	**79**	30	65	**83**
P.H.F.	0.84	0.72	**0.86**	0.83	0.81	**0.86**

PACIFIC TECHNICAL DATA

WEDNESDAY, SEPTEMBER 3RD, 2014 CITY: ESCONDIDO PROJECT: PTD14-0905-02

CITRACADO BTN S. CENTRE CITY PKWY & CENTRE CITY

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			3		11			12:00			45		36		
00:15			2		0			12:15			51		57		
00:30			4		1			12:30			52		48		
00:45			2	11	4	16	27	12:45			40	188	31	172	360
01:00			3		1			13:00			46		45		
01:15			1		3			13:15			49		42		
01:30			1		1			13:30			53		43		
01:45			1	6	1	6	12	13:45			41	189	55	185	374
02:00			0		0			14:00			30		40		
02:15			1		1			14:15			32		45		
02:30			0		0			14:30			44		52		
02:45			2	3	4	5	8	14:45			50	156	49	186	342
03:00			0		1			15:00			45		48		
03:15			2		2			15:15			50		35		
03:30			0		3			15:30			48		35		
03:45			1	3	0	6	9	15:45			64	207	67	185	392
04:00			0		3			16:00			59		38		
04:15			0		2			16:15			48		31		
04:30			1		4			16:30			38		30		
04:45			7	8	11	20	28	16:45			50	195	28	127	322
05:00			1		4			17:00			60		33		
05:15			8		5			17:15			66		31		
05:30			9		13			17:30			65		48		
05:45			9	27	24	46	73	17:45			42	233	27	139	372
06:00			11		16			18:00			47		38		
06:15			14		22			18:15			66		31		
06:30			18		30			18:30			46		30		
06:45			19	62	40	108	170	18:45			25	184	37	136	320
07:00			31		51			19:00			26		32		
07:15			25		55			19:15			25		23		
07:30			26		60			19:30			38		26		
07:45			38	120	41	207	327	19:45			25	114	17	98	212
08:00			25		44			20:00			28		20		
08:15			33		39			20:15			30		30		
08:30			26		33			20:30			17		21		
08:45			21	105	31	147	252	20:45			21	96	16	87	183
09:00			18		35			21:00			18		32		
09:15			20		26			21:15			20		21		
09:30			15		40			21:30			16		11		
09:45			19	72	30	131	203	21:45			11	65	9	73	138
10:00			22		34			22:00			13		12		
10:15			35		32			22:15			6		5		
10:30			32		27			22:30			11		9		
10:45			28	117	41	134	251	22:45			6	36	6	32	68
11:00			23		38			23:00			4		7		
11:15			29		46			23:15			2		2		
11:30			42		37			23:30			8		6		
11:45			24	118	42	163	281	23:45			0	14	5	20	34
Total Vol.				652		989	**1641**					1677		1440	**3117**

Daily Totals

NB	SB	EB	WB	Combined
		2329	2429	**4758**

	AM			PM		
Split %	39.7%	60.3%	**34.5%**	53.8%	46.2%	**65.5%**
Peak Hour	11:45	07:00	**11:45**	16:45	14:15	**15:15**
Volume	172	207	**355**	241	194	**396**
P.H.F.	0.83	0.86	**0.82**	0.91	0.93	**0.76**

PACIFIC TECHNICAL DATA

APPENDIX C

TRIP GENERATION

Land Use	Intensity	Unit	Daily Rate	Daily Trips		AM Peak Hour			PM Peak Hour		
						Total	In	Out	Total	In	Out
Condominium (6-20 DU/AC)	113	DU	8 trips Per DU	904	Rate	0.08	20%	80%	0.1	70%	30%
					Trips	72	14	58	90	63	27

Source (Trip Rate): SANDAG (not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002).
Note: Numbers may not total due to rounding.

APPENDIX D

CUMULATIVE PROJECT INFORMATION

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following is a discussion of the Project trip generation calculations and the Project traffic distribution and assignment through the local network.

7.1 Trip Generation

The Project proposes to develop21 single-family estate style homes on an 11.2-acre property.

The Project traffic generation calculations were conducted using the trip generation rates published in the SANDAG's *"Not so Brief Guide of Vehicular Traffic Generation Rates for San Diego Region" (April 2002).* Based on the type and density of homes proposed by the Project, SANDAG specifies a trip rate of 12.0/ unit.

Table 7–1 shows a summary of the Project traffic generation. As tabulated the Project is calculated to generate 250 daily trips with 20 trips (6 inbound/14 outbound) in AM peak hour and 25 trips (18 inbound/7 outbound) during PM peak hour.

TABLE 7–1
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour				PM Peak Hour			
		Rate [a]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
Residential - Estate	21 DU	12.0 / DU	250	8%	30:70	6	14	10%	70:30	18	7

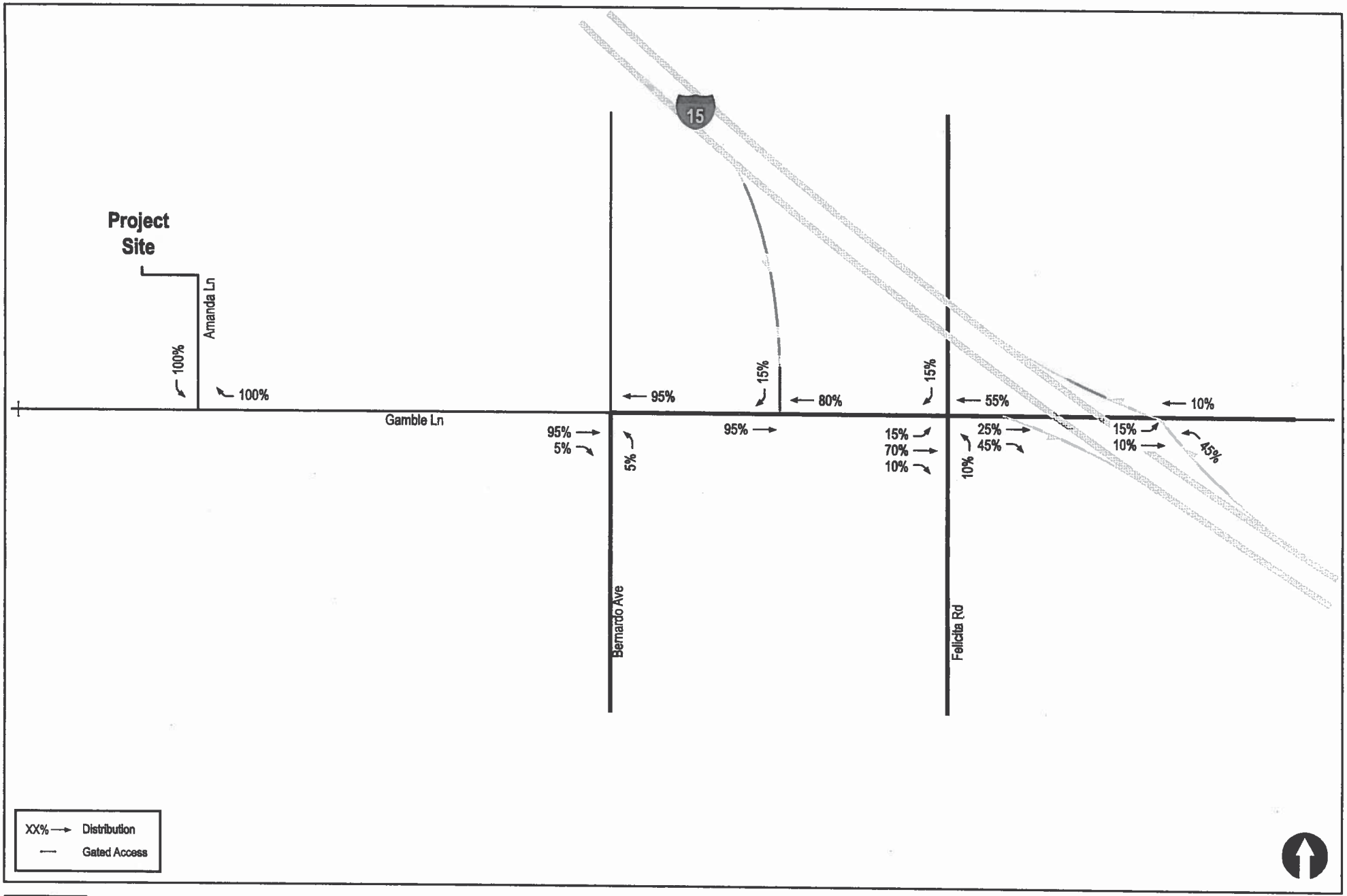
Footnotes:

a. Rate is based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

7.2 Trip Distribution/Assignment

The Project traffic was distributed to the local street system based on the roadway network, the location of employment centers, commercial areas, local schools, and existing peak hour traffic volumes.

Figure 7–1 shows the Project trip distribution percentages. ***Figure 7–2*** shows the AM/PM peak hour Project traffic volumes. ***Figure 7–3*** shows Existing + Project traffic volumes.



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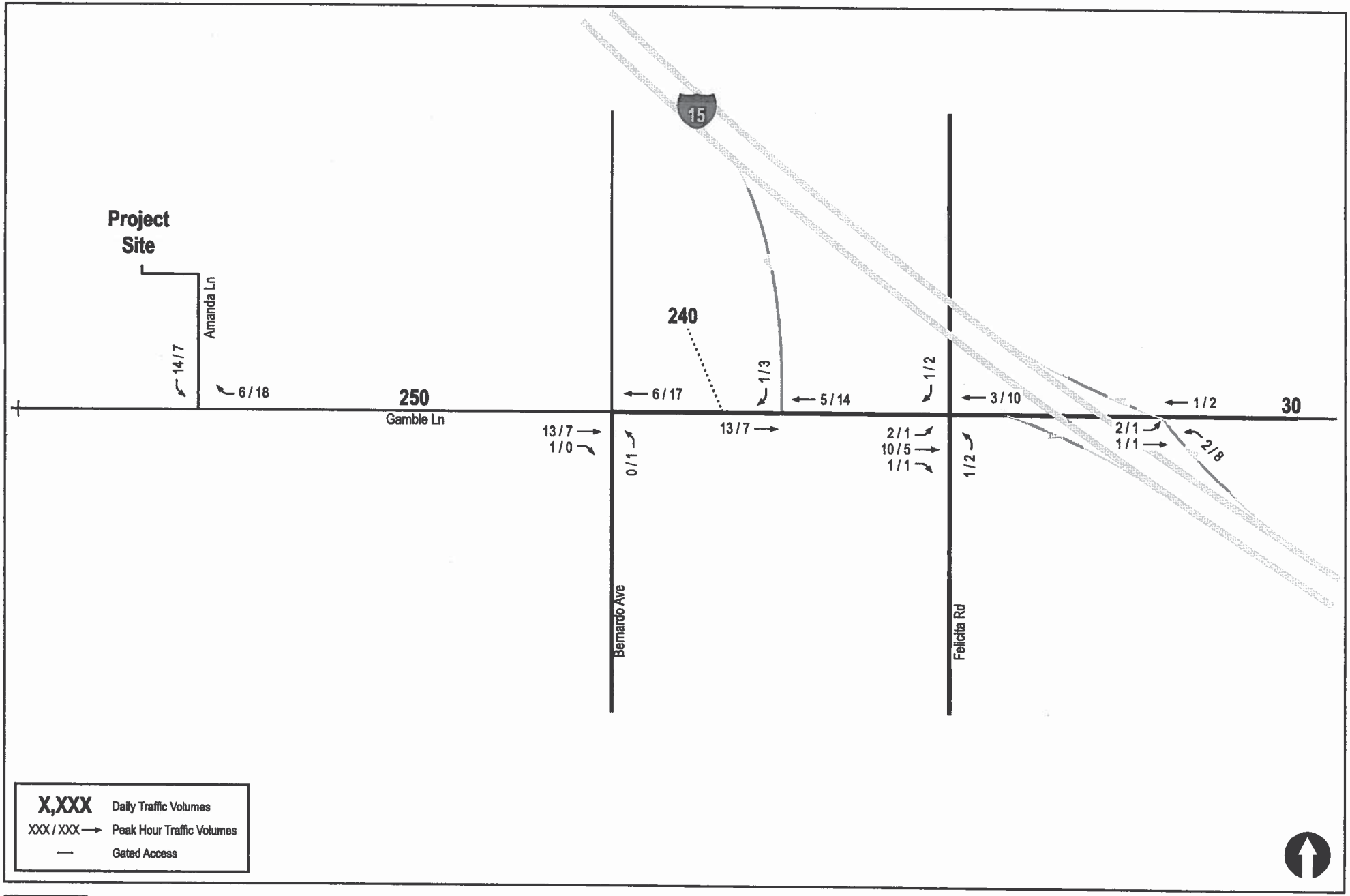
Date: 6/21/13

LINSCOTT LAW & GREENSPAN engineers

Figure 7-1

Project Traffic Distribution

AMANDA LANE PROJECT



LINSCOTT LAW & GREENSPAN engineers

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Date: 6/21/13

Figure 7-2

Project Traffic Volumes

AMANDA LANE PROJECT

LINSCOTT LAW & GREENSPAN engineers

TABLE 4
PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Daily Trip Ends (ADT)		AM Peak Hour					PM Peak Hour				
		Rate	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Proposed Project													
Car Wash	1 Site	900 / Site	900	4%	5:5	18	18	36	9%	5:5	41	40	81
Oil Change	2 Stall	40 /Stall	80	7%	6:4	3	3	6	11%	5:5	5	4	9
Restaurant	4,156 SF	160 /KSF	665	8%	5:5	27	26	53	8%	6:4	27	22	53
Total Trips			**1,645**			**48**	**47**	**95**			**73**	**66**	**139**
Pass By													
Restaurant (Daily and AM: 10% and PM Peak hour: 20%)			66			3	3	6			5	4	9
Subtotal Primary Trips			**1,579**			**45**	**44**	**89**			**68**	**62**	**130**
Fast Food Alternative													
Fast Food Restaurant	6,000 SF	700 /KSF	4,200	5%	6:4	105	105	210	7%	5:5	147	147	294
Pass By													
Restaurant (Daily and AM: 20% and PM Peak hour: 40%)			(-) 840			(-) 21	(-) 21	(-) 42			(-) 59	(-) 59	(-) 118
Subtotal Primary Trips			**3,360**			**84**	**84**	**168**			**88**	**88**	**176**
Difference			**1,781**			**39**	**40**	**79**			**20**	**26**	**46**

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following is a discussion of the project trip generation calculations and the project traffic distribution and assignment through the local network.

7.1 Trip Generation

The project proposes to develop 65 single-family estate style homes on an 41.4-acre property. Homes will be constructed to City of Escondido R-E-40 (Residential Estates- 40,000 SF minimum lot size) and R-E-20 (Residential Estates- 20,000 SF minimum lot size) zoning standards.

The project traffic generation calculations were conducted using the trip generation rates published in the SANDAG's *"Not so Brief Guide of Vehicular Traffic Generation Rates for San Diego Region" (April 2002).* Based on the type and density of homes proposed by the project, SANDAG specifies a trip rate of 12.0/ unit.

Table 7–1 shows a summary of the project traffic generation. As tabulated the proposed project is calculated to generate 780 daily trips with 62 trips (19 inbound/43 outbound) in AM peak hour and 78 trips (55 inbound/23 outbound) during PM peak hour.

TABLE 7–1
PROJECT TRIP GENERATION

Land Use	Size [a]	Daily Trip Ends (ADTs)		AM Peak Hour				PM Peak Hour			
		Rate [b]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
Residential - Estate	65 DU	12.0 /DU	780	8%	30:70	19	43	10%	70:30	55	23

Footnotes:

a. The project as currently proposed is 65 units. The capacity analyses in this report are based on the original proposal of 66 units, and are therefore conservative.

b. Rate is based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

7.2 Trip Distribution/Assignment

The Project traffic was distributed to the local street system based on the roadway network, employment centers, commercial areas, local schools and traffic circulation. Existing peak hour traffic volumes and travel patterns in the immediate vicinity of the project site were utilized to estimate the Project's driveway distribution, as were travel time study results based on travel from the site to the two I-15 interchanges (Gamble Lane/Citracado Parkway to the north and Via Rancho Parkway to the south).

Based on the site location and possible access to I-15, the majority of commuter trips destined to the south were assigned to the Gamble Lane/Citracado Parkway interchange located north of the site with the remaining trips assigned to the Via Rancho Parkway interchange. This route is geographically out-of-direction for southbound trips; however existing congestion and commuter patterns (corroborated with field reviews and travel time studies LLG) indicate that this is a reasonable and likely scenario. LLG observed that trips from the site to I-15 SB via Gamble Lane/Citracado Parkway could save up to 1.5 minutes of travel time as opposed using Via Rancho parkway. Some trips were also assigned locally to Hamilton Lane and Citracado Parkway.

Figure 7–1 shows the project trip distribution percentages. ***Figure 7–2*** shows the AM/PM peak hour project traffic volumes. ***Figure 7–3*** shows existing + project traffic volumes.

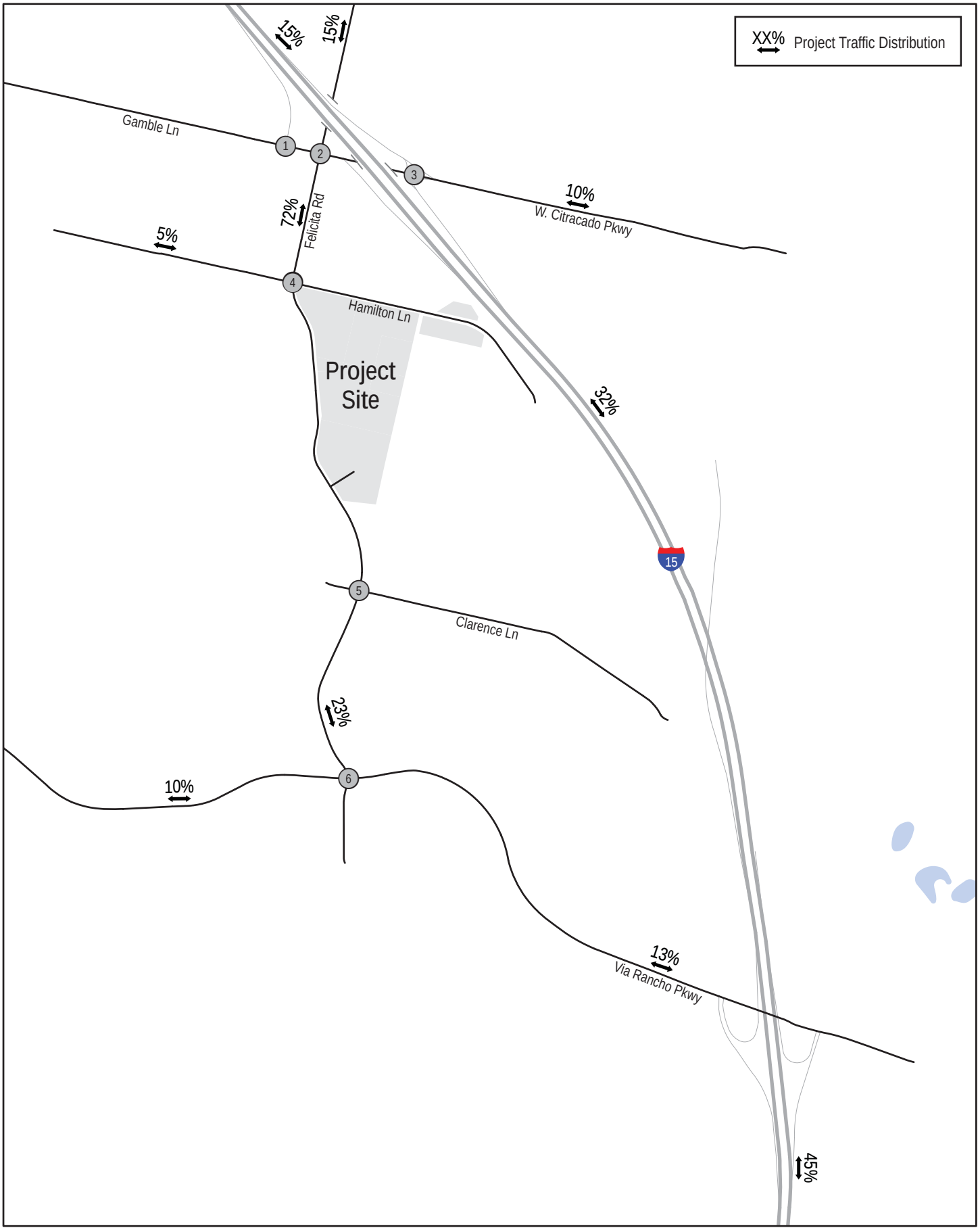

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Figure 7-1

Project Traffic Distribution

OAK CREEK

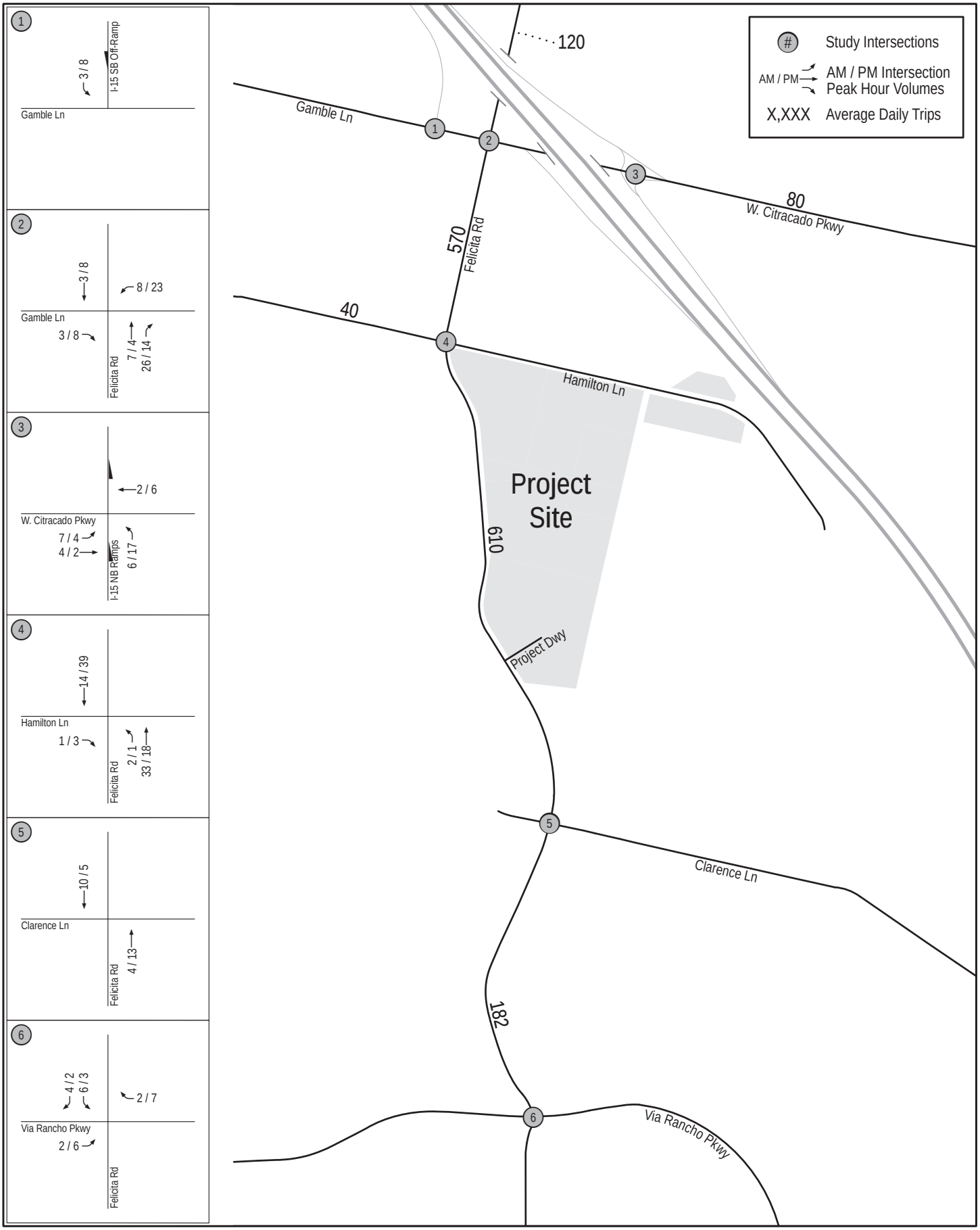

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Figure 7-2

Project Traffic Volumes

OAK CREEK

Center City Development Trip Generation

Trip Generation Rates							
		AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
Land Use	Daily Trip Rate	Total - % of Daily	% In	% Out	Total - % of Daily	% In	% Out
Multi-Family Apartments	8 Trips/DU	8%	20%	80%	10%	70%	30%

Trip Generation								
			AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
Land Use	Total # of Units	Daily Trips	Total	In	Out	Total	In	Out
Multi-Family Apartments	76	608	49	10	39	61	43	18

Source (Trip Rate): SANDAG (not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002).
Note: Numbers may not total due to rounding.

SUPPLEMENT TO STAFF REPORT/DETAILS OF REQUEST

A. PHYSICAL CHARACTERISTICS

The 2.53-acre site consists of two vacant parcels and is characterized by flat disturbed area that contains an intermittent drainage swale that traverses the property in a northwest to southeast direction. There are two upland vegetation communities and one riparian community within the project area boundaries including ruderal/non-native grassland, ornamental, and southern willow scrub. The site contains mature trees including coast live oak and western sycamore. The project site fronts onto and takes access from Escondido Boulevard, which is classified as a Local Collector Road (66' R-O-W). Escondido Boulevard has not been improved to its ultimate width across the project frontage, and the project would provide curb, gutter and sidewalk to connect to existing improvements to the north and south of the project site. Overhead utility lines are located across the western boundary of the property. A paved pedestrian path previously was installed along the Escondido Boulevard frontage.

B. SUPPLEMENTAL DETAILS OF REQUEST

1. **Property Size:** 2.53 acres gross (2 parcels) 2.50 acres net (roadway dedication along SEB)

2. **Proposed Lots:** 1 Lot (air-space condominium units)

3. **Number of Units:** 76 total units

4. **Density:** 30.4 du/ac (76 units / 2.50 net acres)

5. **Site Data:**

Total Bldg. SF	110,411 SF	1.01 Floor Area Ratio (FAR)
Total Lot Coverage	39,626 SF	0.36%

6. **Building Data:**

No. of Bldgs.:

4 residential bldgs.

Bldg. 1:	32,889 SF	24 units
Bldg. 2:	32,889 SF	24 units
Bldg. 3:	21,073 SF	14 units
Bldg. 4:	21,070 SF	14 units

1 recreation/office

Leasing:	1,796 SF
Club Room:	1,083 SF
Fitness:	871 SF
Cabana:	694 SF

Height: 3 stories with pitched roofs ranging from approx. 36' up to 39'-1" with tower elements up to 42'-3"

Unit Mix:

Plan	# Units	Total SF	Condo Ord. Req.
1 bed	36	760 – 774	700 SF min.
2 bed	34	1,046 – 1,127	800 SF min.
3 bed	6	1,357	1,000 SF min.

7. **Material/Colors:** Stucco exterior walls (off-white, and light, medium and dark tans to medium oak) Stucco trim, color accents and architectural elements (dark brown and taupe shades). Metal window, balcony and patio railings (Bronze). Metal building ornaments on select wall areas, along with tile wall inserts/accents.
Concrete tile roof (Canyon Blend) with heavy corbels on select fascia areas
Canvas Awnings over select building entries (dark blue) and metal eyebrow elements over other select window/openings-entries. Ornamental metal vehicle gates within interior of project.

Project Trip Generation Rates and Calculations Summary

Trip Generation Rates							
Land Use	Daily Trip Rate	AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
		Total - % of Daily	% In	% Out	Total - % of Daily	% In	% Out
Multi-Family Apartments	8 Trips/DU	8%	20%	80%	9%	70%	30%
Specialty Retail	40 Trips/ksf	3%	60%	40%	9%	50%	50%

Trip Generation								
Land Use	Total # of Units	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			Total	In	Out	Total	In	Out
Multi-Family Apartments	49	392	31	6	25	35	25	10
Specialty Retail	3.78	151	5	3	2	14	7	7
	Total:	543	36	9	27	49	32	17

Based on the analysis, all study roadway segments analyzed would continue to operate at an acceptable LOS C or better with the addition of the proposed project. All intersections currently operate at LOS D or better, which is considered an acceptable LOS by the City of Escondido. The intersections were analyzed with the traffic generated by the proposed project added to the existing traffic volumes. With the existing lane geometries, all key intersections analyzed would continue to operate at an acceptable LOS D or better with implementation of the proposed project.

B. AVAILABILITY OF PUBLIC SERVICES

1. Effect on Police Service -- The Police Department expressed no concern regarding the proposed development and their ability to serve the site.

2. Effect on Fire Service -- The Fire Department indicated that adequate services can be provided to the site and the proposed project would not impact levels of service. The site is served by Fire Station No. 5, located at 2319 Felicita Road and Fire Station No. 1 located at 310 Quince Street.

3. Traffic – Access to the site would be provided by a single driveway from South Escondido Boulevard, which is classified as a Local Collector Road (66' R-O-W). A Traffic Study Report was prepared for the originally approved mixed-use project, which was estimated to generate up to 543 average daily trips (ADT) including 36 AM peak trips and 49 PM peak hour trips. The effects on traffic were thoroughly measured as part of the 2005 MND, which concluded there would be no significant impacts to area roadways or intersections, emergency access or parking capacity, and there are no design features or incompatible uses that would substantially increase hazards. The proposed new project is anticipated to generate approximately 608 ADT (8 trips per unit) which would be an increase of 63 daily trips (12 additional AM peak hour and 16 additional PM peak trips) compared to the original project. The Engineering Department indicated the relatively small increase in daily and peak hour trips would not result in any significant direct or near-term cumulative impacts to any of the study roadway segments analyzed, which would continue to operate at an

APPENDIX E

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
EXISTING CONDITIONS

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	7	21	27	3	11	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	24	31	3	12	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	34	0	-	0	72	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	40	-
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	1578	-	-	-	932	1042
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1578	-	-	-	927	1042
Mov Cap-2 Maneuver	-	-	-	-	927	-
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	977	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1578	-	-	-	972
HCM Lane V/C Ratio	0.005	-	-	-	0.022
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	27	3	24	27	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	3	28	31	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	34	0	119	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	86	-
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	-	-	1578	-	877	1041
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1578	-	861	1041
Mov Cap-2 Maneuver	-	-	-	-	861	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	920	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	861	-	-	1578	-
HCM Lane V/C Ratio	0.003	-	-	0.017	-
HCM Control Delay (s)	9.2	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	22	0	0	12	8	637	36	15	1191	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	23	0	0	12	8	664	38	16	1241	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1620	1990	620	1351	1971	351	1241	0	0	701	0	0
Stage 1	1272	1272	-	699	699	-	-	-	-	-	-	-
Stage 2	348	718	-	652	1272	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	68	60	431	109	62	645	557	-	-	892	-	-
Stage 1	177	237	-	397	440	-	-	-	-	-	-	-
Stage 2	641	431	-	423	237	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	65	58	431	101	60	645	557	-	-	892	-	-
Mov Cap-2 Maneuver	65	58	-	101	60	-	-	-	-	-	-	-
Stage 1	174	233	-	391	434	-	-	-	-	-	-	-
Stage 2	620	425	-	393	233	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.8	10.7	0.1	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	557	-	-	431	645	892	-	-
HCM Lane V/C Ratio	0.015	-	-	0.053	0.019	0.018	-	-
HCM Control Delay (s)	11.6	-	-	13.8	10.7	9.1	-	-
HCM Lane LOS	B	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	86	4	11	176	14	17	1	10	23	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	96	4	12	196	16	19	1	11	26	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	100	0	0	357	358	98	356	352	203
Stage 1	-	-	-	-	-	-	122	122	-	228	228	-
Stage 2	-	-	-	-	-	-	235	236	-	128	124	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1360	-	-	1493	-	-	598	568	958	599	573	838
Stage 1	-	-	-	-	-	-	882	795	-	775	715	-
Stage 2	-	-	-	-	-	-	768	710	-	876	793	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1360	-	-	1493	-	-	580	558	958	583	563	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	580	558	-	583	563	-
Stage 1	-	-	-	-	-	-	874	788	-	768	709	-
Stage 2	-	-	-	-	-	-	748	704	-	857	786	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.4	10.6	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	674	1360	-	-	1493	-	-	648
HCM Lane V/C Ratio	0.046	0.009	-	-	0.008	-	-	0.062
HCM Control Delay (s)	10.6	7.7	0	-	7.4	0	-	10.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	53	37	26	185	103	0	24	551	25	10	1165	70
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	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	38	27	191	106	0	25	568	26	10	1201	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	370	314	336	370	314	320	2421	1083	605	2421	1083
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.00	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	1283	1863	1583	1331	1863	1583	433	3539	1583	820	3539	1583
Grp Volume(v), veh/h	55	38	27	191	106	0	25	568	26	10	1201	72
Grp Sat Flow(s),veh/h/ln	1283	1863	1583	1331	1863	1583	433	1770	1583	820	1770	1583
Q Serve(g_s), s	2.9	1.3	1.1	10.5	3.7	0.0	2.2	4.6	0.4	0.4	12.5	1.2
Cycle Q Clear(g_c), s	6.6	1.3	1.1	11.8	3.7	0.0	14.7	4.6	0.4	5.0	12.5	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	370	314	336	370	314	320	2421	1083	605	2421	1083
V/C Ratio(X)	0.19	0.10	0.09	0.57	0.29	0.00	0.08	0.23	0.02	0.02	0.50	0.07
Avail Cap(c_a), veh/h	508	692	588	566	692	588	320	2421	1083	605	2421	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	25.2	25.1	30.0	26.1	0.0	9.3	4.6	3.9	5.5	5.8	4.0
Incr Delay (d2), s/veh	0.3	0.1	0.1	1.5	0.4	0.0	0.5	0.2	0.0	0.0	0.7	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	1.1	0.7	0.5	4.0	2.0	0.0	0.3	2.3	0.2	0.1	6.3	0.5
LnGrp Delay(d),s/veh	29.3	25.3	25.2	31.5	26.6	0.0	9.8	4.8	3.9	5.5	6.5	4.1
LnGrp LOS	C	C	C	C	C		A	A	A	A	A	A
Approach Vol, veh/h		120			297			619			1283	
Approach Delay, s/veh		27.1			29.7			5.0			6.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.0		19.7		57.0		19.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		52.5		28.5		52.5		28.5
Max Q Clear Time (g_c+I1), s		16.7		8.6		14.5		13.8
Green Ext Time (p_c), s		19.3		1.6		19.9		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	11	15	47	11	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	17	53	12	5	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	66	0	-	0	102	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1536	-	-	-	896	1005
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1536	-	-	-	888	1005
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	971	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1536	-	-	-	955
HCM Lane V/C Ratio	0.008	-	-	-	0.012
HCM Control Delay (s)	7.4	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	17	2	10	55	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	2	11	63	3	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	22	0	107	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	86	-
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	-	-	1593	-	891	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1593	-	885	1056
Mov Cap-2 Maneuver	-	-	-	-	885	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	930	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	922	-	-	1593	-
HCM Lane V/C Ratio	0.005	-	-	0.007	-
HCM Control Delay (s)	8.9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	15	0	0	45	25	1253	181	44	733	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	16	0	0	47	26	1305	189	46	764	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1560	2401	382	1925	2307	747	764	0	0	1494	0	0
Stage 1	855	855	-	1452	1452	-	-	-	-	-	-	-
Stage 2	705	1546	-	473	855	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	76	33	616	40	38	355	845	-	-	445	-	-
Stage 1	319	373	-	137	194	-	-	-	-	-	-	-
Stage 2	393	174	-	541	373	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	59	29	616	35	33	355	845	-	-	445	-	-
Mov Cap-2 Maneuver	59	29	-	35	33	-	-	-	-	-	-	-
Stage 1	309	334	-	133	188	-	-	-	-	-	-	-
Stage 2	331	169	-	473	334	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	16.7	0.2	0.8
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	845	-	-	616	355	445	-	-
HCM Lane V/C Ratio	0.031	-	-	0.025	0.132	0.103	-	-
HCM Control Delay (s)	9.4	-	-	11	16.7	14	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.5	0.3	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	198	5	11	115	11	6	2	11	31	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	220	6	12	128	12	7	2	12	34	1	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	140	0	0	226	0	0	399	400	223	401	397	134
Stage 1	-	-	-	-	-	-	236	236	-	158	158	-
Stage 2	-	-	-	-	-	-	163	164	-	243	239	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1443	-	-	1342	-	-	561	538	817	560	540	915
Stage 1	-	-	-	-	-	-	767	710	-	844	767	-
Stage 2	-	-	-	-	-	-	839	762	-	761	708	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1443	-	-	1342	-	-	548	529	817	543	531	915
Mov Cap-2 Maneuver	-	-	-	-	-	-	548	529	-	543	531	-
Stage 1	-	-	-	-	-	-	762	706	-	839	759	-
Stage 2	-	-	-	-	-	-	821	754	-	743	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	10.5	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	674	1443	-	-	1342	-	-	591
HCM Lane V/C Ratio	0.031	0.005	-	-	0.009	-	-	0.075
HCM Control Delay (s)	10.5	7.5	0	-	7.7	0	-	11.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	109	91	28	90	103	21	29	1348	111	28	610	49
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	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	112	94	29	93	106	22	30	1390	114	29	629	51
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	343	292	273	343	292	573	2465	1103	269	2465	1103
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	1257	1863	1583	1263	1863	1583	757	3539	1583	347	3539	1583
Grp Volume(v), veh/h	112	94	29	93	106	22	30	1390	114	29	629	51
Grp Sat Flow(s),veh/h/ln	1257	1863	1583	1263	1863	1583	757	1770	1583	347	1770	1583
Q Serve(g_s), s	6.4	3.3	1.1	5.1	3.7	0.9	1.1	14.8	1.8	3.4	4.9	0.8
Cycle Q Clear(g_c), s	10.1	3.3	1.1	8.4	3.7	0.9	6.1	14.8	1.8	18.2	4.9	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	265	343	292	273	343	292	573	2465	1103	269	2465	1103
V/C Ratio(X)	0.42	0.27	0.10	0.34	0.31	0.08	0.05	0.56	0.10	0.11	0.26	0.05
Avail Cap(c_a), veh/h	509	704	599	518	704	599	573	2465	1103	269	2465	1103
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	31.0	26.4	25.6	30.0	26.6	25.4	5.3	5.7	3.7	10.3	4.2	3.6
Incr Delay (d2), s/veh	1.1	0.4	0.1	0.7	0.5	0.1	0.2	0.9	0.2	0.8	0.2	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	2.3	1.7	0.5	1.8	2.0	0.4	0.3	7.5	0.8	0.4	2.4	0.4
LnGrp Delay(d),s/veh	32.0	26.8	25.7	30.8	27.1	25.6	5.5	6.7	3.9	11.1	4.5	3.7
LnGrp LOS	C	C	C	C	C	C	A	A	A	B	A	A
Approach Vol, veh/h		235			221			1534			709	
Approach Delay, s/veh		29.2			28.5			6.4			4.7	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.0		18.4		57.0		18.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		52.5		28.5		52.5		28.5
Max Q Clear Time (g_c+I1), s		16.8		12.1		20.2		10.4
Green Ext Time (p_c), s		23.5		1.8		21.9		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	21	1	10	27	3	3	0	40	11	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	24	1	11	31	3	3	0	45	12	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	34	0	0	25	0	0	100	97	24	118	96	32
Stage 1	-	-	-	-	-	-	40	40	-	55	55	-
Stage 2	-	-	-	-	-	-	60	57	-	63	41	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1578	-	-	1589	-	-	881	793	1052	858	794	1042
Stage 1	-	-	-	-	-	-	975	862	-	957	849	-
Stage 2	-	-	-	-	-	-	951	847	-	948	861	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1578	-	-	1589	-	-	865	784	1052	813	784	1042
Mov Cap-2 Maneuver	-	-	-	-	-	-	865	784	-	813	784	-
Stage 1	-	-	-	-	-	-	970	858	-	952	843	-
Stage 2	-	-	-	-	-	-	936	841	-	903	857	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	1.8	8.6	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1036	1578	-	-	1589	-	-	896
HCM Lane V/C Ratio	0.047	0.005	-	-	0.007	-	-	0.024
HCM Control Delay (s)	8.6	7.3	0	-	7.3	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	46	24	25	35	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	28	29	40	5	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	80	0	165	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	98	-
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	-	-	1518	-	826	997
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1518	-	809	997
Mov Cap-2 Maneuver	-	-	-	-	809	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	907	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	809	-	-	1518	-
HCM Lane V/C Ratio	0.006	-	-	0.019	-
HCM Control Delay (s)	9.5	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	41	0	0	12	13	654	36	15	1191	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	12	14	681	38	16	1241	49

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1640	2018	620	1379	1999	359	1241	0	0	719	0	0
Stage 1	1272	1272	-	727	727	-	-	-	-	-	-	-
Stage 2	368	746	-	652	1272	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	66	58	431	104	59	638	557	-	-	878	-	-
Stage 1	177	237	-	381	427	-	-	-	-	-	-	-
Stage 2	624	419	-	423	237	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	63	56	431	91	56	638	557	-	-	878	-	-
Mov Cap-2 Maneuver	63	56	-	91	56	-	-	-	-	-	-	-
Stage 1	173	233	-	371	416	-	-	-	-	-	-	-
Stage 2	596	408	-	374	233	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	10.8	0.2	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	557	-	-	431	638	878	-	-
HCM Lane V/C Ratio	0.024	-	-	0.099	0.02	0.018	-	-
HCM Control Delay (s)	11.6	-	-	14.3	10.8	9.2	-	-
HCM Lane LOS	B	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	86	4	11	176	16	17	1	10	48	1	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	96	4	12	196	18	19	1	11	53	1	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	100	0	0	372	367	98	364	360	204
Stage 1	-	-	-	-	-	-	129	129	-	229	229	-
Stage 2	-	-	-	-	-	-	243	238	-	135	131	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1357	-	-	1493	-	-	585	562	958	592	567	837
Stage 1	-	-	-	-	-	-	875	789	-	774	715	-
Stage 2	-	-	-	-	-	-	761	708	-	868	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1357	-	-	1493	-	-	556	550	958	575	555	837
Mov Cap-2 Maneuver	-	-	-	-	-	-	556	550	-	575	555	-
Stage 1	-	-	-	-	-	-	865	780	-	765	709	-
Stage 2	-	-	-	-	-	-	729	702	-	846	779	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.4	10.8	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	654	1357	-	-	1493	-	-	641
HCM Lane V/C Ratio	0.048	0.011	-	-	0.008	-	-	0.127
HCM Control Delay (s)	10.8	7.7	0	-	7.4	0	-	11.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	37	33	185	103	0	26	556	25	10	1184	70
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	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	72	38	34	191	106	0	27	573	26	10	1221	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	366	311	329	366	311	50	2193	981	22	2137	956
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.00	0.03	0.62	0.62	0.01	0.60	0.60
Sat Flow, veh/h	1283	1863	1583	1323	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	72	38	34	191	106	0	27	573	26	10	1221	72
Grp Sat Flow(s),veh/h/ln	1283	1863	1583	1323	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.0	1.3	1.4	10.9	3.8	0.0	1.2	5.8	0.5	0.4	16.4	1.5
Cycle Q Clear(g_c), s	7.8	1.3	1.4	12.2	3.8	0.0	1.2	5.8	0.5	0.4	16.4	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	366	311	329	366	311	50	2193	981	22	2137	956
V/C Ratio(X)	0.26	0.10	0.11	0.58	0.29	0.00	0.54	0.26	0.03	0.45	0.57	0.08
Avail Cap(c_a), veh/h	412	556	473	464	556	473	124	2193	981	124	2137	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	25.9	26.0	30.9	26.9	0.0	37.7	6.8	5.8	38.6	9.4	6.5
Incr Delay (d2), s/veh	0.5	0.1	0.2	1.6	0.4	0.0	8.6	0.3	0.0	13.7	1.1	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	1.5	0.7	0.6	4.1	2.0	0.0	0.7	2.9	0.2	0.3	8.3	0.7
LnGrp Delay(d),s/veh	30.7	26.1	26.1	32.6	27.4	0.0	46.3	7.1	5.8	52.3	10.5	6.6
LnGrp LOS	C	C	C	C	C		D	A	A	D	B	A
Approach Vol, veh/h		144			297			626			1303	
Approach Delay, s/veh		28.4			30.7			8.7			10.7	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	53.2		19.9	6.7	52.0		19.9
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	47.5		23.5	5.5	47.5		23.5
Max Q Clear Time (g_c+I1), s	2.4	7.8		9.8	3.2	18.4		14.2
Green Ext Time (p_c), s	0.0	20.0		1.5	0.0	16.9		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	15	3	2	21	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	3	2	22	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	31	23	23	0	-	0
Stage 1	23	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	983	1054	1592	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	981	1054	1592	-	-	-
Mov Cap-2 Maneuver	981	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1013	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1592	-	1054	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	15	3	43	47	11	1	0	18	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	17	3	49	53	12	1	0	20	5	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	66	0	0	20	0	0	205	208	19	211	202	60
Stage 1	-	-	-	-	-	-	44	44	-	157	157	-
Stage 2	-	-	-	-	-	-	161	164	-	54	45	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1536	-	-	1596	-	-	753	689	1059	746	694	1005
Stage 1	-	-	-	-	-	-	970	858	-	845	768	-
Stage 2	-	-	-	-	-	-	841	762	-	958	857	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1536	-	-	1596	-	-	725	661	1059	709	666	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	725	661	-	709	666	-
Stage 1	-	-	-	-	-	-	961	850	-	837	743	-
Stage 2	-	-	-	-	-	-	809	738	-	931	849	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	3.1	8.6	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1034	1536	-	-	1596	-	-	861
HCM Lane V/C Ratio	0.021	0.008	-	-	0.031	-	-	0.013
HCM Control Delay (s)	8.6	7.4	0	-	7.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	26	12	15	89	12	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	14	17	102	14	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	44	0	174	37
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	137	-
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	-	-	1564	-	816	1035
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1564	-	806	1035
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	820	-	-	1564	-
HCM Lane V/C Ratio	0.018	-	-	0.011	-
HCM Control Delay (s)	9.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	24	0	0	45	45	1261	181	44	733	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	25	0	0	47	47	1314	189	46	764	64

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1606	2451	382	1975	2357	751	764	0	0	1502	0	0
Stage 1	855	855	-	1502	1502	-	-	-	-	-	-	-
Stage 2	751	1596	-	473	855	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	70	31	616	37	35	353	845	-	-	442	-	-
Stage 1	319	373	-	127	183	-	-	-	-	-	-	-
Stage 2	369	165	-	541	373	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	54	26	616	31	30	353	845	-	-	442	-	-
Mov Cap-2 Maneuver	54	26	-	31	30	-	-	-	-	-	-	-
Stage 1	301	334	-	120	173	-	-	-	-	-	-	-
Stage 2	302	156	-	465	334	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	16.8	0.3	0.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	845	-	-	616	353	442	-	-
HCM Lane V/C Ratio	0.055	-	-	0.041	0.133	0.104	-	-
HCM Control Delay (s)	9.5	-	-	11.1	16.8	14.1	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.5	0.3	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	198	5	11	115	19	6	2	11	43	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	220	6	12	128	21	7	2	12	48	1	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	226	0	0	436	438	223	435	431	138
Stage 1	-	-	-	-	-	-	265	265	-	163	163	-
Stage 2	-	-	-	-	-	-	171	173	-	272	268	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1432	-	-	1342	-	-	531	512	817	531	517	910
Stage 1	-	-	-	-	-	-	740	689	-	839	763	-
Stage 2	-	-	-	-	-	-	831	756	-	734	687	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1432	-	-	1342	-	-	511	498	817	511	503	910
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	498	-	511	503	-
Stage 1	-	-	-	-	-	-	727	677	-	825	755	-
Stage 2	-	-	-	-	-	-	808	748	-	708	675	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.6	10.7	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	650	1432	-	-	1342	-	-	568
HCM Lane V/C Ratio	0.032	0.015	-	-	0.009	-	-	0.112
HCM Control Delay (s)	10.7	7.6	0	-	7.7	0	-	12.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	117	91	31	90	103	21	37	1368	111	28	619	49
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	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	121	94	32	93	106	22	38	1410	114	29	638	51
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	346	294	272	346	294	64	2166	969	53	2145	959
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.04	0.61	0.61	0.03	0.61	0.61
Sat Flow, veh/h	1257	1863	1583	1260	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	121	94	32	93	106	22	38	1410	114	29	638	51
Grp Sat Flow(s),veh/h/ln	1257	1863	1583	1260	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.2	3.4	1.3	5.4	3.9	0.9	1.7	20.1	2.4	1.3	6.8	1.0
Cycle Q Clear(g_c), s	11.1	3.4	1.3	8.7	3.9	0.9	1.7	20.1	2.4	1.3	6.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	346	294	272	346	294	64	2166	969	53	2145	959
V/C Ratio(X)	0.46	0.27	0.11	0.34	0.31	0.07	0.60	0.65	0.12	0.55	0.30	0.05
Avail Cap(c_a), veh/h	407	558	475	415	558	475	124	2166	969	124	2145	959
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	32.3	27.4	26.5	31.1	27.5	26.3	37.2	9.8	6.4	37.5	7.4	6.3
Incr Delay (d2), s/veh	1.2	0.4	0.2	0.7	0.5	0.1	8.6	1.5	0.2	8.5	0.4	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	2.6	1.8	0.6	1.9	2.0	0.4	1.0	10.3	1.1	0.7	3.4	0.5
LnGrp Delay(d),s/veh	33.6	27.8	26.7	31.9	28.0	26.4	45.8	11.3	6.6	46.0	7.8	6.4
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	A	A
Approach Vol, veh/h		247			221			1562			718	
Approach Delay, s/veh		30.5			29.5			11.8			9.2	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	52.5		19.1	7.3	52.0		19.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	47.5		23.5	5.5	47.5		23.5
Max Q Clear Time (g_c+I1), s	3.3	22.1		13.1	3.7	8.8		10.7
Green Ext Time (p_c), s	0.0	18.0		1.5	0.0	23.9		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	7	11	9	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	12	9	11	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	46	13	16	0	-	0
Stage 1	13	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	964	1067	1602	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	956	1067	1602	-	-	-
Mov Cap-2 Maneuver	956	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	981	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	1067	-	-
HCM Lane V/C Ratio	0.007	-	0.007	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

APPENDIX F

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
NEAR-TERM CONDITIONS

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	7	34	40	3	11	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	39	45	3	12	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	49	0	-	0	102	47
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	55	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1558	-	-	-	896	1022
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	968	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1558	-	-	-	892	1022
Mov Cap-2 Maneuver	-	-	-	-	892	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	963	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1558	-	-	-	942
HCM Lane V/C Ratio	0.005	-	-	-	0.023
HCM Control Delay (s)	7.3	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	61	41	24	94	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	47	28	108	7	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	117	0	257	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	163	-
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	-	-	1471	-	732	963
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1471	-	717	963
Mov Cap-2 Maneuver	-	-	-	-	717	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	849	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	717	-	-	1471	-
HCM Lane V/C Ratio	0.01	-	-	0.019	-
HCM Control Delay (s)	10.1	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	56	0	0	20	42	671	36	17	1191	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	58	0	0	21	44	699	38	18	1241	80

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1713	2100	620	1461	2081	368	1241	0	0	736	0	0
Stage 1	1276	1276	-	805	805	-	-	-	-	-	-	-
Stage 2	437	824	-	656	1276	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	58	51	431	90	53	629	557	-	-	865	-	-
Stage 1	176	236	-	342	393	-	-	-	-	-	-	-
Stage 2	568	385	-	421	236	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	52	46	431	72	48	629	557	-	-	865	-	-
Mov Cap-2 Maneuver	52	46	-	72	48	-	-	-	-	-	-	-
Stage 1	162	231	-	315	362	-	-	-	-	-	-	-
Stage 2	506	355	-	356	231	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.7	10.9	0.7	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	557	-	-	431	629	865	-	-
HCM Lane V/C Ratio	0.079	-	-	0.135	0.033	0.02	-	-
HCM Control Delay (s)	12	-	-	14.7	10.9	9.2	-	-
HCM Lane LOS	B	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.5	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	91	4	11	196	18	17	1	10	61	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	101	4	12	218	20	19	1	11	68	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	238	0	0	106	0	0	387	390	103	386	382	228
Stage 1	-	-	-	-	-	-	128	128	-	252	252	-
Stage 2	-	-	-	-	-	-	259	262	-	134	130	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1329	-	-	1485	-	-	572	545	952	573	551	811
Stage 1	-	-	-	-	-	-	876	790	-	752	698	-
Stage 2	-	-	-	-	-	-	746	691	-	869	789	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1329	-	-	1485	-	-	554	535	952	557	541	811
Mov Cap-2 Maneuver	-	-	-	-	-	-	554	535	-	557	541	-
Stage 1	-	-	-	-	-	-	867	782	-	744	692	-
Stage 2	-	-	-	-	-	-	726	685	-	849	781	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.4	10.8	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	650	1329	-	-	1485	-	-	587
HCM Lane V/C Ratio	0.048	0.009	-	-	0.008	-	-	0.14
HCM Control Delay (s)	10.8	7.7	0	-	7.4	0	-	12.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	87	46	26	197	127	14	24	585	28	10	1199	70
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	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	90	47	27	203	131	14	25	603	29	10	1236	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	400	340	349	400	340	298	2372	1061	569	2372	1061
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1238	1863	1583	1320	1863	1583	419	3539	1583	792	3539	1583
Grp Volume(v), veh/h	90	47	27	203	131	14	25	603	29	10	1236	72
Grp Sat Flow(s),veh/h/ln	1238	1863	1583	1320	1863	1583	419	1770	1583	792	1770	1583
Q Serve(g_s), s	5.2	1.6	1.1	11.5	4.7	0.5	2.5	5.3	0.5	0.4	13.9	1.2
Cycle Q Clear(g_c), s	9.8	1.6	1.1	13.1	4.7	0.5	16.4	5.3	0.5	5.7	13.9	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	400	340	349	400	340	298	2372	1061	569	2372	1061
V/C Ratio(X)	0.32	0.12	0.08	0.58	0.33	0.04	0.08	0.25	0.03	0.02	0.52	0.07
Avail Cap(c_a), veh/h	469	678	576	545	678	576	298	2372	1061	569	2372	1061
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	30.1	24.8	24.6	30.0	26.0	24.4	10.7	5.1	4.3	6.3	6.5	4.5
Incr Delay (d2), s/veh	0.6	0.1	0.1	1.5	0.5	0.0	0.6	0.3	0.0	0.1	0.8	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	1.8	0.8	0.5	4.3	2.5	0.2	0.3	2.7	0.2	0.1	7.0	0.6
LnGrp Delay(d),s/veh	30.8	24.9	24.7	31.6	26.4	24.4	11.3	5.4	4.4	6.3	7.4	4.6
LnGrp LOS	C	C	C	C	C	C	B	A	A	A	A	A
Approach Vol, veh/h		164			348			657			1318	
Approach Delay, s/veh		28.1			29.3			5.6			7.2	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.0		21.3		57.0		21.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		52.5		28.5		52.5		28.5
Max Q Clear Time (g_c+I1), s		18.4		11.8		15.9		15.1
Green Ext Time (p_c), s		19.7		1.9		20.5		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	11	28	60	11	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	32	68	12	5	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	81	0	-	0	131	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	57	-
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	1517	-	-	-	863	988
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	966	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1517	-	-	-	855	988
Mov Cap-2 Maneuver	-	-	-	-	855	-
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1517	-	-	-	930
HCM Lane V/C Ratio	0.008	-	-	-	0.012
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	52	42	10	125	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	48	11	144	8	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	108	0	251	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	167	-
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	-	-	1483	-	738	975
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1483	-	732	975
Mov Cap-2 Maneuver	-	-	-	-	732	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	856	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	756	-	-	1483	-
HCM Lane V/C Ratio	0.012	-	-	0.008	-
HCM Control Delay (s)	9.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	50	0	0	48	60	1288	181	52	733	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	52	0	0	50	62	1342	189	54	764	80

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1668	2527	382	2051	2433	765	764	0	0	1530	0	0
Stage 1	872	872	-	1561	1561	-	-	-	-	-	-	-
Stage 2	796	1655	-	490	872	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	63	27	616	32	31	346	845	-	-	431	-	-
Stage 1	312	366	-	117	171	-	-	-	-	-	-	-
Stage 2	347	154	-	529	366	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	46	22	616	25	25	346	845	-	-	431	-	-
Mov Cap-2 Maneuver	46	22	-	25	25	-	-	-	-	-	-	-
Stage 1	289	320	-	108	158	-	-	-	-	-	-	-
Stage 2	275	143	-	424	320	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	17.2	0.4	0.9
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	845	-	-	616	346	431	-	-
HCM Lane V/C Ratio	0.074	-	-	0.085	0.145	0.126	-	-
HCM Control Delay (s)	9.6	-	-	11.4	17.2	14.6	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.5	0.4	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	217	5	11	123	15	6	2	11	71	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	241	6	12	137	17	7	2	12	79	1	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	153	0	0	247	0	0	431	435	244	433	429	145
Stage 1	-	-	-	-	-	-	257	257	-	169	169	-
Stage 2	-	-	-	-	-	-	174	178	-	264	260	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1428	-	-	1319	-	-	535	514	795	533	518	902
Stage 1	-	-	-	-	-	-	748	695	-	833	759	-
Stage 2	-	-	-	-	-	-	828	752	-	741	693	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1428	-	-	1319	-	-	522	506	795	517	510	902
Mov Cap-2 Maneuver	-	-	-	-	-	-	522	506	-	517	510	-
Stage 1	-	-	-	-	-	-	744	691	-	828	751	-
Stage 2	-	-	-	-	-	-	810	744	-	723	689	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	10.7	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	649	1428	-	-	1319	-	-	540
HCM Lane V/C Ratio	0.033	0.005	-	-	0.009	-	-	0.165
HCM Control Delay (s)	10.7	7.5	0	-	7.8	0	-	13
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	144	114	28	95	67	21	29	1383	122	28	645	49
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	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	148	118	29	98	69	22	30	1426	126	29	665	51
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	353	300	262	353	300	549	2448	1095	255	2448	1095
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.69	0.69	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1300	1863	1583	1236	1863	1583	732	3539	1583	331	3539	1583
Grp Volume(v), veh/h	148	118	29	98	69	22	30	1426	126	29	665	51
Grp Sat Flow(s),veh/h/ln	1300	1863	1583	1236	1863	1583	732	1770	1583	331	1770	1583
Q Serve(g_s), s	8.2	4.2	1.1	5.7	2.4	0.9	1.2	15.8	2.0	3.8	5.4	0.8
Cycle Q Clear(g_c), s	10.6	4.2	1.1	9.8	2.4	0.9	6.6	15.8	2.0	19.6	5.4	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	353	300	262	353	300	549	2448	1095	255	2448	1095
V/C Ratio(X)	0.49	0.33	0.10	0.37	0.20	0.07	0.05	0.58	0.12	0.11	0.27	0.05
Avail Cap(c_a), veh/h	543	699	595	491	699	595	549	2448	1095	255	2448	1095
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	30.3	26.6	25.4	30.8	25.9	25.3	5.7	6.0	3.9	11.1	4.4	3.7
Incr Delay (d2), s/veh	1.2	0.6	0.1	0.9	0.3	0.1	0.2	1.0	0.2	0.9	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.2	0.5	2.0	1.2	0.4	0.3	7.9	0.9	0.4	2.7	0.4
LnGrp Delay(d),s/veh	31.6	27.2	25.5	31.7	26.1	25.4	5.9	7.1	4.1	12.0	4.7	3.8
LnGrp LOS	C	C	C	C	C	C	A	A	A	B	A	A
Approach Vol, veh/h		295			189			1582			745	
Approach Delay, s/veh		29.2			28.9			6.8			4.9	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.0		18.9		57.0		18.9
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		52.5		28.5		52.5		28.5
Max Q Clear Time (g_c+I1), s		17.8		12.6		21.6		11.8
Green Ext Time (p_c), s		23.9		1.8		22.1		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	34	1	10	40	3	3	0	40	11	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	39	1	11	45	3	3	0	45	12	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	40	0	0	129	127	39	148	126	47
Stage 1	-	-	-	-	-	-	55	55	-	70	70	-
Stage 2	-	-	-	-	-	-	74	72	-	78	56	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1558	-	-	1570	-	-	844	764	1033	820	764	1022
Stage 1	-	-	-	-	-	-	957	849	-	940	837	-
Stage 2	-	-	-	-	-	-	935	835	-	931	848	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1570	-	-	829	755	1033	777	755	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	829	755	-	777	755	-
Stage 1	-	-	-	-	-	-	952	845	-	935	831	-
Stage 2	-	-	-	-	-	-	920	829	-	886	844	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1.4	8.7	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1016	1558	-	-	1570	-	-	864
HCM Lane V/C Ratio	0.048	0.005	-	-	0.007	-	-	0.025
HCM Control Delay (s)	8.7	7.3	0	-	7.3	0	-	9.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	80	62	25	102	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	71	29	117	9	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	163	0	303	128
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	175	-
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	-	-	1416	-	689	922
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	855	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1416	-	674	922
Mov Cap-2 Maneuver	-	-	-	-	674	-
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	836	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	674	-	-	1416	-
HCM Lane V/C Ratio	0.014	-	-	0.02	-
HCM Control Delay (s)	10.4	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	75	0	0	20	47	688	36	17	1191	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	78	0	0	21	49	717	38	18	1241	84

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1732	2128	620	1489	2109	377	1241	0	0	754	0	0
Stage 1	1276	1276	-	833	833	-	-	-	-	-	-	-
Stage 2	456	852	-	656	1276	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	56	49	431	86	51	621	557	-	-	852	-	-
Stage 1	176	236	-	329	382	-	-	-	-	-	-	-
Stage 2	554	374	-	421	236	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	50	44	431	65	46	621	557	-	-	852	-	-
Mov Cap-2 Maneuver	50	44	-	65	46	-	-	-	-	-	-	-
Stage 1	161	231	-	300	348	-	-	-	-	-	-	-
Stage 2	488	341	-	337	231	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.2	11	0.7	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	557	-	-	431	621	852	-	-
HCM Lane V/C Ratio	0.088	-	-	0.181	0.034	0.021	-	-
HCM Control Delay (s)	12.1	-	-	15.2	11	9.3	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.7	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	91	4	11	196	20	17	1	10	86	1	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	101	4	12	218	22	19	1	11	96	1	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	240	0	0	106	0	0	401	398	103	394	390	229
Stage 1	-	-	-	-	-	-	134	134	-	253	253	-
Stage 2	-	-	-	-	-	-	267	264	-	141	137	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1327	-	-	1485	-	-	560	540	952	566	545	810
Stage 1	-	-	-	-	-	-	869	785	-	751	698	-
Stage 2	-	-	-	-	-	-	738	690	-	862	783	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1327	-	-	1485	-	-	532	528	952	549	533	810
Mov Cap-2 Maneuver	-	-	-	-	-	-	532	528	-	549	533	-
Stage 1	-	-	-	-	-	-	858	775	-	741	692	-
Stage 2	-	-	-	-	-	-	706	684	-	840	773	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.4	11	12.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	631	1327	-	-	1485	-	-	590
HCM Lane V/C Ratio	0.049	0.012	-	-	0.008	-	-	0.209
HCM Control Delay (s)	11	7.7	0	-	7.4	0	-	12.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	46	33	197	127	14	26	590	28	10	1218	70
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	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	107	47	34	203	131	14	27	608	29	10	1256	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	394	335	340	394	335	50	2151	962	22	2096	937
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.03	0.61	0.61	0.01	0.59	0.59
Sat Flow, veh/h	1238	1863	1583	1312	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	107	47	34	203	131	14	27	608	29	10	1256	72
Grp Sat Flow(s),veh/h/ln	1238	1863	1583	1312	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.4	1.6	1.4	11.9	4.8	0.6	1.2	6.5	0.6	0.4	18.0	1.6
Cycle Q Clear(g_c), s	11.2	1.6	1.4	13.5	4.8	0.6	1.2	6.5	0.6	0.4	18.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	394	335	340	394	335	50	2151	962	22	2096	937
V/C Ratio(X)	0.39	0.12	0.10	0.60	0.33	0.04	0.54	0.28	0.03	0.45	0.60	0.08
Avail Cap(c_a), veh/h	379	546	464	447	546	464	122	2151	962	122	2096	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	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	31.6	25.6	25.5	31.1	26.8	25.2	38.5	7.4	6.3	39.3	10.3	7.0
Incr Delay (d2), s/veh	0.9	0.1	0.1	1.7	0.5	0.1	8.8	0.3	0.1	13.8	1.3	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	2.3	0.9	0.6	4.4	2.5	0.3	0.7	3.2	0.3	0.3	9.1	0.7
LnGrp Delay(d),s/veh	32.5	25.7	25.6	32.7	27.3	25.2	47.2	7.8	6.3	53.1	11.6	7.2
LnGrp LOS	C	C	C	C	C	C	D	A	A	D	B	A
Approach Vol, veh/h		188			348			664			1338	
Approach Delay, s/veh		29.5			30.4			9.3			11.7	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	53.3		21.5	6.8	52.0		21.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	47.5		23.5	5.5	47.5		23.5
Max Q Clear Time (g_c+I1), s	2.4	8.5		13.2	3.2	20.0		15.5
Green Ext Time (p_c), s	0.0	20.8		1.7	0.0	17.0		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	15	3	2	21	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	3	2	22	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	31	23	23	0	-	0
Stage 1	23	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	983	1054	1592	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	981	1054	1592	-	-	-
Mov Cap-2 Maneuver	981	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1013	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1592	-	1054	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	28	3	43	60	11	1	0	18	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	32	3	49	68	12	1	0	20	5	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	81	0	0	35	0	0	235	237	34	241	232	74
Stage 1	-	-	-	-	-	-	59	59	-	172	172	-
Stage 2	-	-	-	-	-	-	176	178	-	69	60	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1517	-	-	1576	-	-	720	664	1039	713	668	988
Stage 1	-	-	-	-	-	-	953	846	-	830	756	-
Stage 2	-	-	-	-	-	-	826	752	-	941	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1517	-	-	1576	-	-	692	636	1039	677	640	988
Mov Cap-2 Maneuver	-	-	-	-	-	-	692	636	-	677	640	-
Stage 1	-	-	-	-	-	-	944	838	-	823	731	-
Stage 2	-	-	-	-	-	-	793	727	-	914	837	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	2.8	8.6	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1012	1517	-	-	1576	-	-	835
HCM Lane V/C Ratio	0.021	0.008	-	-	0.031	-	-	0.014
HCM Control Delay (s)	8.6	7.4	0	-	7.4	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	61	52	15	159	16	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	60	17	183	18	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	130	0	317	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	217	-
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	-	-	1455	-	676	956
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	819	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1455	-	667	956
Mov Cap-2 Maneuver	-	-	-	-	667	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	679	-	-	1455	-
HCM Lane V/C Ratio	0.029	-	-	0.012	-
HCM Control Delay (s)	10.5	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	59	0	0	48	80	1296	181	52	733	96
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	140	-	-	180	-	20
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	61	0	0	50	83	1350	189	54	764	100

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1714	2577	382	2101	2483	769	764	0	0	1539	0	0
Stage 1	872	872	-	1611	1611	-	-	-	-	-	-	-
Stage 2	842	1705	-	490	872	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	58	25	616	30	29	344	845	-	-	428	-	-
Stage 1	312	366	-	109	162	-	-	-	-	-	-	-
Stage 2	325	145	-	529	366	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	41	20	616	23	23	344	845	-	-	428	-	-
Mov Cap-2 Maneuver	41	20	-	23	23	-	-	-	-	-	-	-
Stage 1	281	320	-	98	146	-	-	-	-	-	-	-
Stage 2	250	131	-	416	320	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	17.2	0.5	0.9
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	845	-	-	616	344	428	-	-
HCM Lane V/C Ratio	0.099	-	-	0.1	0.145	0.127	-	-
HCM Control Delay (s)	9.7	-	-	11.5	17.2	14.6	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	0.5	0.4	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	217	5	11	123	23	6	2	11	83	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	241	6	12	137	26	7	2	12	92	1	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	162	0	0	247	0	0	468	473	244	467	463	149
Stage 1	-	-	-	-	-	-	286	286	-	174	174	-
Stage 2	-	-	-	-	-	-	182	187	-	293	289	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1417	-	-	1319	-	-	505	490	795	506	496	898
Stage 1	-	-	-	-	-	-	721	675	-	828	755	-
Stage 2	-	-	-	-	-	-	820	745	-	715	673	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1417	-	-	1319	-	-	486	477	795	486	483	898
Mov Cap-2 Maneuver	-	-	-	-	-	-	486	477	-	486	483	-
Stage 1	-	-	-	-	-	-	709	664	-	814	747	-
Stage 2	-	-	-	-	-	-	798	738	-	690	662	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.5	11	13.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	626	1417	-	-	1319	-	-	518
HCM Lane V/C Ratio	0.034	0.015	-	-	0.009	-	-	0.208
HCM Control Delay (s)	11	7.6	0	-	7.8	0	-	13.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	152	114	31	95	67	21	37	1403	122	28	654	49
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	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	157	118	32	98	69	22	38	1446	126	29	674	51
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	356	303	259	356	303	64	2151	963	53	2130	953
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.04	0.61	0.61	0.03	0.60	0.60
Sat Flow, veh/h	1300	1863	1583	1232	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	157	118	32	98	69	22	38	1446	126	29	674	51
Grp Sat Flow(s),veh/h/ln	1300	1863	1583	1232	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.1	4.3	1.3	5.9	2.5	0.9	1.7	21.4	2.7	1.3	7.4	1.0
Cycle Q Clear(g_c), s	11.6	4.3	1.3	10.2	2.5	0.9	1.7	21.4	2.7	1.3	7.4	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	356	303	259	356	303	64	2151	963	53	2130	953
V/C Ratio(X)	0.52	0.33	0.11	0.38	0.19	0.07	0.60	0.67	0.13	0.55	0.32	0.05
Avail Cap(c_a), veh/h	438	555	471	391	555	471	124	2151	963	124	2130	953
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	31.7	27.6	26.3	32.0	26.8	26.2	37.5	10.3	6.6	37.8	7.7	6.5
Incr Delay (d2), s/veh	1.4	0.5	0.2	0.9	0.3	0.1	8.7	1.7	0.3	8.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	2.3	0.6	2.1	1.3	0.4	1.0	10.7	1.2	0.7	3.7	0.5
LnGrp Delay(d),s/veh	33.1	28.1	26.5	32.9	27.1	26.3	46.2	12.0	6.9	46.3	8.1	6.6
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	A	A
Approach Vol, veh/h		307			189			1610			754	
Approach Delay, s/veh		30.5			30.0			12.4			9.5	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	52.5		19.6	7.3	52.0		19.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	47.5		23.5	5.5	47.5		23.5
Max Q Clear Time (g_c+I1), s	3.3	23.4		13.6	3.7	9.4		12.2
Green Ext Time (p_c), s	0.0	17.9		1.5	0.0	24.7		1.6

Intersection Summary		
HCM 2010 Ctrl Delay		14.7
HCM 2010 LOS		B

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	7	11	9	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	12	9	11	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	46	13	16	0	-	0
Stage 1	13	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	964	1067	1602	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	956	1067	1602	-	-	-
Mov Cap-2 Maneuver	956	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	981	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	1067	-	-
HCM Lane V/C Ratio	0.007	-	0.007	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

DEL PRADO ESCONDIDO
TRAFFIC IMPACT STUDY

August 2015

KOA CORPORATION
PLANNING & ENGINEERING
www.koacorporation.com

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TRAFFIC IMPACT STUDY

August 2015

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CHAPTER 1
THE PROJECT

This traffic impact analysis has been prepared for the proposed Del Prado Escondido residential development in the City of Escondido. The proposed project is located on the southwest corner of Brotherton Road and South Centre City Parkway. Access to the project site is provided by two project driveways with one on South Centre City Parkway and one on Brotherton Road. Centre City Parkway is a major arterial that connect the project to other arterials. Interstate 15 (I-15) provides regional access to the project site.

Figure 1-1 shows the project study area. Figure 1-2 shows the project site plan.

PROJECT DESCRIPTION

The project consists of 113 multi-family attached condominiums. The major part of the project site is currently vacant with one single family detached home located at the northwest corner of the project site. The project generates a total of 904 daily driveway trips.

STUDY AREA

The study area for this project includes those locations that are expected to be affected by this project. The scope of the study area is based on the City of Escondido Traffic Impact Analysis Guideline, discussions with City staff and a working knowledge of the local transportation system. The specific study area includes eight roadway segments and five intersections:

Roadway Segments

- South Centre City Parkway from Brotherton Road to Citracado Parkway
- Centre City Parkway north of Brotherton Road
- Centre City Parkway from Brotherton Road to Citracado Parkway
- Centre City Parkway south of Citracado Parkway
- Brotherton Road from Charise Street to South Center Parkway
- Brotherton Road from South Center Parkway to Centre City Parkway
- Citracado Parkway west of South Centre City Parkway
- Citracado Parkway from South Centre City Parkway to Centre City Parkway

Intersections

- Charise Street/Project Driveway #1 at Brotherton Road
- South Centre City Parkway at Brotherton Road
- Centre City Parkway at Brotherton Road
- South Centre City Parkway at Citracado Parkway
- Centre City Parkway at Citracado Parkway

PROJECT TRIP GENERATION

Trip generation is a measure or forecast of the number of trips that begin or end at the project site. The traffic generated is a function of the extent and type of development proposed for the site. These trips will result in some traffic increases on the streets where they occur. Vehicular traffic generation characteristics for projects are estimated based on established rates. These rates identify the probable

traffic generation of various land uses based studies of developments in comparable settings. The rates used in this analysis were determined based on rates contained in the (SANDAG) (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (2002). The manual provide standards and recommendations for the probable traffic generation of various land uses based upon local, regional and nationwide studies of existing developments in comparable settings. Appendix C contains excerpts from the manual.

Table 1-1
Project Trip Generation

Land Use	Intensity	Unit	Daily Rate	Daily Trips		AM Peak Hour			PM Peak Hour		
						Total	In	Out	Total	In	Out
Condominium (6-20 DU/AC)	113	DU	8 trips Per DU	904	Rate	0.08	20%	80%	0.1	70%	30%
					Trips	72	14	58	90	63	27

Source (Trip Rate): SANDAG (not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002).
Note: Numbers may not total due to rounding.

TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution and assignment is the process of identifying the probable destinations, directions and traffic routes that project related traffic will likely affect. Trip distribution and assignment information has been estimated from observed traffic patterns for this project. Once the proposed developments trips have been estimated, they are assigned to the study area network. The trip distribution and assignment for this project is based on observed traffic patterns and engineering judgment.

The trip distribution and assignment for the project-related trips is shown in Figure 1-3 and 1-4. Figures 1-5 through 1-7 show the resulting daily and peak hour project trips.

PROJECT ACCESS

The proposed project will be accessed through two driveways, one on South Centre City Parkway and one on Brotherton Road. Currently one driveway on South Centre City Parkway exists. The driveway on Brotherton Road would align to Charise Street to form the south leg of the Brotherton Road and Charise Street intersection.

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KOA CORPORATION PLANNING & ENGINEERING	Del Prado Escondido, Traffic Impact Study		Figure 1-1
	Escondido, CA	Page 3	Project Study Area

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KOA CORPORATION PLANNING & ENGINEERING	Del Prado Escondido, Traffic Impact Study		Figure 1-2 cont.
	Escondido, CA	Page 5	Project Site Plan

LEGEND

- Project Site
- One-Way Street
- # Study Intersection
- XX% Trip Distribution Percentage

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Del Prado Escondido, Traffic Impact Study		Figure 1-3
Escondido, CA	Page 6	Project Outbound Trip Distribution

LEGEND

- Project Site
- One-Way Street
- # Study Intersection
- XX% Trip Distribution Percentage

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KOA CORPORATION PLANNING & ENGINEERING	Del Prado Escondido, Traffic Impact Study		Figure 1-4
	Escondido, CA	Page 7	Project Inbound Trip Distribution

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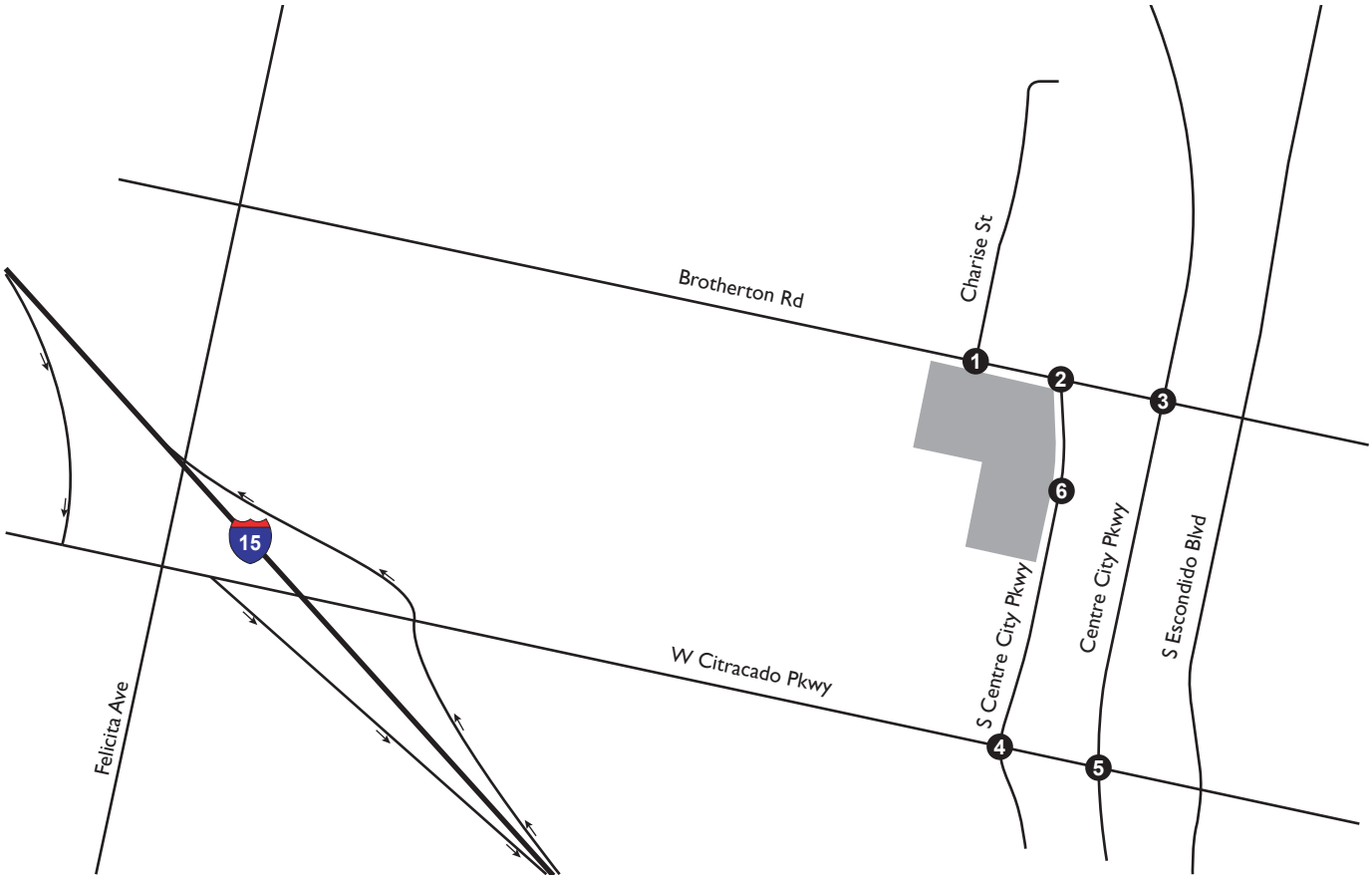

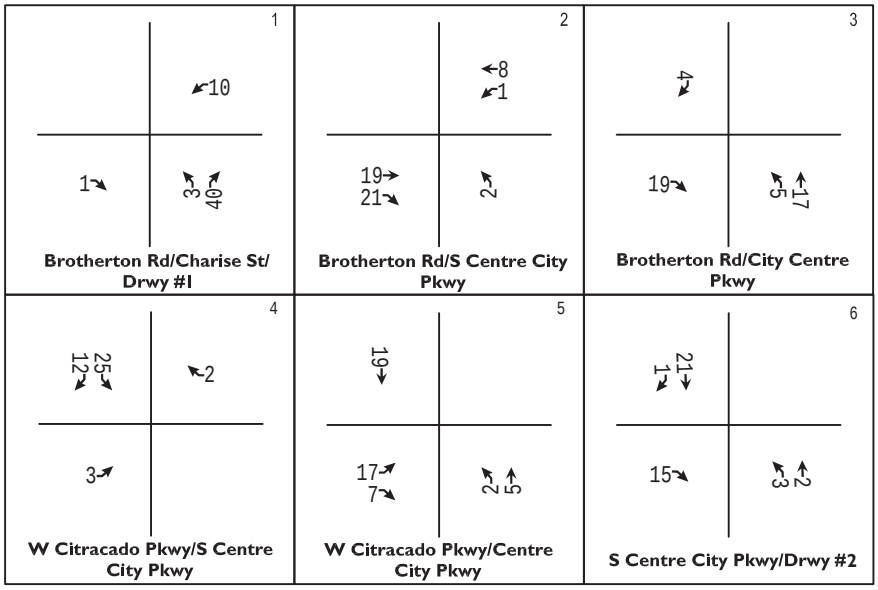

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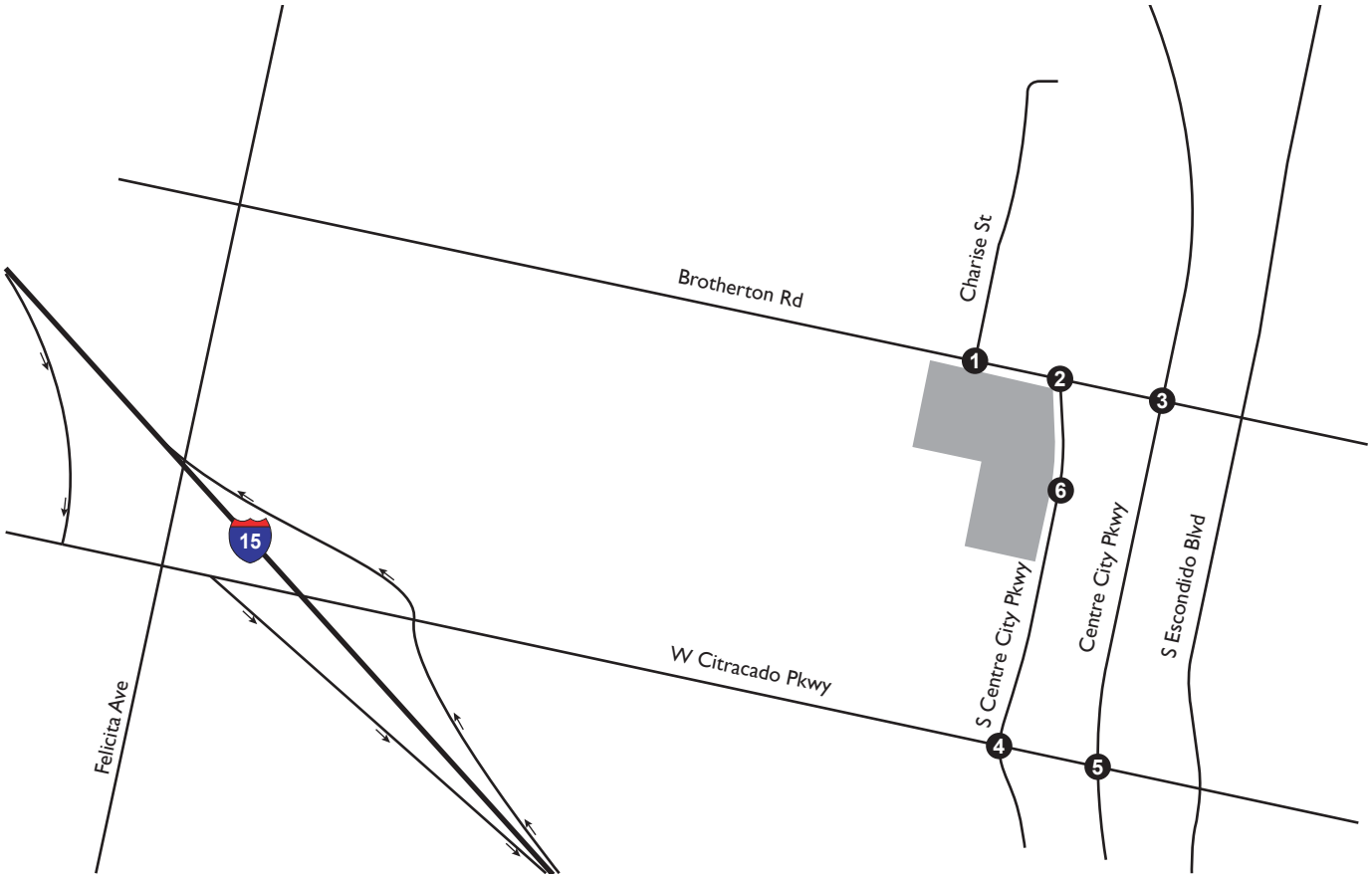

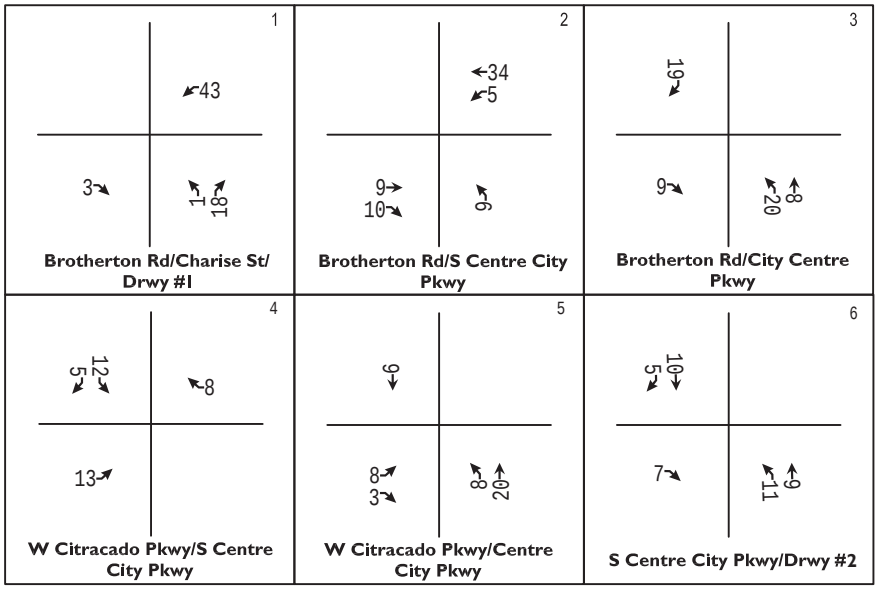

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CHAPTER 2
METHODOLOGIES

This chapter documents the methodologies and assumptions used to conduct the traffic impact analysis for the project. Study methodology and analysis is based on the City of Escondido Traffic Impact Analysis Guideline (October, 2013), San Diego Traffic Engineer's Council (SANTEC) and Institute of Transportation Engineers (ITE) guidelines adopted in March 2000. The latter two guidelines are used to determine the project's conformance with County of San Diego Public Facility Element policies and evaluate whether a project's impact is perceptible to the average driver. This section contains the following background information:

- Study scenarios
- Study time periods
- Capacity analysis methodologies

STUDY SCENARIOS

This report presents an analysis of the following analysis scenarios:

- Existing Conditions
- Existing Conditions With Project
- Near-Term Without Project
- Near-Term With Project

Since the proposed project is slightly less dense than the General Plan Land Use Element, the project would have less of an impact on the study intersections and segments. Hence the Horizon Year 2035 conditions scenario was not included in this study report.

ANALYSIS METHODOLOGIES

Street system operating conditions are typically described in terms of "level of service." Level of service is a report-card scale used to indicate the quality of traffic flow on roadway segments and at intersections. Level of service (LOS) ranges from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). A more detailed description of the concepts described in this section is provided in Appendix A of this document.

The following methods are outlined in this publication and used in this study.

Roadway Segment Capacity Analysis

The City of Escondido guidelines have published daily traffic volume standards for roadways within its jurisdiction. To determine service levels on study area roadway segments, we compared the appropriate average daily traffic thresholds for level of service to the daily capacity of the study area roadway segments, and the existing and future volumes in the study area. The thresholds for determining level of service used in this analysis are summarized in Appendix A.

Intersection Capacity Analysis

The analysis of peak hour intersection performance was conducted using the Synchro analysis software program, which uses methodologies defined in the 2010 Highway Capacity Manual (HCM)

to calculate results. Level of service (LOS) for intersections is determined by control delay. Control delay is defined as the total elapsed time from when a vehicle stops at the end of a queue to the time the vehicle departs from the stop line. The total elapsed time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in the queue. Appendix A lists the HCM delay/LOS criteria for both signalized and unsignalized intersections.

Signalized Intersections

The HCM analysis methodology for evaluating signalized intersections is based on the "operational analysis" procedure. This technique uses 1,900 passenger cars per hour of green per lane (pcphgpl) as the maximum saturation flow of a single lane at an intersection. This saturation flow rate is adjusted to account for lane width, on-street parking, conflicting pedestrian flow, traffic composition, (e.g., the percentage of vehicles that are trucks) and shared lane movements (e.g., through and right-turn movements from the same lane). Average control delay is calculated by taking a volume-weighted average of all the delays for all vehicles entering the intersection.

Two-Way Stop-Controlled Intersections

The HCM analysis methodology for evaluating two-way stop-controlled (TWSC) intersections is based on gap acceptance and conflicting traffic for vehicles stopped on the minor-street approaches. The critical gap (or minimum gap that would be acceptable) is defined as the minimum time interval in the major-street traffic stream that allows intersection entry for one minor-street vehicle. Average control delay and LOS for the "worst approach" are reported. Level of service is not defined for the intersection as a whole.

Analysis of Significance

To determine direct project impacts, the SANTEC/ITE guidelines have developed a series of thresholds based on allowable increases in volume-to-capacity ratios that become more stringent as level of service worsens. Appendix A summarizes these thresholds. Where roadway segments and intersections operate at LOS C or better impacts are not considered significant.

CHAPTER 3
EXISTING CONDITIONS

ROADWAY NETWORK

The principal roadways in the project study area are described briefly below. The description includes the physical characteristics, adjacent land uses, and traffic control devices along these roadways. The existing roadway geometry and control conditions are shown in Figure 3-1. Additional details regarding specific intersection operating conditions can be found on the capacity analysis worksheets in Appendix E.

Centre City Parkway runs north/south splitting off from I-15 close to south limit of the City. It runs east of and parallel to I-15 and passes through downtown Escondido. The street runs past the northern limits of the City and parallel to the I-15 Freeway. The street functions as a four-lane divided major arterial street with bike lanes and with parking restricted. There is no sidewalk and no posted speed limit signs were observed in the vicinity of the project area. The street has frontage roads on either side south of Brotherton Road and on east side north of Brotherton Road, in the vicinity of the project area. The land use west of the street is mainly residential.

South Centre City Parkway is a two-way frontage street which runs north/south parallel to and on the west side of Centre City Parkway. The street currently functions as 2 lane undivided local collector. The street has sidewalk and parking is permitted on west side of the street. The roadway provides driveway access to adjacent land uses, which currently consist of retail and a day care center.

Citracado Parkway runs east/west and connects Centre City Parkway on the east and I-15 on the west. The street currently functions as 2 lane undivided local collector between Centre City Parkway and Miller Avenue and as a 4 lane divided collector between I-15 northbound ramps and Felicita Road. There is sidewalk on some segments of the street and parking is restricted on both sides of the street. The speed limit is posted at 30 mph at the east end of Citracado Parkway. The street provides driveway access to adjacent land uses which consist of residential uses, a hospital and doctors' offices, and a church.

Brotherton Road runs east/west intersecting Centre City Parkway on the east and dead ends on the east side of the I-15 freeway on the west. The street currently functions as a 2 lane local collector. There is sidewalk and parking allowed on some segments of the street. No posted speed signs were observed but assumed prima facie 25 mph. The street provides driveway access to adjacent land uses which consist of residential, school and church uses.

TRAFFIC VOLUMES

The intersection turning movement counts were conducted during the weekday morning peak period from 7:00 AM to 9:00 AM and during the weekday evening peak period from 4:00 PM to 6:00 PM in September 2014. Average daily traffic volumes were obtained through machine data collection. Appendix B maintains all traffic count data. The daily traffic volumes are shown in Figure 3-2.
The resultant existing weekday morning and evening peak hour intersection volumes are shown in Figures 3-3 and 3-4.

Table 3-1
Existing Roadway Segment Conditions

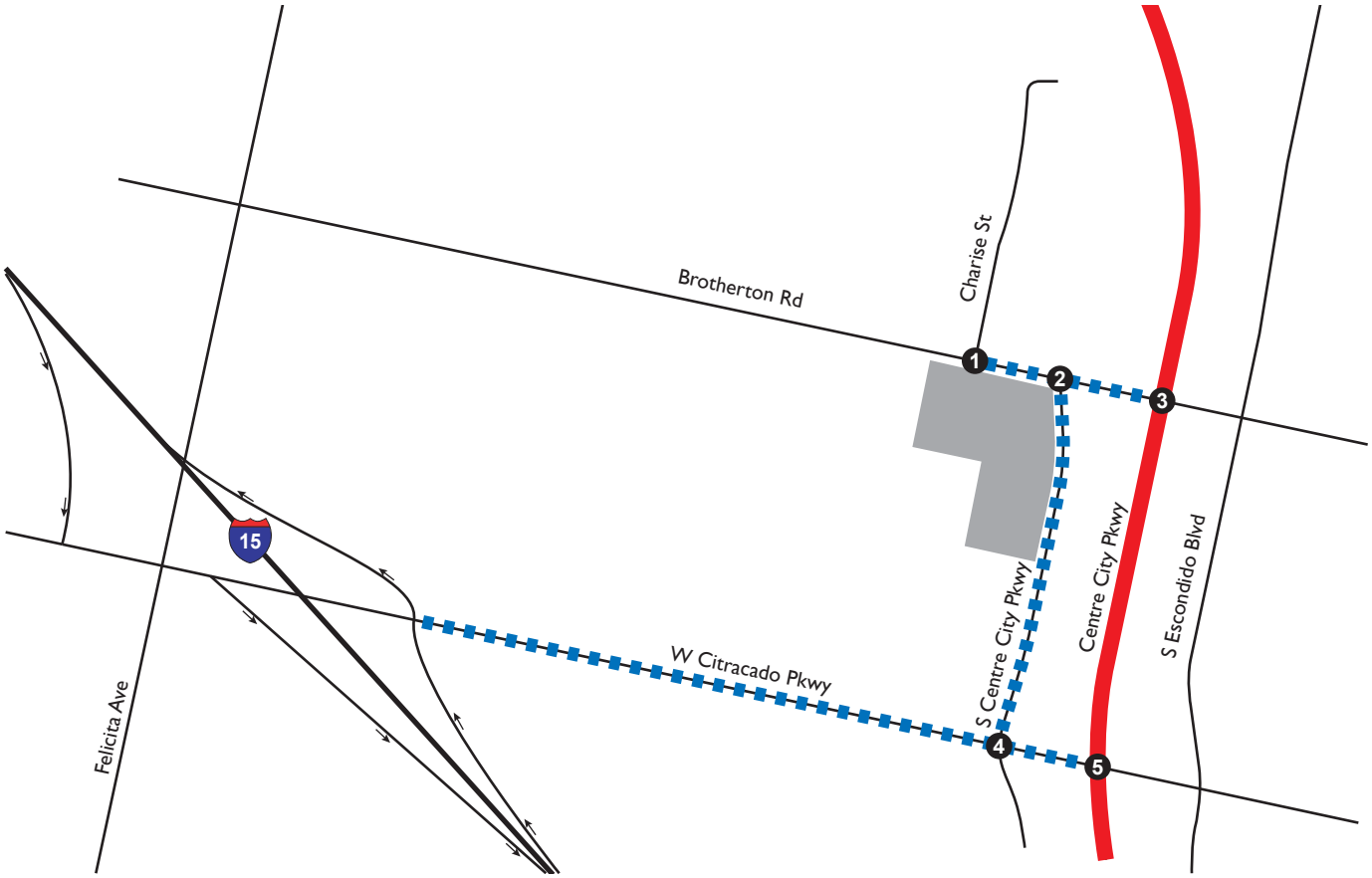
Roadway Segment	Lanes/ Class	LOS E Capacity	Existing Without Project			Project Traffic	Existing With Project			Comparison	
			ADT	V/C	LOS		ADT	V/C	LOS	**Δ V/C**	Signi ficant ?
S Centre City Pkwy											
From Brotherton Rd to Citracado Pkwy	2LC	10,000	209	0.021	A	430	639	0.064	A	0.043	No
Centre City Pkwy											
North of Brotherton Rd	4MA	37,000	23,463	0.634	C	272	23,735	0.641	C	0.007	No
From Brotherton Rd to Citracado Pkwy	4MA	37,000	24,280	0.656	C	428	24,708	0.668	C	0.012	No
South of Citracado Pkwy	4MA	37,000	24,378	0.659	C	406	24,784	0.670	C	0.011	No
Brotherton Rd											
From Charise St to S Centre City Pkwy	2LC	10,000	764	0.076	A	618	1,382	0.138	A	0.062	No
From S Centre City Pkwy to Centre City Pkwy	2LC	10,000	838	0.084	A	428	1,266	0.127	A	0.043	No
Citracado Pkwy/Gamble Ln											
From S Center City Pkwy To Centre City Pkwy	2LC	10,000	4,758	0.476	B	250	5,008	0.501	B	0.025	No

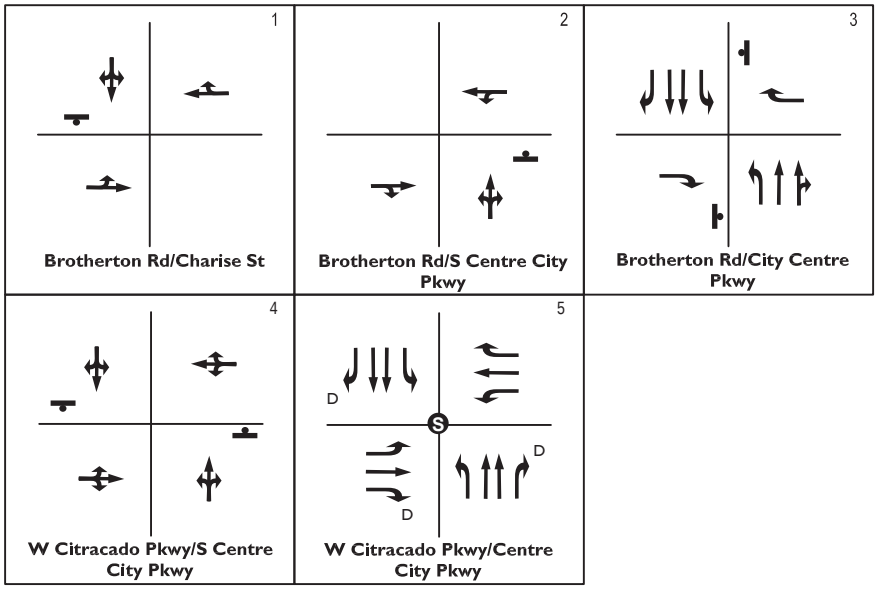
Abbreviations: 2LC: 2 Local Collector, 3C: 3 Lane Collector, 4C: 4 Lane Collector, 4MA: 4 Lane Major Arterial

Table 3-2
Existing Intersection Conditions

Intersection	Existing Conditions		Existing + Project		Δ Delay	Significant
	Delay	LOS	Delay	LOS		
AM Peak Hour						
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.8	A	9.1	A	0.3	No
2. Brotherton Rd & S. Centre City Pkwy [1]	9.2	A	9.5	A	0.3	No
3. Brotherton Rd & Centre City Pkwy [2]	13.8	B	14.3	B	0.5	No
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	10.9	B	11.4	B	0.5	No
5. W. Citracado Pkwy & Centre City Pkwy [3]	10.1	B	13.7	B	3.6	No
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.5	A	8.5	No
PM Peak Hour						
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.8	A	9.2	A	0.4	No
2. Brotherton Rd & S. Centre City Pkwy [1]	8.9	A	9.5	A	0.6	No
3. Brotherton Rd & Centre City Pkwy [2]	16.7	C	16.8	C	0.1	No
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	11.6	B	12.1	B	0.5	No
5. W. Citracado Pkwy & Centre City Pkwy [3]	9.8	A	14.2	B	4.4	No
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.4	A	8.4	No

[1] Side Street Stop Controlled
[2] All-Way Stop Controlled
[3] Signalized Intersection





LEGEND

- Project Site
- # Study Intersection
- S Signalized Intersection
- Stop Sign
- D Defacto Right Turn
- Lane Geometry

Roadway Classification

- 2 Local Collector
- 4 Lane Major Arterial
- Non-Study Segment

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LEGEND

- Project Site
- → One-Way Street
- XX Average Daily Traffic

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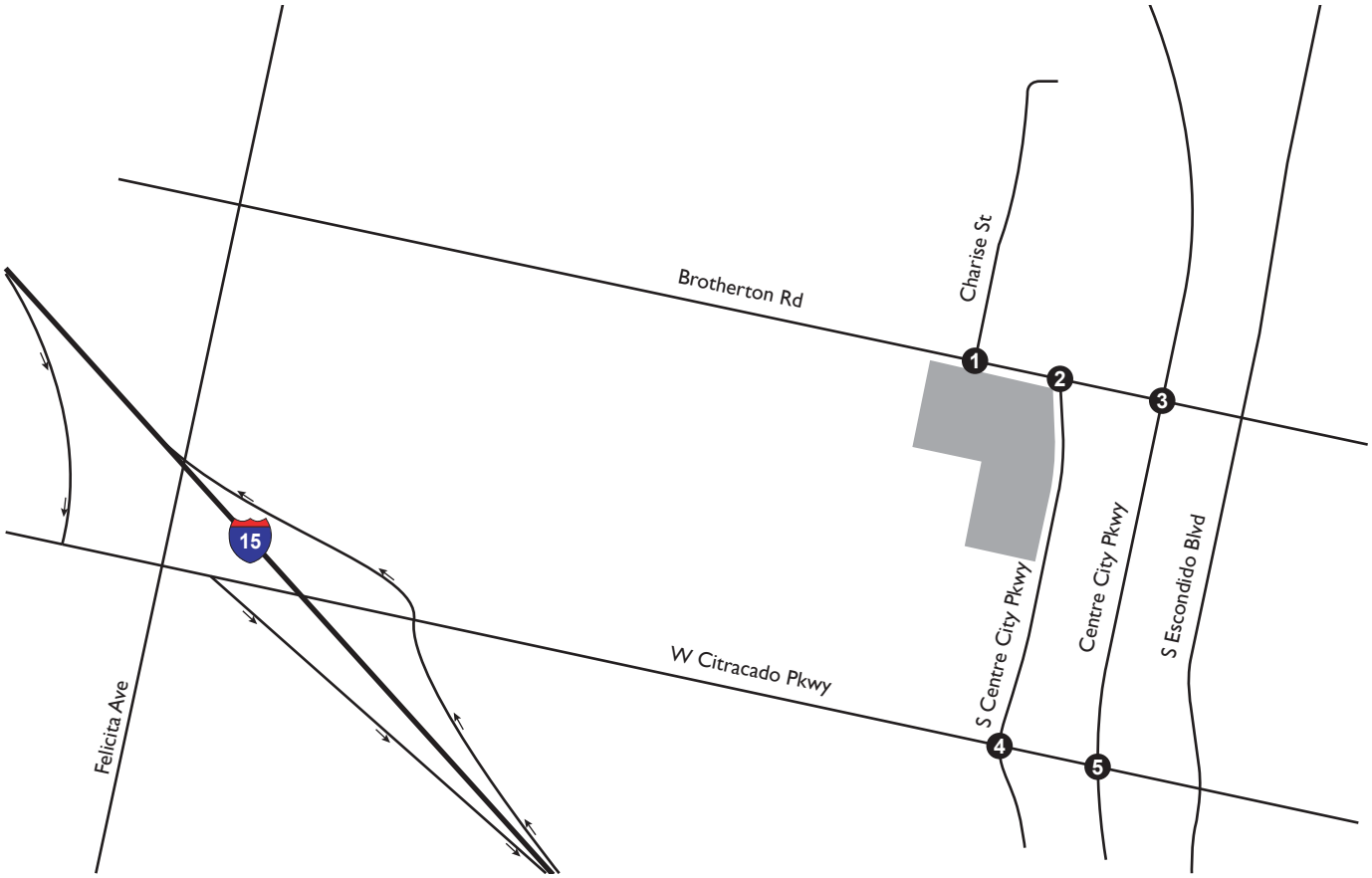

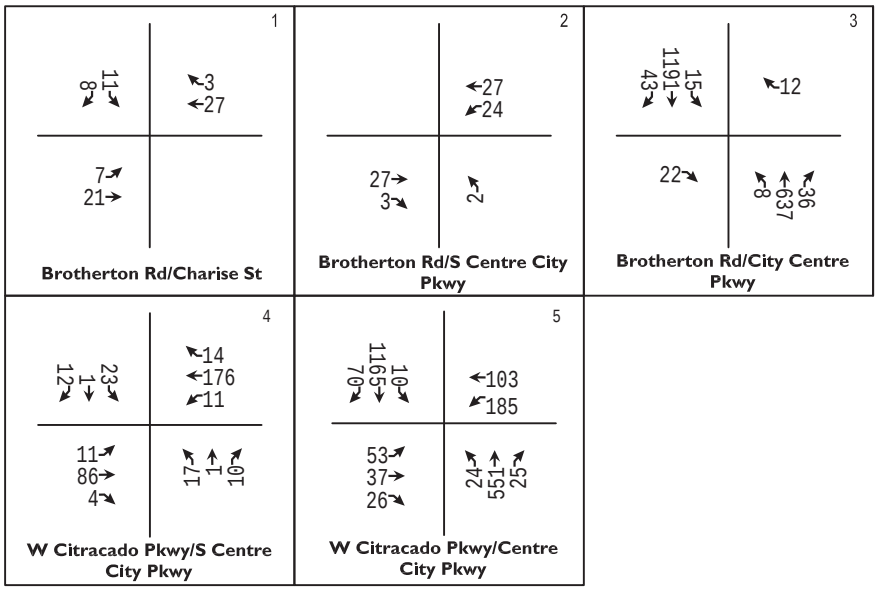

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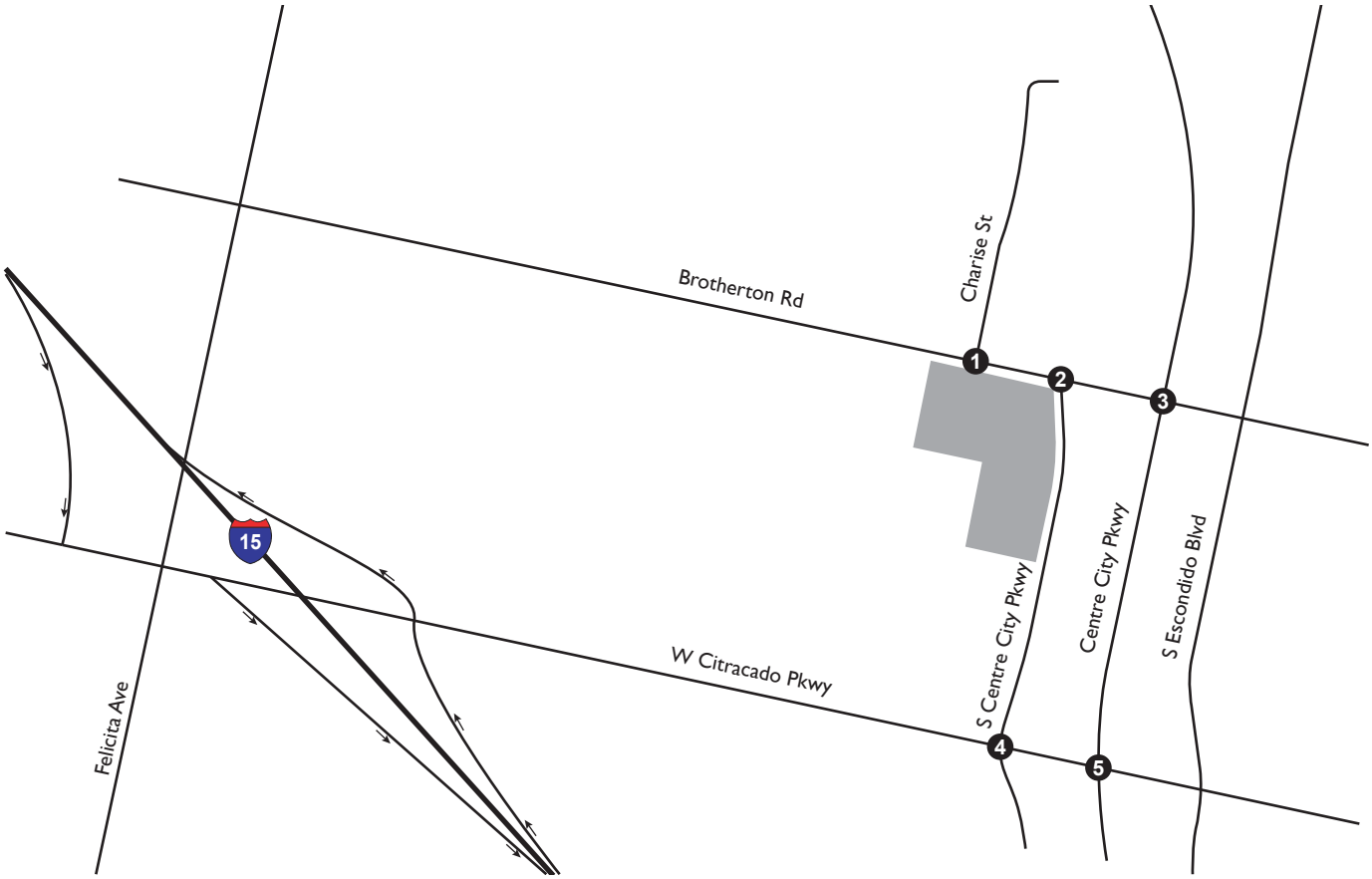

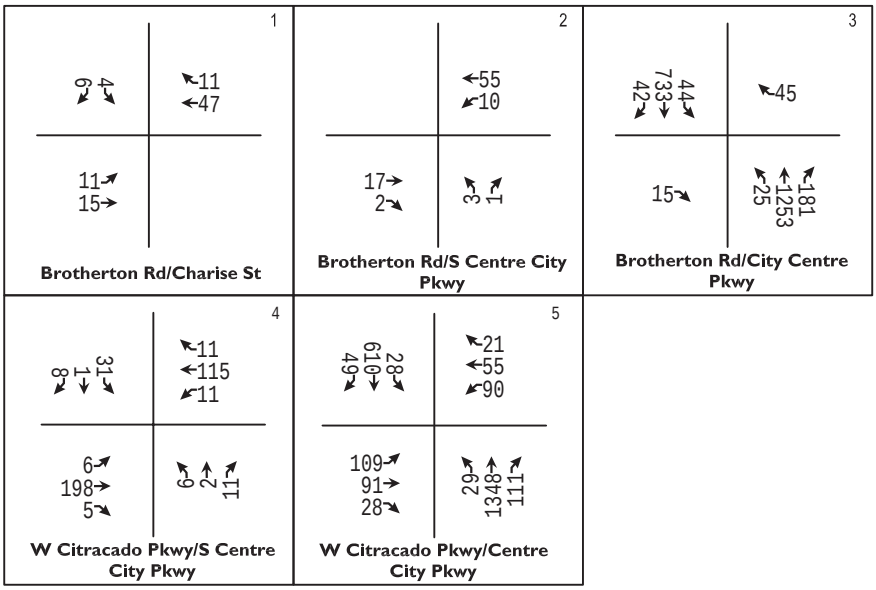

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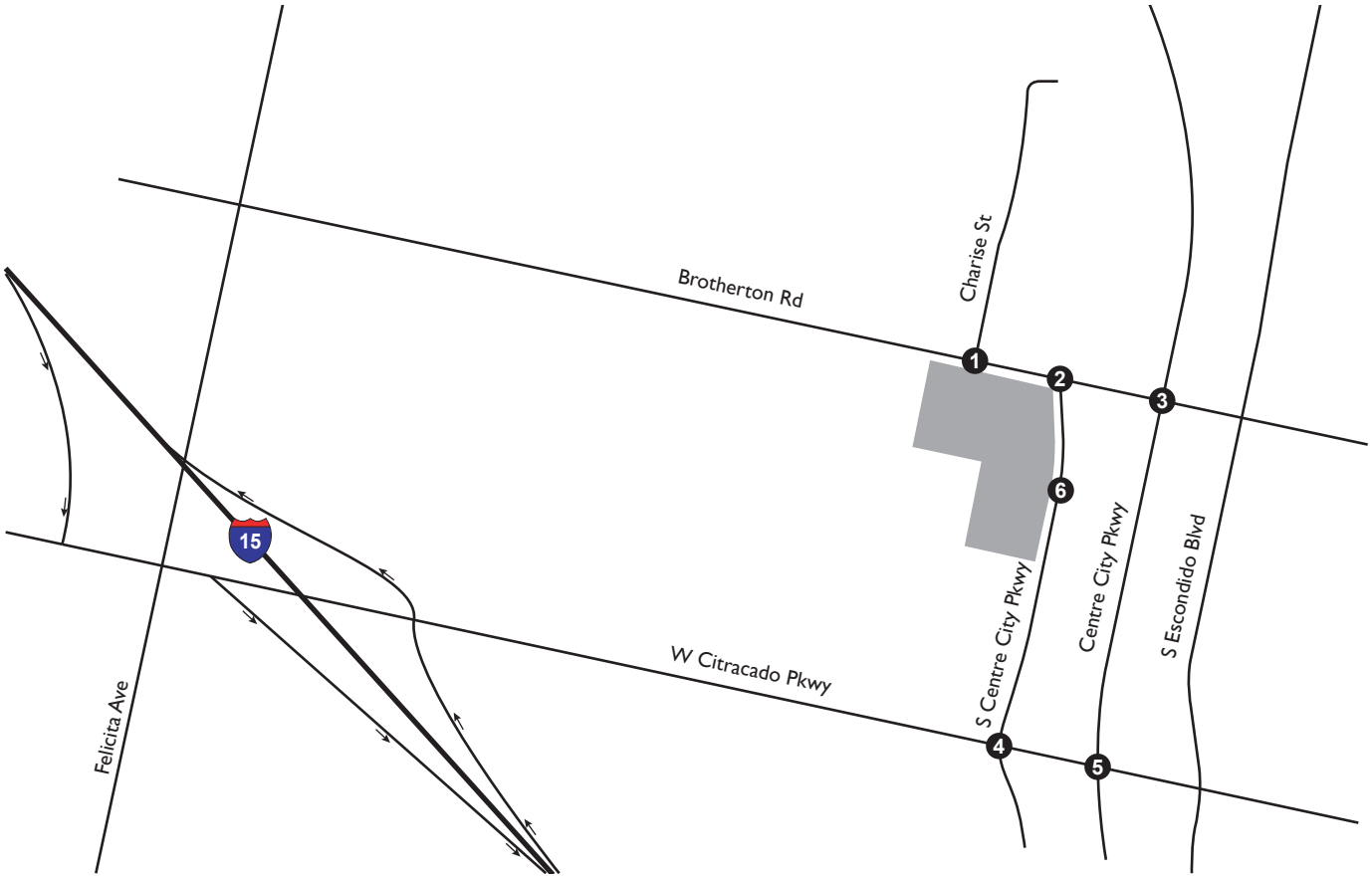

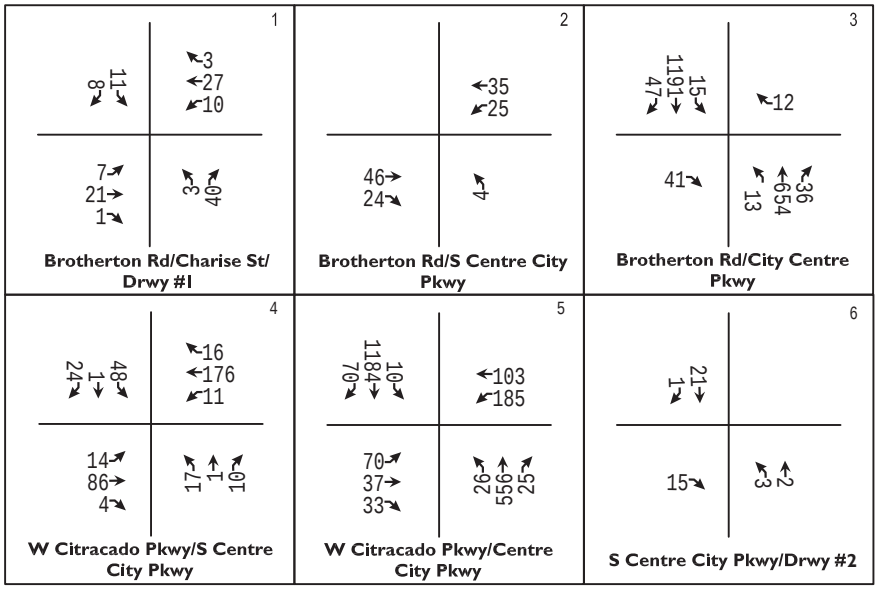

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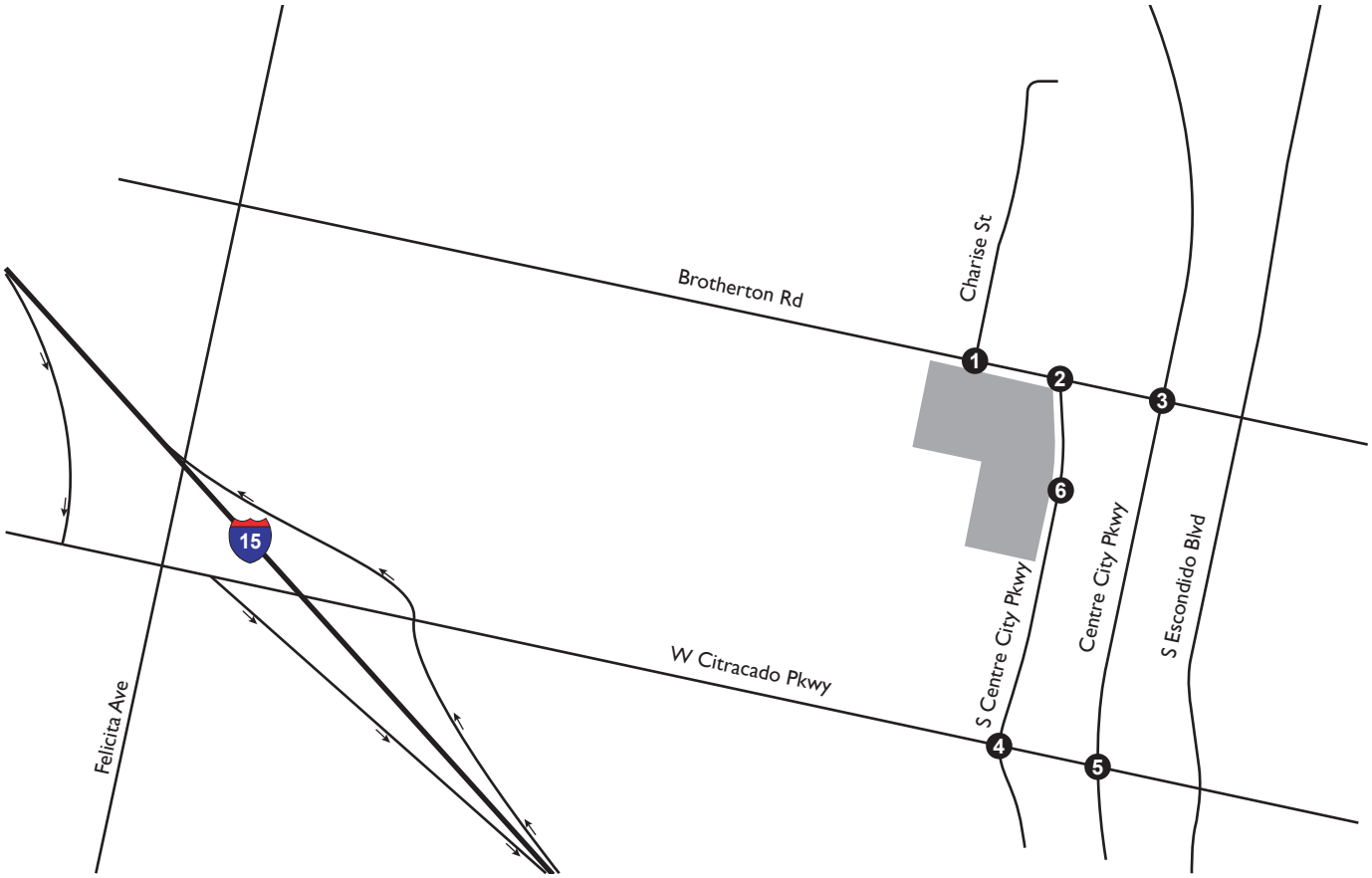

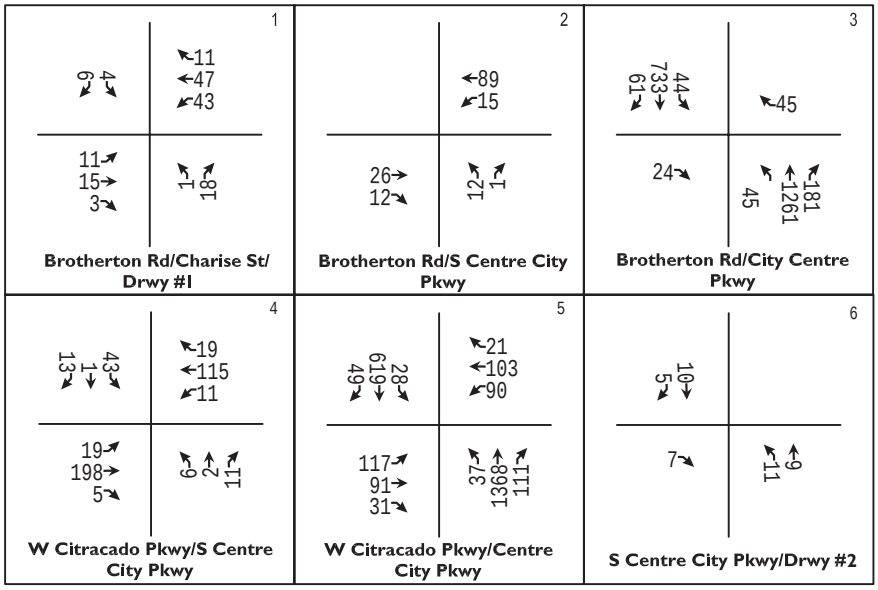

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CHAPTER 4
NEAR-TERM CONDITIONS

Near-term conditions represent opening day of the proposed project. Project traffic is added to the near-term base volumes to create the "with project" scenario.

NEAR-TERM TRAFFIC VOLUMES

Traffic growth on area roadways is a function of the expected land development, economic activity, and changes in demographics. Several methods can be used to estimate this growth. For the analysis of this study, trips from cumulative projects in the vicinity of the project area were added to the project intersections and segments. The cumulative projects were identified and provided by the City. Table 4-1 shows a list of specific cumulative projects and Appendix D contains the source information for the cumulative projects.

NEAR-TERM CIRCULATION NETWORK

No circulation network changes were assumed.

The effect of the proposed project on the study area circulation network was evaluated for the near-term conditions. Table 4-2 and 4-3 summarize the results of this analysis. Figures 4-1 through 4-6 show the near-term roadway segment and intersection without and with the proposed project. Additional details regarding specific intersection operating conditions can be found on the capacity analysis worksheets in Appendix F.

Table 4-1
Cumulative Projects

Project Name	Land Use	Quantity	Units
Oak Creek	Single-Family Detached	65	DU
Talk of the Town	Car Wash Oil Change Restaurant	1 2 4,156	Site Stall SF
Centre City Parkway	Multi-Family Apartments	76	DU
Amanda Lane	Residential - Estate	21	DU

Table 4-2
Near-Term Roadway Segment Conditions

Roadway Segment	Lanes/ Class	LOS E Capacity	Near Term Without Project			Project Traffic	Near Term With Project			Comparison	
			ADT	V/C	LOS		ADT	V/C	LOS	**Δ V/C**	Signi fican t?
S Centre City Pkwy											
From Brotherton Rd to Citracado Pkwy	2LC	10,000	639	0.064	A	430	1,069	0.107	A	0.043	No
Centre City Pkwy											
North of Brotherton Rd	4MA	37,000	24,253	0.655	C	272	24,525	0.663	C	0.007	No
From Brotherton Rd to Citracado Pkwy	4MA	37,000	25,310	0.684	C	428	25,738	0.696	C	0.012	No
South of Citracado Pkwy	4MA	37,000	25,223	0.682	C	406	25,629	0.693	C	0.011	No
Brotherton Rd											
From Charise St to S Centre City Pkwy	2LC	10,000	2,224	0.222	A	618	2,842	0.284	A	0.062	No
From S Centre City Pkwy to Centre City Pkwy	2LC	10,000	1,868	0.187	A	428	2,296	0.230	A	0.043	No
Citracado Pkwy/Gamble Ln											
From S Center City Pkwy To Centre City Pkwy	2LC	10,000	5,448	0.545	C	250	5,698	0.570	C	0.025	No

Abbreviations: 2LC: 2 Local Collector, 3C: 3 Lane Collector, 4C: 4 Lane Collector, 4MA: 4 Lane Major Arterial

Table 4-3
Near-Term Intersection Conditions

Intersection	Near Term - W/O Project		Near Term – W/ Project		Δ Delay	Significant
	Delay	LOS	Delay	LOS		
AM Peak Hour						
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.9	A	9.3	A	0.4	No
2. Brotherton Rd & S. Centre City Pkwy [1]	10.1	B	10.4	B	0.3	No
3. Brotherton Rd & Centre City Pkwy [2]	14.7	B	15.2	C	0.5	No
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	12.1	B	12.7	B	0.6	No
5. W. Citracado Pkwy & Centre City Pkwy [3]	11.3	B	15.0	B	3.7	No
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.5	A	8.5	No
PM Peak Hour						
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.9	A	9.4	A	0.5	No
2. Brotherton Rd & S. Centre City Pkwy [1]	9.8	A	10.5	B	0.7	No
3. Brotherton Rd & Centre City Pkwy [2]	17.2	C	17.2	C	0.0	No
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	13.0	B	13.8	B	0.8	No
5. W. Citracado Pkwy & Centre City Pkwy [3]	10.2	B	14.7	B	4.5	No
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.4	A	8.4	No

[1] Side Street Stop Controlled
[2] All-Way Stop Controlled
[3] Signalized Intersection

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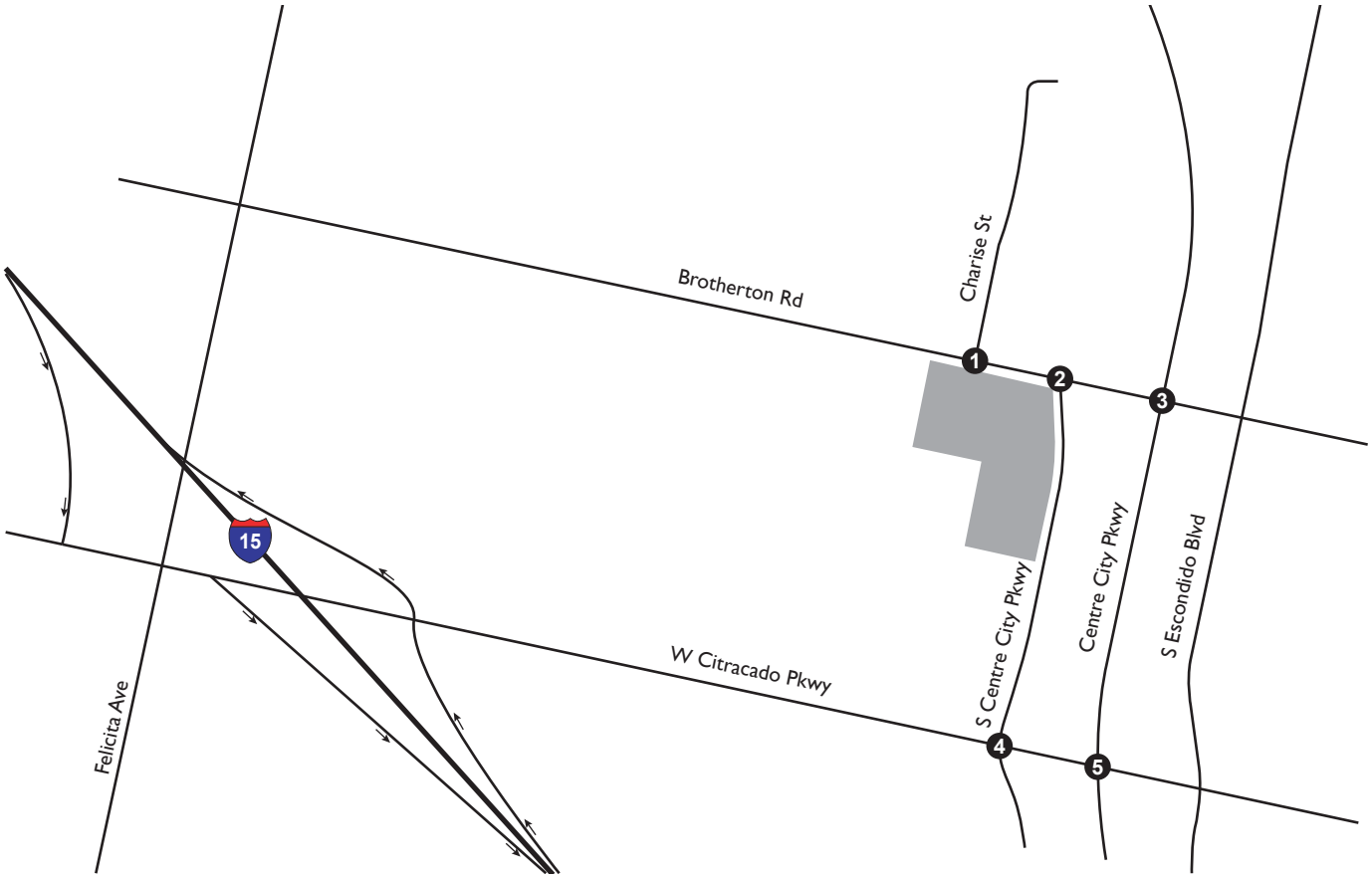

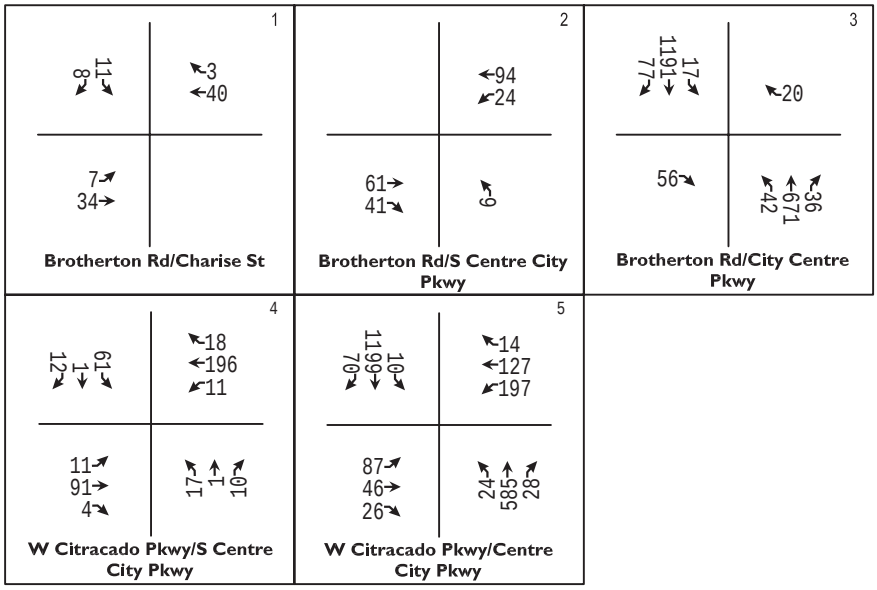

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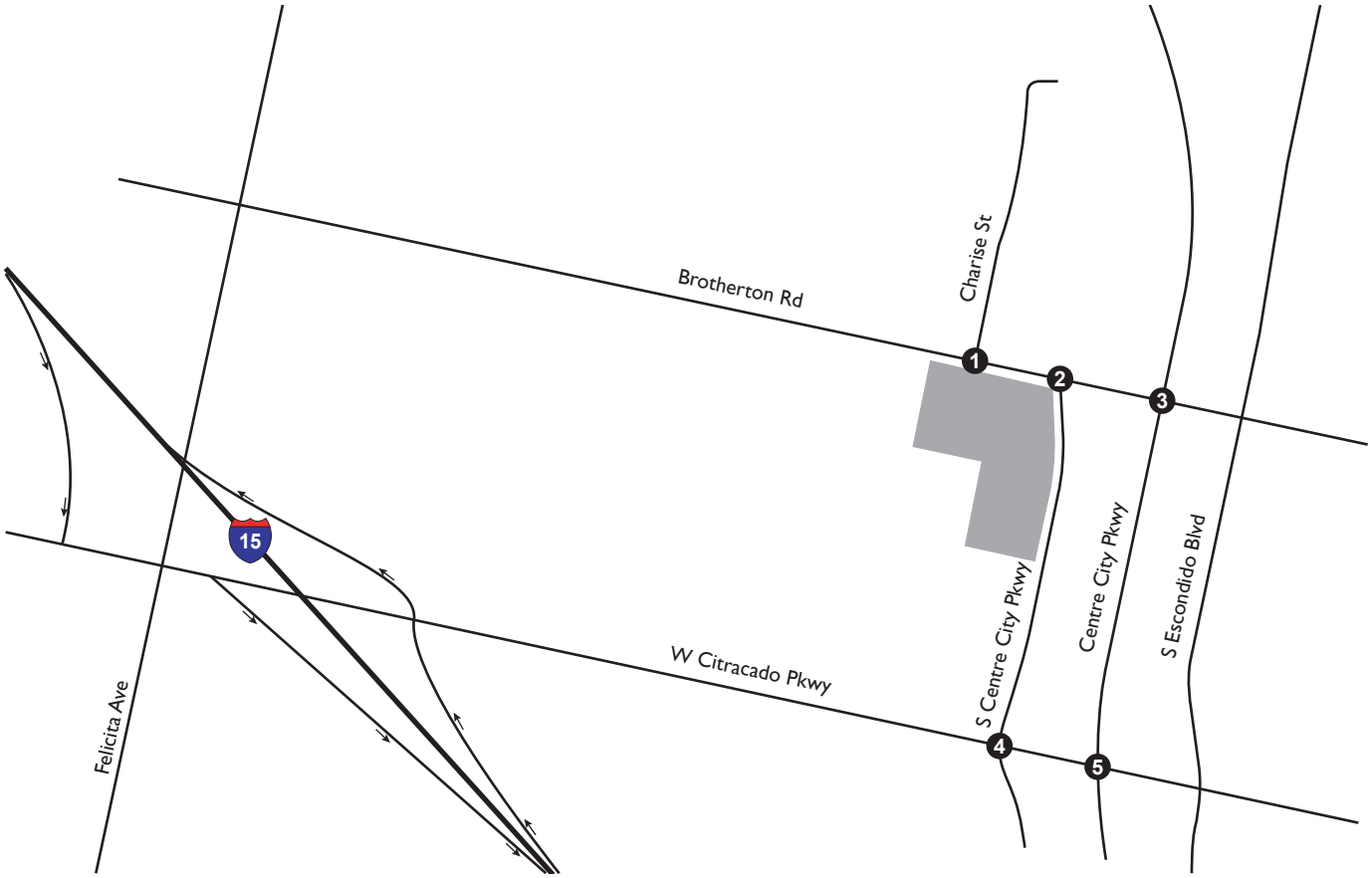
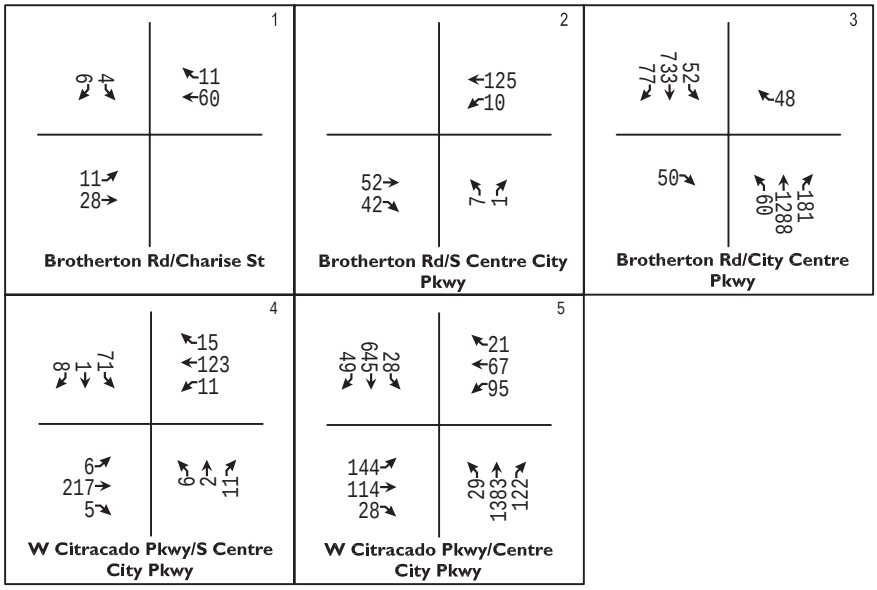
KOA CORPORATION PLANNING & ENGINEERING	Del Prado Escondido, Traffic Impact Study		Figure 4-2
	Escondido, CA	Page 27	Near Term AM Peak Hour Intersection Volumes Without Project





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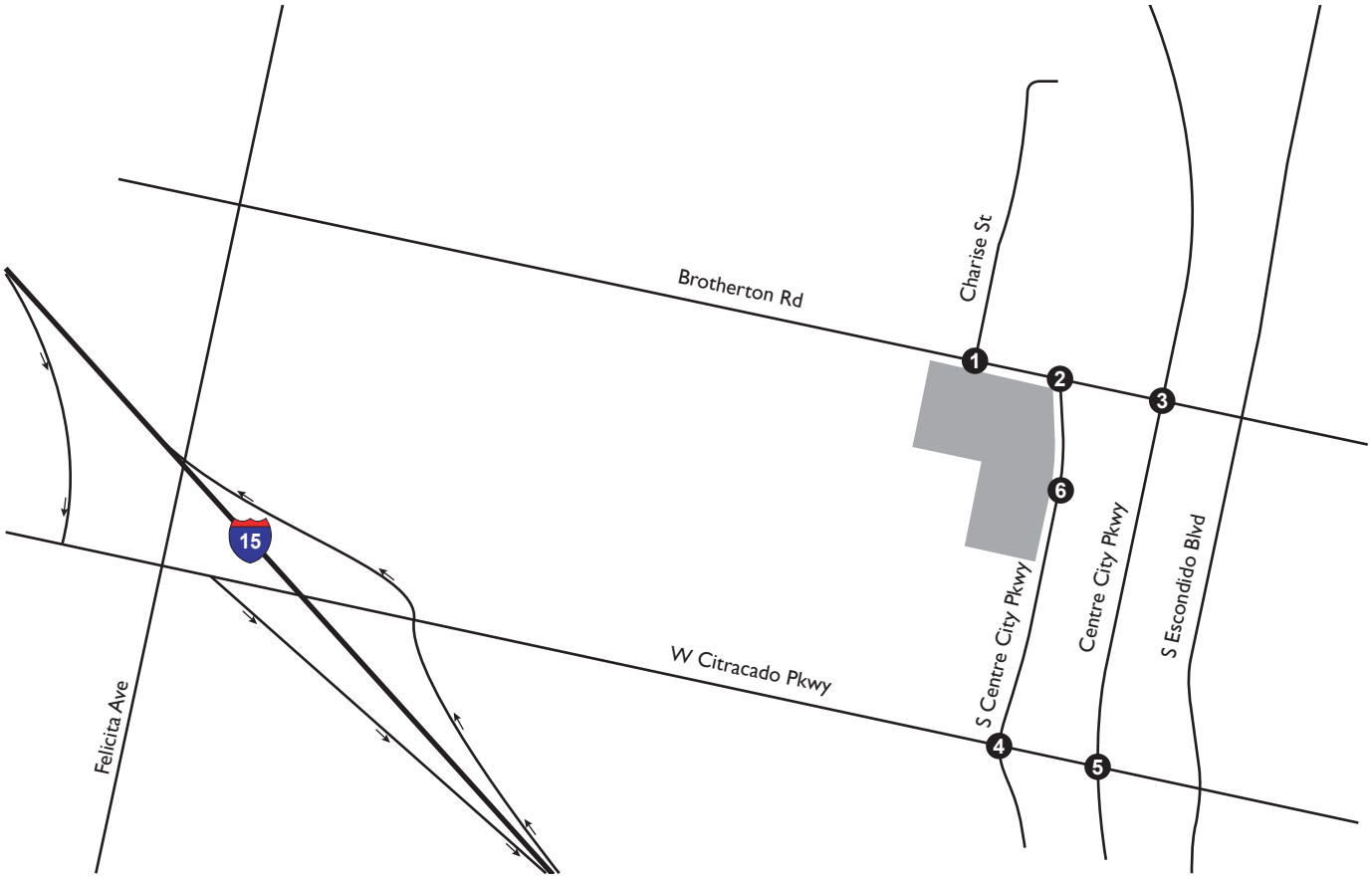

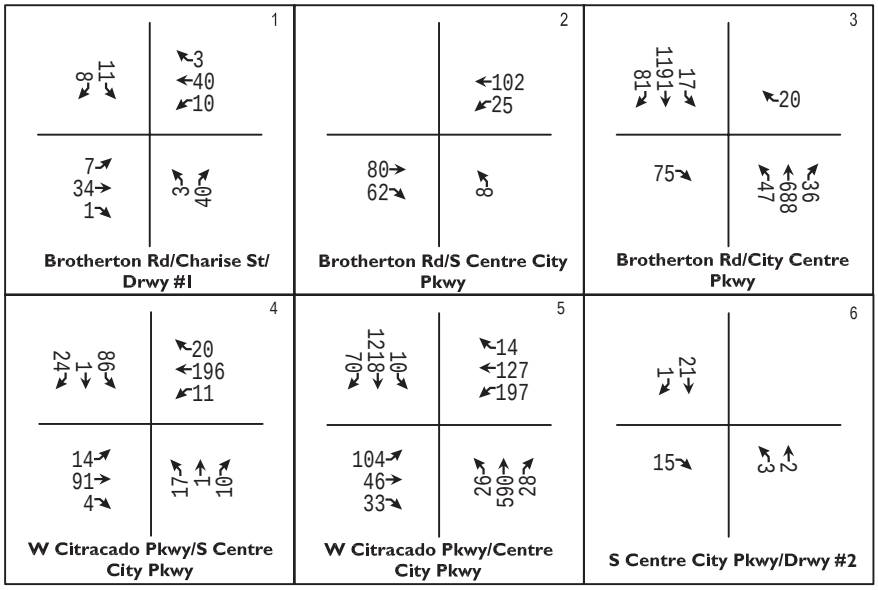

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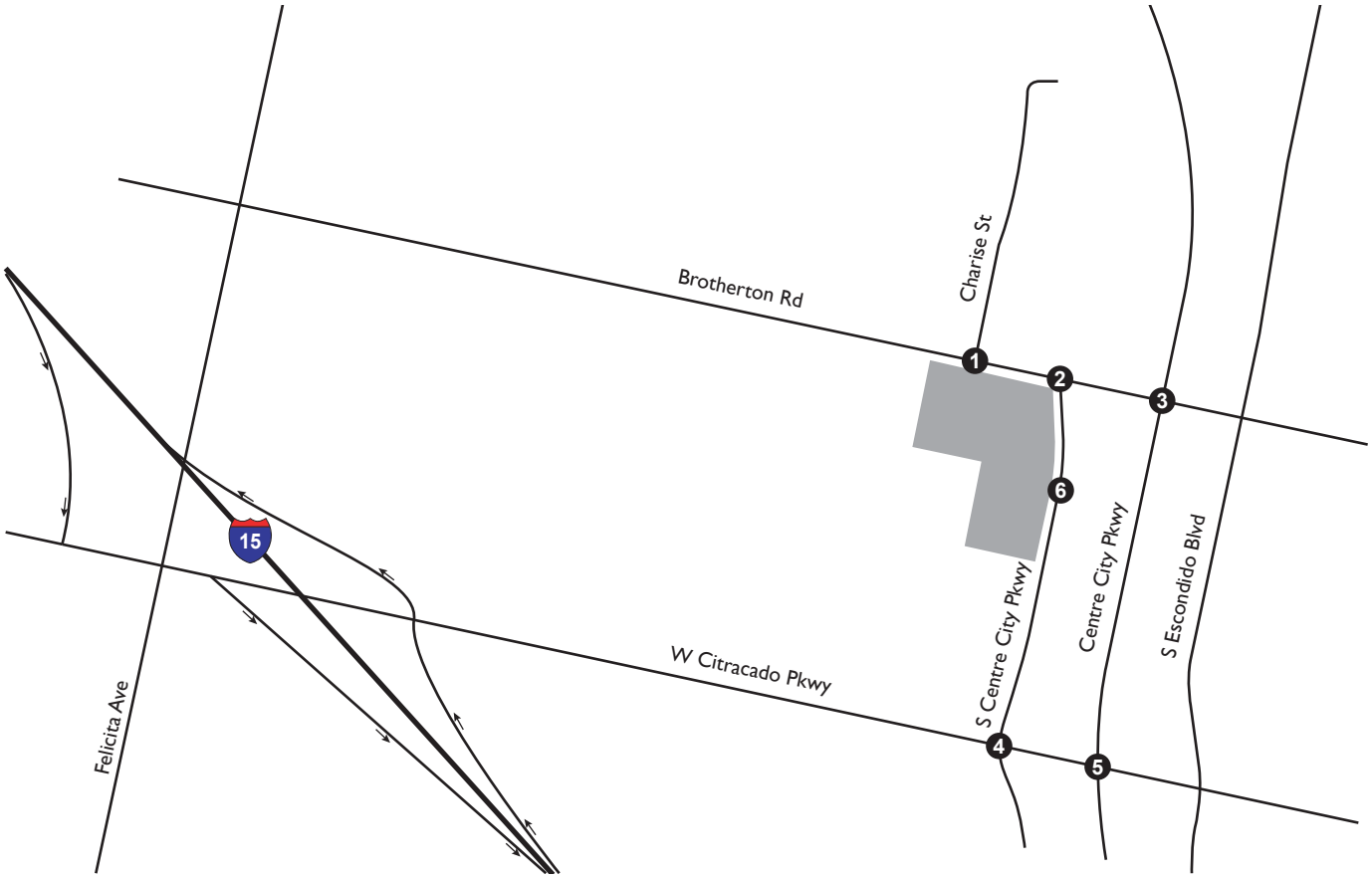

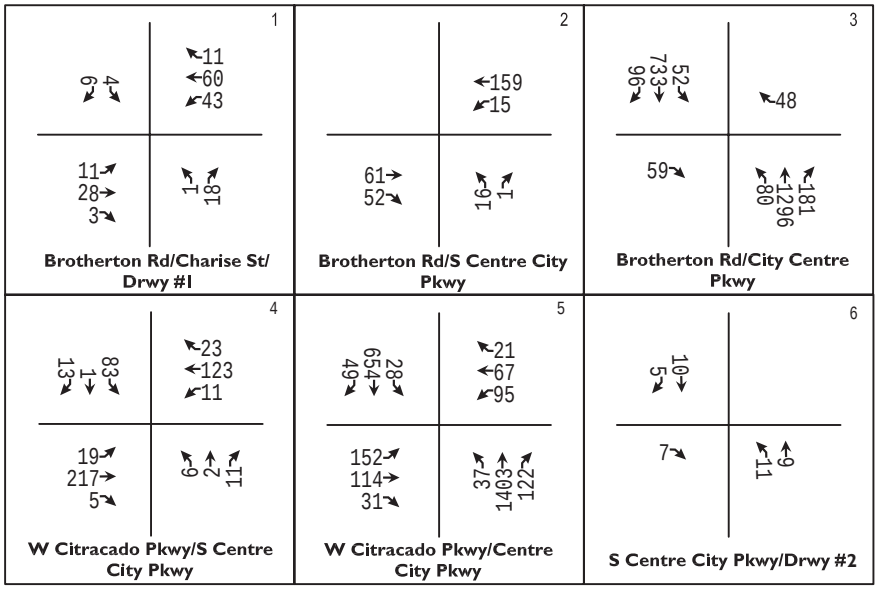

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CHAPTER 5
ON-SITE CIRCULATION, PEDESTRIAN, TRANSIT, BICYCLE AND PARKING

ON-SITE CIRCULATION

The southern part of the project site, which consists of 32 dwelling units, has one driveway access on South Centre City Parkway. The northern part of the project site which consists of 81 dwelling units has one driveway access on Brotherton Road across from Charise Street. Altogether, the project has 113 dwelling units. Both driveways are two way driveways, and the internal streets leading to the driveways have sufficient storage space to hold peak hour traffic demand. The access streets leading to the driveways are connected with each other by internal circulation streets; however the north and south project sites do not have any internal circulation streets connecting them. The layout of the project is designed in such a way that all the dwelling units are conveniently located to access the driveways.

PEDESTRIAN

The project will provide internal walkways that connect the proposed land uses to pedestrian facilities within the public right-of-way. There is currently sidewalk on the west side of South Centre City Parkway adjacent to the project site. Sidewalk on the south side of Brotherton Road, which does not exist currently, will be built per City of Escondido Standards.

TRANSIT

The closest bus stop to the project site is located approximately one mile from the site at the Escondido Boulevard and Sunset Drive intersection. The bus stop is served by bus route 350, operated by the North County Transit District (NCTD), which connects the Del Lago Transit Station and the Escondido Transit Center. The bus has peak-hour headways of 15 minutes during the weekday and 30 minutes headways during the weekend.

The Escondido Transit Center, which is approximately 2.8 miles from the project site, has a park and ride facility. The transit center has transfer opportunities to other buses, Sprinter and Greyhound buses. The transit center has bus and train services that connect to other cities in San Diego County.

BICYCLE

Centre City Parkway has a class II bike path starting from Cranston Drive to the north city limits. There are no other dedicated bike facilities in the project study area.

PARKING

The project proposes parking for all the residents within the structures. Guest parking spaces are also included for guests of residents, per city requirements.

CHAPTER 6
SUMMARY OF ANALYSIS

This chapter summarizes the operations at the study intersections and segments. Table 6-1 shows the summary of roadway segment conditions for each scenario. Table 6-2 shows the summary of intersection conditions for each scenario.

Table 6-1
Summary of Roadway Segment Conditions

Roadway Segment	Existing Without Project		Existing With Project		Near-Term Without Project		Near-Term Without Project	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
S Centre City Pkwy								
From Brotherton Rd to Citracado Pkwy	0.021	A	0.064	A	0.064	A	0.107	A
Centre City Pkwy								
North of Brotherton Rd	0.634	C	0.641	C	0.655	C	0.663	C
From Brotherton Rd to Citracado Pkwy	0.656	C	0.668	C	0.684	C	0.696	C
South of Citracado Pkwy	0.659	C	0.670	C	0.682	C	0.693	C
Brotherton Rd								
From Charise St to S Centre City Pkwy	0.076	A	0.138	A	0.222	A	0.284	A
From S Centre City Pkwy to Centre City Pkwy	0.084	A	0.127	A	0.187	A	0.230	A
Citracado Pkwy/Gamble Ln								
From S Center City Pkwy To Centre City Pkwy	0.476	B	0.501	B	0.545	C	0.570	C

Table 6-2
Summary of Intersection Conditions before Mitigation

Intersection	Existing Conditions		Existing + Project		Near Term - W/O Project		Near Term – W/ Project	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
AM Peak Hour								
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.8	A	9.1	A	8.9	A	9.3	A
2. Brotherton Rd & S. Centre City Pkwy [1]	9.2	A	9.5	A	10.1	B	10.4	B
3. Brotherton Rd & Centre City Pkwy [2]	13.8	B	14.3	B	14.7	B	15.2	C
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	10.9	B	11.4	B	12.1	B	12.7	B
5. W. Citracado Pkwy & Centre City Pkwy [3]	10.1	B	13.7	B	11.3	B	15.0	B
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.5	A			8.5	A
PM Peak Hour								
1. Brotherton Rd & Charise St / Project Driveway # 1 [1]	8.8	A	9.2	A	8.9	A	9.4	A
2. Brotherton Rd & S. Centre City Pkwy [1]	8.9	A	9.5	A	9.8	A	10.5	B
3. Brotherton Rd & Centre City Pkwy [2]	16.7	C	16.8	C	17.2	C	17.2	C
4. W. Citracado Pkwy & S. Centre City Pkwy [1]	11.6	B	12.1	B	13.0	B	13.8	B
5. W. Citracado Pkwy & Centre City Pkwy [3]	9.8	A	14.2	B	10.2	B	14.7	B
6. S. Centre City Pkwy & Project Driveway #2 [1]			8.4	A			8.4	A

[1] Side Street Stop Controlled
[2] All-Way Stop Controlled
[3] Signalized Intersection

CHAPTER 7
RECOMMENDATIONS

Based on the preceding analysis of existing and near-term year traffic conditions for the proposed Del Prado project in the City of Escondido, the project has no impacts that require mitigation.

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