APPENDIX O

CONSTRUCTION TRAFFIC IMPACT ANALYSIS

URBAN SYSTEMS ASSOCIATES, INC.
PLANNING & TRAFFIC ENGINEERING, MARKETING & PROJECT SUPPORT
CONSULTANTS TO INDUSTRY AND GOVERNMENT

E-MEMO

ATTN: *Bob Little – Kilroy Realty*

E-Mail: ▼ *rlittle@kilroyrealty.com*

FROM: *Andrew P. Schlaefli & Jacob D. Swim*

TOTAL PAGES (Including Cover): 5 + (40) Attachments

DATE: *March 5, 2012* *TIME:* *9:22:42 AM* *JOB NUMBER:* *002407*

SUBJECT: ***One Paseo - Construction Traffic Analysis***

INTRODUCTION AND METHODOLOGY:

The purpose of this memo is to discuss the impacts of construction traffic as a result of the proposed One Paseo project. A total of five construction phases were evaluated for traffic impacts which included Phase 1, Phase 2, Phase 3, Phase 1&2, and Phase 1-3. Each construction phase is consistent with the project phasing outlined in the Development Summary, see **Attachment 1**. Phase 1&2 indicates these two phases would be constructed together. Phase 1-3 implies all three construction phases would be combined. Two scenarios were evaluated for each phase: Existing with Construction Traffic and Near Term with Construction Traffic. The existing with construction traffic scenario evaluates the baseline condition with construction traffic by phase. And the Near Term with construction traffic evaluated existing with cumulative projects in the area along with construction traffic by phase. These two scenarios were analyzed based on the assumption the proposed project would begin construction of Phase 1 in 2013, Phase 2 would begin in 2014, and Phase 3 would begin in 2015. Existing with construction traffic by phase and Near Term with construction traffic by phase was analyzed on seven (7) street segments, five (5) intersections, and two (2) freeway segments. The study area for the construction analysis was based on the assumed truck routes exporting and importing materials to the site via Del Mar Heights Road and Interstate 5. The construction phasing, duration of construction, workers, deliveries, and import/export by phase was provided by Whiting-Turner, see attached email dated October 20, 2011. **Attachment 2** shows the proposed employee parking, construction trailers, truck routes and load sites. As shown, trucks would turn right into the site at Third Avenue and then exit at the signalized access at First Avenue.

A distribution of construction traffic for employees is shown on **Attachment 3**. The distribution is based on our experience with similar projects and familiarity with the Carmel Valley area. As shown, 60% of employee traffic is assumed to be coming from the west on Del Mar Heights Road. This assumption is based on the close proximity the I-5 freeway is to the project site. 50% (25% north and 25% south) of the construction employees are assumed to use the I-5 freeway to access the project since there are many residential communities both north and south of the Del Mar Heights Road interchange. Just east of First Avenue at Del Mar Heights Road, 40% of construction employees are assumed to enter/exit the site. Of the 40%, 10% come from the east on Del Mar

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Heights Road, 5% from the north on El Camino Real, and 25% from the south on El Camino Real. These employees are assumed to be already in the Carmel Valley area or nearby surrounding communities.

Attachment 4 illustrates the distribution of truck (import/export) and delivery traffic on a daily basis. Based on our experience with similar construction projects, the haul routes are designed to access nearby material sources (mines). The project site is located in a primarily residential and commercial area where no mines are located. Based on location of nearby mines in the San Diego area, the I-5 would be the most likely route to the project site. As shown in **Attachment 4**, 100% of the truck & delivery traffic is assumed to use Del Mar Heights Road from the west and then 50% travel north and 50% south on Interstate 5. To accommodate trucks leaving the site, a signal is proposed at First Avenue and Del Mar Heights Road for construction access. Without a signal at Third Avenue, a dedicated right turn lane in the eastbound direction would provide trucks and delivery vehicles a deceleration lane to minimize stops and enhance traffic safety during construction along the Del Mar Heights corridor.

To determine Near Term traffic impacts during construction, a percentage of cumulative projects by phase were assumed as shown in **Attachment 5**. The project's trip generation daily traffic was broken down by phase to determine the amount of cumulative projects built by a particular phase. For example, the project development in Phase 1 generates 9,888 average daily trips (ADT) which is approximately 37% of the projects total 26,961 (Project ADT). Therefore, in Phase 1, an assumed 37% of cumulative projects in the area would be constructed and included in the roadway network. For Phase 2, an assumed 66% of cumulative project would be built. Phase 3 assumes 100% of cumulative projects in the area are built.

If construction traffic causes a roadway facility or intersection that operates acceptably to operate unacceptably, then the project has a significant impact. Two criteria must be met to determine a significant impact and before mitigation is proposed. First, the intersection or street segment must have an unacceptable level of service (LOS), i.e. E or F. Second, the amount of construction traffic must be significant based on the application of criteria discussed below and illustrated in Table 4-2 of the traffic study. For an intersection, if the change in delay is greater than 2 seconds or 1 second and the level of service is "E" or "F" respectively, then the intersection construction impacts would be considered significant. For a street segment, if the change in volume to capacity ratio (V/C ratio) exceeds 0.02 or 0.01, and the level of service is "E" or "F" respectively, then the street segment would be considered significantly impacted.

CONSTRUCTION TRAFFIC (PHASE 1):

Attachment 6 shows the trip generation table for traffic generated by employees, material deliveries, and trucks importing and exporting in phase 1. Construction traffic in this phase would generate 1,775 ADT with 130 AM peak hour trips and 118 PM peak hour trips. The material deliveries and truck imports/exports are converted from trucks to autos using an auto equivalency of 2.5 per Exhibit 21-9 in the Highway Capacity Manual 2000.

Existing With Construction Traffic (Phase 1):

The Existing with construction traffic in phase 1 was evaluated. **Attachment 7** shows the Existing with and without construction street segment comparison in phase 1. As shown, all segments operate at acceptable levels of service, i.e. D or better. **Attachment 8** shows the Existing with and without construction intersection comparison in phase 1. Five (5) intersections were evaluated on Del Mar Heights Road from the I-5 SB ramps to El Camino Real. As shown in the table, all intersections operate at acceptable levels of service and no

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significant impacts occur as a result of construction traffic in phase 1. The freeway segments north and south of Del Mar Heights Road on Interstate 5 were evaluated and operate at acceptable levels of service as shown in the freeway level of service summary table, see **Attachment 9**. As shown, no impacts occur as a result of construction traffic in phase 1.

Near Term With Construction Traffic (Phase 1):

The Near Term without construction traffic volumes in phase 1 were developed by assuming 37% of cumulative projects were built. Construction traffic volumes in phase 1 were then added to Near Term volumes to derive the Near Term with construction traffic volumes and evaluate construction traffic impacts. The Near Term street segment comparison table shows no significant impacts, see **Attachment 10**. For intersection impacts, **Attachment 11** shows all intersections are projected to operate at acceptable levels of service with and without construction traffic in phase 1, therefore, no significant impacts. On the I-5 freeway segments analyzed, **Attachment 12** shows no significant impacts as a result of construction traffic in phase 1.

CONSTRUCTION TRAFFIC (PHASE 2):

The construction traffic in phase 2 generates 1,265 ADT with 84 AM peak hour trips and 77 PM peak hour trips, see **Attachment 13**.

Existing With Construction Traffic (Phase 2):

Street segment volumes for construction traffic in phase 2 were added to existing traffic volumes and evaluated. As shown in **Attachment 14**, all segments evaluated operate at level of service "D" or better. Intersections were analyzed and there are no significant impacts as a result of construction traffic in phase 2, see **Attachment 15**. The intersection of Del Mar Heights Road at Third Avenue is analyzed based on construction of Block A being part of phase 2. A freeway level of service summary shows both segments on I-5 operate at acceptable levels of service and there are no significant impacts as shown in **Attachment 16**.

Near Term With Construction Traffic (Phase 2):

The Near Term with construction traffic volumes were developed by adding the Near Term volumes (Existing + 66% of cumulative projects) to the construction traffic volumes in phase 2. The street segment level of service comparison shows no significant street segment impacts, see **Attachment 17**. The intersection comparison table shows all intersections operating at acceptable levels of service and therefore, no significant impacts as shown in **Attachment 18**. The freeway segments on I-5 are operating at acceptable levels of service with no significant impacts, see **Attachment 19**.

CONSTRUCTION TRAFFIC (PHASE 3):

The construction traffic in phase 3 generates 1,369 ADT with 93 AM peak hour trips and 86 PM peak hour trips, see **Attachment 20**.

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Existing With Construction Traffic (Phase 3):

The Existing with construction traffic in phase 3 was derived by adding construction traffic volumes in phase 3 to existing volumes. All street segments in **Attachment 21** currently operate at acceptable levels of service with and without construction traffic in phase 3. **Attachment 22** shows all intersections operating at acceptable levels of service and no significant impacts. The two segments on I-5 in phase 3 of construction operate at acceptable levels of service and show no significant impacts in **Attachment 23**.

Near Term With Construction Traffic (Phase 3):

The Near Term without construction traffic volumes in phase 3 assumed 100% of cumulative projects in the area were built. Construction traffic volumes from phase 3 were added to Near Term without construction traffic volumes to get the Near Term with construction traffic volumes. **Attachment 24** shows all street segments operate at level of service "D" or better. As shown on **Attachment 25**, there are no significant impacts at intersections as a result of construction traffic in phase 3. Freeway segments are operating at acceptable levels of service as shown in **Attachment 26**.

CONSTRUCTION TRAFFIC (PHASE 1 & 2):

As previously mentioned, construction traffic in phase 1 & 2 assumes these phases are built together. Phase 1 & 2 includes the construction of Blocks D, E, and A as shown in the Development Summary Table (**Attachment 1**). Since the construction of Block A is adjacent to the First Avenue entrance, it is assumed in this analysis that a signal is installed at First Avenue for construction access under this phasing scenario. **Attachment 27** shows the trip generation table for construction phase 1 & 2. As shown, the construction traffic would generate 1,975 ADT with 138 AM peak hour trips and 126 PM peak hour trips.

Existing With Construction Traffic (Phase 1 & 2):

The existing with and without construction traffic street segment comparison table for phase 1 & 2 shows no unacceptable level of service on any street segments, therefore, no significant segment impacts, see **Attachment 28**. **Attachment 29** shows the intersection comparison table for construction phase 1 & 2. As shown, there are no significant impacts to intersections evaluated. Freeway segments operate at acceptable levels of service, see **Attachment 30**.

Near Term With Construction Traffic (Phase 1 & 2):

The Near Term without construction traffic volumes in phase 1 & 2 were developed by assuming 66% of cumulative projects were built. The Near Term street segment comparison table shows all segments operate at level of service "D" or better, and therefore, no significant impacts, see **Attachment 31**. For intersection impacts, **Attachment 32** shows all intersections are projected to operate at acceptable levels of service, i.e. D or better, with and without construction traffic in phase 1 & 2, therefore, no significant impacts. On the I-5 freeway segments analyzed, **Attachment 33** shows no significant impacts as a result of construction traffic in phase 1 & 2.

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CONSTRUCTION TRAFFIC (PHASE 1 - 3):

Construction traffic in phases 1-3 assumes all three phases are built together, not sequentially. This phasing assumes the intersection of First Avenue and Del Mar Heights Road is signalized for construction access. The construction traffic in phases 1-3 generates 2,175 ADT with 146 AM peak hour trips and 134 PM peak hour trips, see **Attachment 34**.

Existing With Construction Traffic (Phase 1 - 3):

Attachment 35 shows no significant impacts in the street segment comparison table. No significant intersection impacts occur in phases 1-3 as a result of construction traffic, see **Attachment 36**. On the I-5 freeway segments, **Attachment 37** shows no significant impacts.

Near Term With Construction Traffic (Phase 1 - 3):

The Near Term analysis for construction traffic in phases 1-3 assumes 100% cumulative projects are built and included in the roadway network. A significant impact occurs on Del Mar Heights Road between I-5 NB ramps and High Bluff Drive in the street segment comparison table as shown in **Attachment 38**. All intersections are projected to operate at acceptable levels of service in **Attachment 39**. **Attachment 40** shows no significant impacts to freeway segments as a result of construction traffic from all three construction phases.

CONCLUSIONS AND RECOMMENDATIONS:

The only construction traffic significant impact is a segment impact on Del Mar Heights Road between the I-5 NB ramps and High Bluff Drive. This significant impact on Del Mar Heights Road occurs under the analyzed construction (Phase 1-3) scenario. A significant impact resulting from project construction traffic only occurs if the additional trips cause the segment to exceed the City's significance thresholds and the segments operates at an unacceptable level of service.

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ATTACHMENT 1

ONE PASEO – A Main Street for Carmel Valley
DEVELOPMENT SUMMARY

Phase/Block	Commercial Retail (Sq. Ft.*)		Commercial Office (Sq. Ft.*)		Hotel (No. of Rooms)	Residential (MF Units)	Total*
	Retail	Cinema **	Corporate Office	Professional Office***			
Phase 1							
Block D	61,190	---	270,000	21,000	---	---	352,190
Block E	39,460	---	245,000	---	---	---	284,460
Phase 1 Total	*100,650*	---	*515,000*	*21,000*	---	---	*636,650*
Phase 2							
Block A	65,610	---	---	---	---	194	65,610 + 194 MF units
Phase 2 Total	*65,610*	---	---	---		*194*	*65,610 + 194 MF units*
Phase 3							
Block B	38,940	---	---	---	150	181	38,940 + 150 hotel rooms + 181 MF units
Block C	14,800	---	---	---		233	14,800 + 233 MF units
Block D	---	50,000	---	---	---		50,000
Phase 3 Total	*53,740*	*50,000*	---	---	---	*414*	*103,740 + 418 MF units*
Total*	220,000	50,000	515,000	21,000	150	608	806,000 Sq. Ft + 150 hotel rooms + 608 MF units

*Gross Leasable Area (excludes parking structures covered in Gross Floor Area calculations). Density transfers permitted in accordance with procedures described in the Precise Plan.
**Cinema consists of up to 10 screens with a maximum total of 1,200 seats.
***Professional Office (located on Main Street).

Jake Swim

From: Likins, Steven [Steven.Likins@Whiting-Turner.com]
Sent: Thursday, October 20, 2011 10:17 AM
To: jake@urbansystems.net
Subject: Construction Analysis

Jake –

Per your June 24, 2011 memo, please see our responses below.

- Construction Phases - The project is divided into three phases
- Construction Duration by Phase - Phase 1 (28 months), Phase II (22 months) & Phase III (31 months). The project would take a total of 81 months to build, if phases are built sequentially. If Phase I and II were combined, it would also take 28 months. If all phases were combined, it would take 40 months to complete.
- Number of Workers by Phase - Whiting-Turner estimated that a project built sequentially would likely have a maximum of 400 employees per day and generally average approximately 300 employees per day. If Phase I and II were combined, they would likely have a maximum of 700 employees per day and generally average approximately 400 employees per day. If all phases were combined, they would likely have a maximum of 800 employees and generally average approximately 500 employees per day.
- Number of Material Deliveries by Phase - On average, the project would result in 25 deliveries per day. The peak would occur during export operation, but during the export operation there won't be many workers on the site.
- Amount of Import & Export by Phase - Phase I-243,670 cu. yds., Phase II - 118,800 cu. yds. and Phase III - 141,500 cu.yds. Each truck trip can accommodate 10 cu. yds. per trip. As an example, Phase 1 export (i.e. trucks on the street) is 110 days (22 weeks x5 days) or roughly 210 round trips per day (24,260 trips / 110 days). Assuming a round trip is about 20 minutes (depends on distance to export site) there would be about 9-10 trucks running round trips for 110 work days (i.e, Mon-Fri). If you combine Phases I and II, that would add another 9-10 trucks for about 60 days. And, if all three phases are combined, Phase 3 export would occur after phase 1 and 2 so we'd still be doing 210 trips per day (420 for 55 of those while doing phase 2) but we'd be adding 55 days of export.
- Construction Hours - Monday-Friday (The Municipal Code allows from 7:00 AM-7:00 PM but these hours may be further restricted by the site development permit) .
- Construction Shifts, if any - None anticipated
- Written Description of construction activities by phase - Each phase is basically the same; shoring, excavation, site utilities, below grade parking garage, vertical steel, concrete or woof structural frame, glass, plaster, metal panel or stone exterior enclosure, HVAC, Plumbing, Electrical, interior drywall and finishes (floor finishes, ceilings, walls, doors) exterior hardscape and landscape

Please advise if you have any questions.

Thanks

Steve Likins I Vice President
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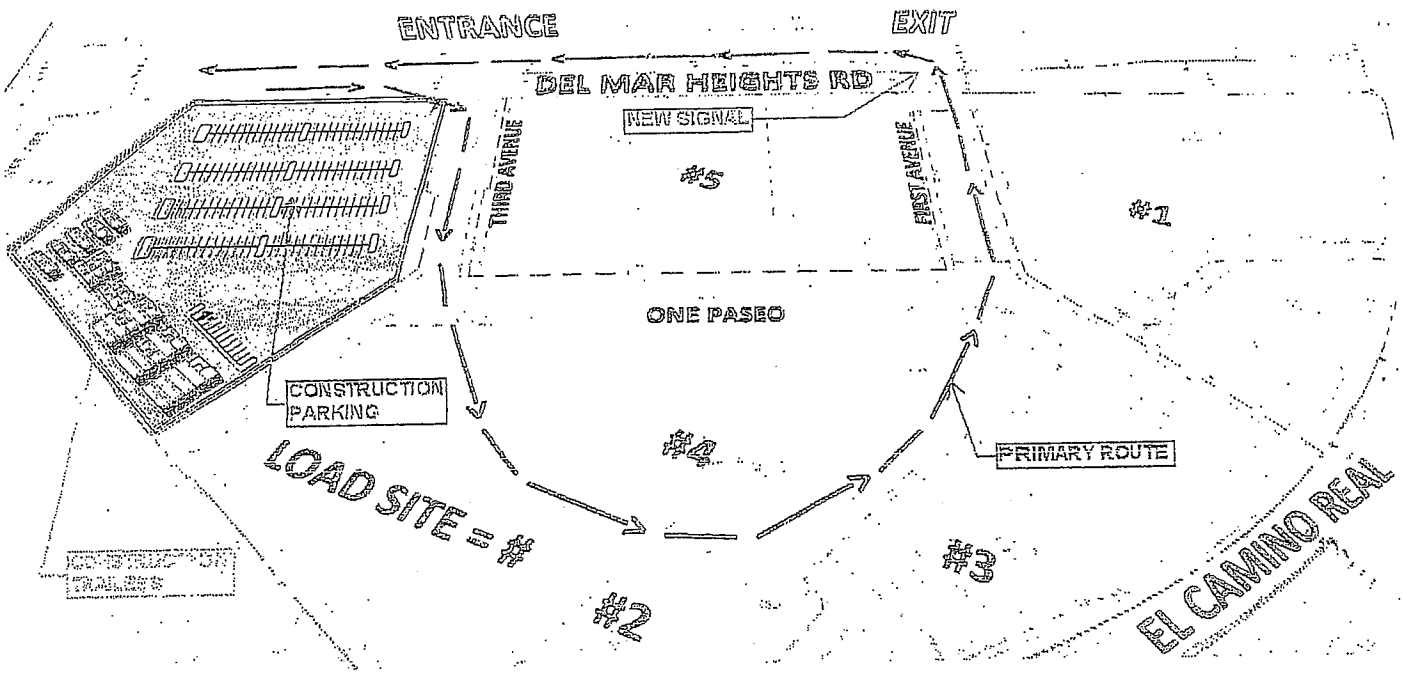
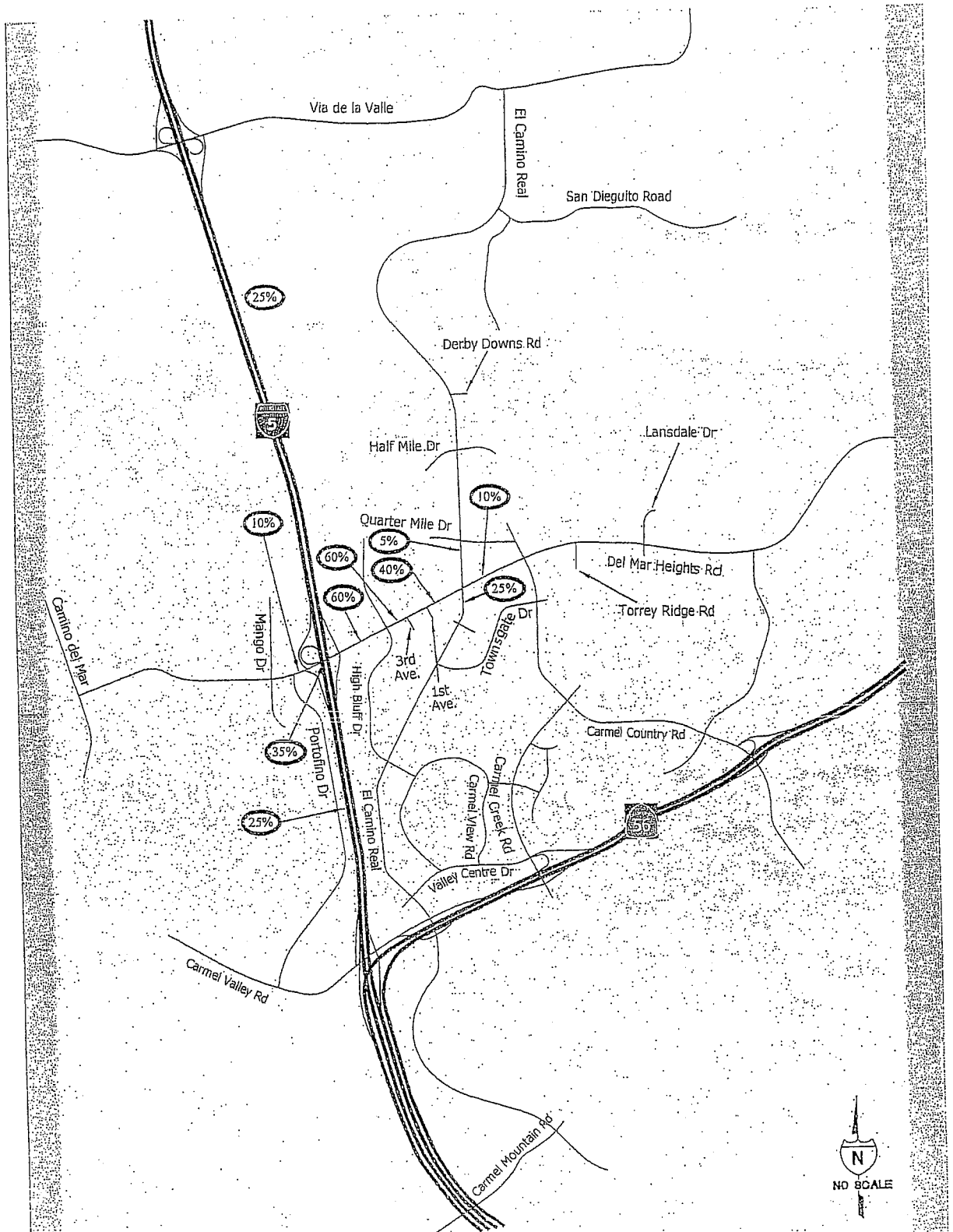
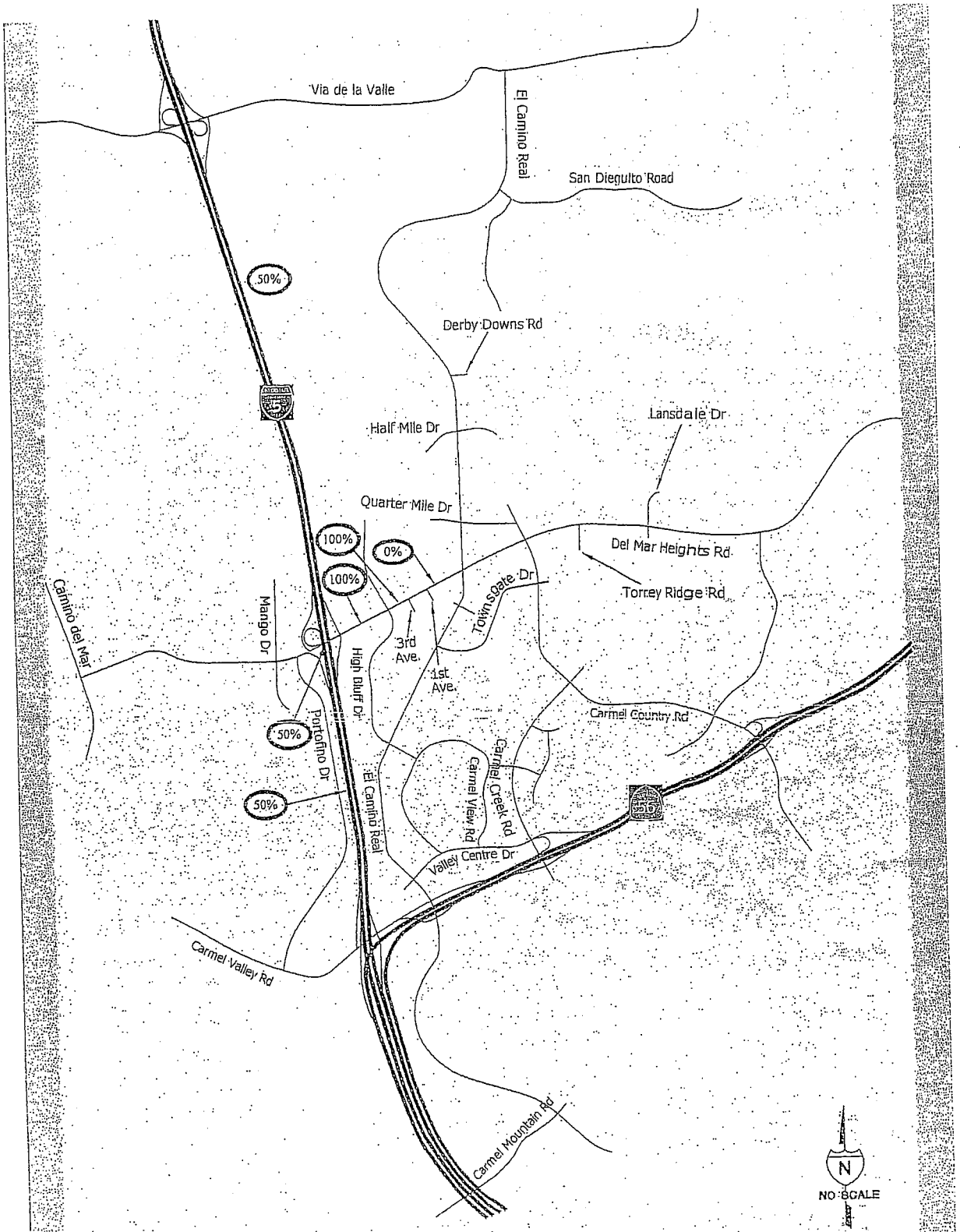
ATTACHMENT 2





ATTACHMENT 3

Employee Construction Traffic Distribution Percentages



ATTACHMENT 4

Truck & Delivery Construction Traffic Distribution Percentages

Attachment 5

One Paseo Construction Analysis

Construction Phases	Construction Duration	Project's Trip Generation ADT by phase	Percentage of ADT by phase	Assumed Percentage of Cumulative Projects
Phase 1	28 months	9,888 ADT	37%	37%
Phase 2	22 months	17,812 ADT	66%	66%
Phase 3	31 months	26,961 ADT	100%	100%
Phase 1 & 2	28 months	17,812 ADT	66%	66%
Phase 1-3	40 months	26,961 ADT	100%	100%

Source: Whiting-Turner

ATTACHMENT 6
One Paseo Trip Generation Table
Construction Traffic

PHASE 1

Purpose	Number	Auto Equivalency	Equivalent Autos	Trip	ADT	AM Peak Hour					PM Peak Hour				
						%*	#	In : Out	In	Out	%*	#	In : Out	In	Out
Employees	300 Autos	N/A	300	2 /Auto	600	4%	24	9 : 1	22	2	4%	24	2 : 8	5	19
Material Deliveries	25 Trucks	2.5	62.5	2 /Auto	125	9%	11	4 : 6	5	7	8%	10	5 : 5	5	5
Truck Imports/Exports	210 Trucks	2.5	525	2 /Auto	1,050	9%	95	4 : 6	38	57	8%	84	5 : 5	42	42
TOTAL					1,775		130		64	66		118		52	66

Notes:

Passenger-Car equivalents for Trucks is 2.5 per Exhibit 21-9 in the Highway Capacity Manual 2000
Typical Work Hours 7AM to 3:30PM.
For Employee Peak Hour In/Out Ratios, a 4% AM and PM peak is assumed based on the AM peak counts beginning at 7:30AM and the majority of employee shifts ending at 3:30PM, which is prior to the PM peak counts beginning at 5:00PM.
For Material Deliveries and Truck Imports/Exports, the Truck Terminal land use peak hour splits were used based on the City of San Diego Trip Generation Manual, May 2003.

ATTACHMENT 7

Existing Without & Existing With Construction (Phase 1)
Street Segment Comparison

Road	Segment	Class.	Existing			Existing + Construction (Phase 1)			ΔV/C	Is this impact Significant?
			LOS	Volume	V/C	LOS	Volume	V/C		
Del Mar Heights Rd.	I-5 Southbound Ramps and I-5 Northbound Ramps	5-PA	D	40,090	0.802	D	40,888	0.818	0.016	*NO*
	I-5 Northbound Ramps to High Bluff Drive	PA	D	51,625	0.860	D	53,160	0.886	0.026	*NO*
	High Bluff Drive to First Avenue	PA	C	37,910	0.632	C	39,445	0.657	0.026	*NO*
	First Avenue to El Camino Real	PA	C	37,910	0.632	C	38,150	0.636	0.004	*NO*
	El Camino Real to Carmel Country Road	PA	B	32,674	0.545	B	32,734	0.546	0.001	*NO*
El Camino Real	Quarter Mile Drive to Del Mar Heights Road	4-M	A	14,925	0.373	A	14,955	0.374	0.001	*NO*
	Del Mar Heights Road to Townsgate Drive	6-M	A	14,731	0.295	A	14,881	0.298	0.003	*NO*

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

PA = 6 lane Primary Arterial

5-PA = 5 lane Primary Arterial with LOS E capacity of 50,000 ADT

4-M=4 lane Major

6-M = 6 lane Major

ATTACHMENT 8

Existing & Existing + Construction Traffic (Phase 1) Intersection Summary

#	Intersection	Existing				Existing + Construction Traffic (Phase 1)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	Del Mar Heights Road / I-5 SB Ramps	22.5	C	20.3	C	22.7	C	0.2	No	21.0	C	0.7	No
2	Del Mar Heights Road / I-5 NB Ramps	35.1	D	37.5	D	35.2	D	0.1	No	37.8	D	0.3	No
3	Del Mar Heights Road / High Bluff Drive	26.1	C	28.9	C	26.8	C	0.7	No	29.9	C	1.0	No
4	Del Mar Heights Road / First Avenue	DNE	DNE	DNE	DNE	3.4	A	N/A	No	4.7	A	N/A	No
5	Del Mar Heights Road / El Camino Real	27.2	C	26.9	C	28.0	C	0.8	No	27.1	C	0.2	No

Notes:

LOS = Level of Service

Δ = Change

S = Significant

D= Delay

DNE = Does Not Exist

N/A = Not Applicable

ATTACHMENT 9

Existing With & Without Construction Traffic (Phase 1)

Freeway Level of Service Summary

Segment	Dir.	Existing		Existing + Construction (Phase 1)		Δ	Sig.?
		V/C	LOS	V/C	LOS		
I-5							
Via De La Valle/Del Mar Heights Rd.	NB	0.6447	C	0.6453	C	0.0006	NO
Via De La Valle/Del Mar Heights Rd.	SB	0.6655	C	0.6661	C	0.0006	NO
Del Mar Heights Rd./ SR-56	NB	0.5565	B	0.5570	B	0.0005	NO
Del Mar Heights Rd./ SR-56	SB	0.5744	B	0.5749	B	0.0005	NO

Legend:

Dir.= Direction
V/C= Volume to Capacity Ratio
LOS= Level of Service
Sig.?= Is this significant?

ATTACHMENT 10

Near Term With & Without Construction (Phase 1)
Street Segment Comparison

Road	Segment	Class.	Near Term			Near Term + Construction (Phase 1)			ΔV/C	Is this impact Significant?
			LOS	Volume	V/C	LOS	Volume	V/C		
Del Mar Heights Rd.	I-5 Southbound Ramps and I-5 Northbound Ramps	5-PA	D	40,090	0.802	D	40,888	0.818	0.016	*NO*
	I-5 Northbound Ramps to High Bluff Drive	PA	D	52,217	0.870	D	53,752	0.896	0.026	*NO*
	High Bluff Drive to First Avenue	PA	C	38,502	0.642	C	40,037	0.667	0.026	*NO*
	First Avenue to El Camino Real	PA	C	38,502	0.642	C	38,742	0.646	0.004	*NO*
	El Camino Real to Carmel Country Road	PA	B	32,674	0.545	B	32,734	0.546	0.001	*NO*
El Camino Real	Quarter Mile Drive to Del Mar Heights Road	4-M	A	14,925	0.373	A	14,955	0.374	0.001	*NO*
	Del Mar Heights Road to Townsgate Drive	6-M	A	15,412	0.308	A	15,562	0.311	0.003	*NO*

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

PA = 6 lane Primary Arterial

5-PA = 5 lane Primary Arterial with LOS E capacity of 50,000 ADT

4-M=4 lane Major

6-M = 6 lane Major

ATTACHMENT 11

Near Term With & Without Construction Traffic Intersection Summary
Phase 1

#	Intersection	Near Term				Near Term + Construction Traffic (Phase 1)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	Del Mar Heights Road / I-5 SB Ramps	21	C	21.7	C	23.2	C	2.2	N	22.0	C	0.3	N
2	Del Mar Heights Road / I-5 NB Ramps	34.6	C	36.7	D	35.5	D	0.9	N	37.6	D	0.9	N
3	Del Mar Heights Road / High Bluff Drive	28.1	C	31.4	C	29	C	0.9	N	31.6	C	0.2	N
4	Del Mar Heights Road / First Avenue	DNE	DNE	DNE	DNE	3.5	A	0.0	N	4.9	A	0.0	N
5	Del Mar Heights Road / El Camino Real	27.7	C	27.9	C	28.2	C	0.5	N	28.5	C	0.6	N

Notes:

LOS = Level of Service

Δ = Change

S = Significant

D= Delay

ATTACHMENT 12

Near Term With & Without Construction Traffic

Freeway Level of Service Summary
Phase 1

Segment	Dir.	Near Term		Near Term + Construction (Phase 1)		Δ	Sig.?
		V/C	LOS	V/C	LOS		
I-5							
Via De La Valle/Del Mar Heights Rd.	NB	0.6460	C	0.6466	C	0.0006	NO
Via De La Valle/Del Mar Heights Rd.	SB	0.6667	C	0.6674	C	0.0006	NO
Del Mar Heights Rd./ SR-56	NB	0.5576	B	0.5581	B	0.0005	NO
Del Mar Heights Rd./ SR-56	SB	0.5755	B	0.5761	B	0.0005	NO

Legend:

Dir.= Direction
V/C= Volume to Capacity Ratio
LOS= Level of Service
Sig.?= Is this significant?

ATTACHMENT 13
One Paseo Trip Generation Table
Construction Traffic

PHASE 2

Purpose	Number	Auto Equivalency	Equivalent Autos	Trip	ADT	AM Peak Hour					PM Peak Hour				
						%*	#	In : Out	In	Out	%*	#	In : Out	In	Out
Employees	300 Autos	N/A	300	2 /Auto	600	4%	24	9 : 1	22	2	4%	24	2 : 8	5	19
Material Deliveries	25 Trucks	2.5	62.5	2 /Auto	125	9%	11	4 : 6	5	7	8%	10	5 : 5	5	5
Truck Imports/Exports	108 Trucks	2.5	270	2 /Auto	540	9%	49	4 : 6	19	29	8%	43	5 : 5	22	22
TOTAL					1,265		84		46	38		77		31	46

Notes:

Passenger-Car equivalents for Trucks is 2.5 per Exhibit 21-9 in the Highway Capacity Manual 2000
Typical Work Hours 7AM to 3:30PM.
For Employee Peak Hour In/Out Ratios, a 4% AM and PM peak is assumed based on the AM peak counts beginning at 7:30AM and the majority of employee shifts ending at 3:30PM, which is prior to the PM peak counts beginning at 5:00PM.
For Material Deliveries and Truck Imports/Exports, the Truck Terminal land use peak hour splits were used based on the City of San Diego Trip Generation Manual, May 2003.

ATTACHMENT 14

Existing Without & Existing With Construction (Phase 2)
Street Segment Comparison

Road	Segment	Class.	Existing			Existing + Construction (Phase 2)			ΔV/C	Is this impact Significant?
			LOS	Volume	V/C	LOS	Volume	V/C		
Del Mar Heights Rd.	I-5 Southbound Ramps and I-5 Northbound Ramps	5-PA	D	40,090	0.802	D	40,633	0.813	0.011	*NO*
	I-5 Northbound Ramps to High Bluff Drive	PA	D	51,625	0.860	D	52,650	0.878	0.017	*NO*
	High Bluff Drive to First Avenue	PA	C	37,910	0.632	C	38,935	0.649	0.017	*NO*
	First Avenue to El Camino Real	PA	C	37,910	0.632	C	38,150	0.636	0.004	*NO*
	El Camino Real to Carmel Country Road	PA	B	32,674	0.545	B	32,734	0.546	0.001	*NO*
El Camino Real	Quarter Mile Drive to Del Mar Heights Road	4-M	A	14,925	0.373	A	14,955	0.374	0.001	*NO*
	Del Mar Heights Road to Townsgate Drive	6-M	A	14,731	0.295	A	14,881	0.298	0.003	*NO*

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

PA = 6 lane Primary Arterial

5-PA = 5 lane Primary Arterial with LOS E capacity of 50,000 ADT

4-M=4 lane Major

6-M = 6 lane Major

ATTACHMENT 15

Existing & Existing + Construction Traffic (Phase 2) Intersection Summary

#	Intersection	Existing				Existing + Construction Traffic (Phase 2)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	Del Mar Heights Road / I-5 SB Ramps	22.5	C	20.3	C	22.7	C	0.2	No	20.9	C	0.6	No
2	Del Mar Heights Road / I-5 NB Ramps	35.1	D	37.5	D	35.2	D	0.1	No	37.6	D	0.1	No
3	Del Mar Heights Road / High Bluff Drive	26.1	C	28.9	C	26.5	C	0.4	No	29.9	C	1.0	No
4	Del Mar Heights Road / Third Avenue	DNE	DNE	DNE	DNE	3	A	N/A	No	3.9	A	N/A	No
5	Del Mar Heights Road / El Camino Real	27.2	C	26.9	C	27.5	C	0.3	No	27.0	C	0.1	No

Notes:

LOS = Level of Service

Δ = Change

S = Significant

D= Delay

DNE = Does Not Exist

N/A = Not Applicable

ATTACHMENT 16

Existing With & Without Construction Traffic (Phase 2)

Freeway Level of Service Summary

Segment	Dir.	Existing		Existing + Construction (Phase 2)		Δ	Sig.?
		V/C	LOS	V/C	LOS		
I-5							
Via De La Valle/Del Mar Heights Rd.	NB	0.6447	C	0.6452	C	0.0004	NO
Via De La Valle/Del Mar Heights Rd.	SB	0.6655	C	0.6660	C	0.0004	NO
Del Mar Heights Rd./ SR-56	NB	0.5565	B	0.5568	B	0.0004	NO
Del Mar Heights Rd./ SR-56	SB	0.5744	B	0.5748	B	0.0004	NO

Legend:

Dir.= Direction
V/C= Volume to Capacity Ratio
LOS= Level of Service
Sig.?= Is this significant?

ATTACHMENT 17

Near Term With & Without Construction (Phase 2)
Street Segment Comparison

Road	Segment	Class.	Near Term			Near Term + Construction (Phase 2)			ΔV/C	Is this impact Significant?
			LOS	Volume	V/C	LOS	Volume	V/C		
Del Mar Heights Rd.	I-5 Southbound Ramps and I-5 Northbound Ramps	5-PA	D	40,090	0.802	D	40,633	0.813	0.011	*NO*
	I-5 Northbound Ramps to High Bluff Drive	PA	D	52,682	0.878	D	53,707	0.895	0.017	*NO*
	High Bluff Drive to First Avenue	PA	C	38,967	0.649	C	39,992	0.667	0.017	*NO*
	First Avenue to El Camino Real	PA	C	38,967	0.649	C	39,207	0.653	0.004	*NO*
	El Camino Real to Carmel Country Road	PA	B	32,674	0.545	B	32,734	0.546	0.001	*NO*
El Camino Real	Quarter Mile Drive to Del Mar Heights Road	4-M	A	14,925	0.373	A	14,955	0.374	0.001	*NO*
	Del Mar Heights Road to Townsgate Drive	6-M	A	15,946	0.319	A	16,096	0.322	0.003	*NO*

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

PA = 6 lane Primary Arterial

5-PA = 5 lane Primary Arterial with LOS E capacity of 50,000 ADT

4-M=4 lane Major

6-M = 6 lane Major

ATTACHMENT 18

Near Term With & Without Construction Traffic Intersection Summary
Phase 2

#	Intersection	Near Term				Near Term + Construction Traffic (Phase 2)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	Del Mar Heights Road / I-5 SB Ramps	21.2	C	21.9	C	23.6	C	2.4	N	22.1	C	0.2	N
2	Del Mar Heights Road / I-5 NB Ramps	36.8	D	37.6	D	37.5	D	0.7	N	38.0	D	0.4	N
3	Del Mar Heights Road / High Bluff Drive	28.2	C	31.6	C	28.8	C	0.6	N	31.8	C	0.2	N
4	Del Mar Heights Road / Third Avenue	DNE	DNE	DNE	DNE	3.3	A	0.0	N	4.0	A	0.0	N
5	Del Mar Heights Road / El Camino Real	27.9	C	30.8	C	28.3	C	0.4	N	31.4	C	0.6	N

Notes:

LOS = Level of Service

Δ = Change

S = Significant

D= Delay

DNE = Does not Exist

ATTACHMENT 19

Near Term With & Without Construction Traffic

Freeway Level of Service Summary
Phase 2

Segment	Dir.	Near Term		Near Term + Construction (Phase 2)		Δ	Sig.?
		V/C	LOS	V/C	LOS		
I-5							
Via De La Valle/Del Mar Heights Rd.	NB	0.6469	C	0.6474	C	0.0004	NO
Via De La Valle/Del Mar Heights Rd.	SB	0.6677	C	0.6681	C	0.0004	NO
Del Mar Heights Rd./ SR-56	NB	0.5585	B	0.5589	B	0.0004	NO
Del Mar Heights Rd./ SR-56	SB	0.5764	B	0.5768	B	0.0004	NO

Legend:

Dir.= Direction
V/C= Volume to Capacity Ratio
LOS= Level of Service
Sig.?= Is this significant?

ATTACHMENT 20
One Paseo Trip Generation Table
Construction Traffic

PHASE 3

Purpose	Number	Auto Equivalency	Equivalent Autos	Trip	ADT	AM Peak Hour					PM Peak Hour					
						%	#	In : Out	In	Out	%	#	In : Out	In	Out
Employees	300 Autos	N/A	300	2 /Auto	600	4%	24	9 : 1	22	2	4%	24	2 : 8	5	19
Material Deliveries	25 Trucks	2.5	62.5	2 /Auto	125	9%	11	4 : 6	5	7	8%	10	5 : 5	5	5
Truck Imports/Exports	129 Trucks	2.5	322	2 /Auto	644	9%	58	4 : 6	23	35	8%	52	5 : 5	26	26
TOTAL					1,369		93		49	44		86		36	50

Notes:

Passenger-Car equivalents for Trucks is 2.5 per Exhibit 21-9 in the Highway Capacity Manual 2000
Typical Work Hours 7AM to 3:30PM.
For Employee Peak Hour In/Out Ratios, a 4% AM and PM peak is assumed based on the AM peak counts beginning at 7:30AM and the majority of employee shifts ending at 3:30PM, which is prior to the PM peak counts beginning at 5:00PM.
For Material Deliveries and Truck Imports/Exports, the Truck Terminal land use peak hour splits were used based on the City of San Diego Trip Generation Manual, May 2003.

ATTACHMENT 21

Existing Without & Existing With Construction (Phase 3)
Street Segment Comparison

Road	Segment	Class.	Existing			Existing + Construction (Phase 3)			ΔV/C	Is this impact Significant?
			LOS	Volume	V/C	LOS	Volume	V/C		
Del Mar Heights Rd.	I-5 Southbound Ramps and I-5 Northbound Ramps	5-PA	D	40,090	0.802	D	40,684	0.814	0.012	*NO*
	I-5 Northbound Ramps to High Bluff Drive	PA	D	51,625	0.860	D	52,754	0.879	0.019	*NO*
	High Bluff Drive to First Avenue	PA	C	37,910	0.632	C	39,039	0.651	0.019	*NO*
	First Avenue to El Camino Real	PA	C	37,910	0.632	C	38,150	0.636	0.004	*NO*
	El Camino Real to Carmel Country Road	PA	B	32,674	0.545	B	32,734	0.546	0.001	*NO*
El Camino Real	Quarter Mile Drive to Del Mar Heights Road	4-M	A	14,925	0.373	A	14,955	0.374	0.001	*NO*
	Del Mar Heights Road to Townsgate Drive	6-M	A	14,731	0.295	A	14,881	0.298	0.003	*NO*

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

PA = 6 lane Primary Arterial

5-PA = 5 lane Primary Arterial with LOS E capacity of 50,000 ADT

4-M=4 lane Major

6-M = 6 lane Major

ATTACHMENT 22

Existing & Existing + Construction Traffic (Phase 3) Intersection Summary

#	Intersection	Existing				Existing + Construction Traffic (Phase 3)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	Del Mar Heights Road / I-5 SB Ramps	22.5	C	20.3	C	22.8	C	0.3	No	20.9	C	0.6	No
2	Del Mar Heights Road / I-5 NB Ramps	35.1	D	37.5	D	35.3	D	0.2	No	37.9	D	0.4	No
3	Del Mar Heights Road / High Bluff Drive	26.1	C	28.9	C	26.6	C	0.5	No	29.9	C	1.0	No
4	Del Mar Heights Road / First Avenue	DNE	DNE	DNE	DNE	3.0	A	N/A	No	4.4	A	N/A	No
5	Del Mar Heights Road / El Camino Real	27.2	C	26.9	C	27.8	C	0.6	No	27.0	C	0.1	No

Notes:

LOS = Level of Service

Δ = Change

S = Significant

D= Delay

DNE = Does Not Exist

N/A = Not Applicable

ATTACHMENT 23

Existing With & Without Construction Traffic (Phase 3)

Freeway Level of Service Summary

Segment	Dir.	Existing		Existing + Construction (Phase 3)		Δ	Sig.?
		V/C	LOS	V/C	LOS		
I-5							
Via De La Valle/Del Mar Heights Rd.	NB	0.6447	C	0.6452	C	0.0005	NO
Via De La Valle/Del Mar Heights Rd.	SB	0.6655	C	0.6660	C	0.0005	NO
Del Mar Heights Rd./ SR-56	NB	0.5565	B	0.5569	B	0.0004	NO
Del Mar Heights Rd./ SR-56	SB	0.5744	B	0.5748	B	0.0004	NO

Legend:

Dir.= Direction
V/C= Volume to Capacity Ratio
LOS= Level of Service
Sig.?= Is this significant?

ATTACHMENT 24

Near Term With & Without Construction (Phase 3)
Street Segment Comparison

Road	Segment	Class.	Near Term			Near Term + Construction (Phase 3)			ΔV/C	Is this impact Significant?
			LOS	Volume	V/C	LOS	Volume	V/C		
Del Mar Heights Rd.	I-5 Southbound Ramps and I-5 Northbound Ramps	5-PA	D	40,090	0.802	D	40,684	0.814	0.012	*NO*
	I-5 Northbound Ramps to High Bluff Drive	PA	D	53,226	0.887	D	54,355	0.906	0.019	*NO*
	High Bluff Drive to First Avenue	PA	C	39,511	0.659	C	40,640	0.677	0.019	*NO*
	First Avenue to El Camino Real	PA	C	39,511	0.659	C	39,751	0.663	0.004	*NO*
	El Camino Real to Carmel Country Road	PA	B	32,674	0.545	B	32,734	0.546	0.001	*NO*
El Camino Real	Quarter Mile Drive to Del Mar Heights Road	4-M	A	14,925	0.373	A	14,955	0.374	0.001	*NO*
	Del Mar Heights Road to Townsgate Drive	6-M	A	16,572	0.331	A	16,722	0.334	0.003	*NO*

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

PA = 6 lane Primary Arterial

5-PA = 5 lane Primary Arterial with LOS E capacity of 50,000 ADT

4-M=4 lane Major

6-M = 6 lane Major

ATTACHMENT 25

Near Term With & Without Construction Traffic Intersection Summary
Phase 3

#	Intersection	Near Term				Near Term + Construction Traffic (Phase 3)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	Del Mar Heights Road / I-5 SB Ramps	21.6	C	22.1	C	23.3	C	1.7	N	22.4	C	0.3	N
2	Del Mar Heights Road / I-5 NB Ramps	40.6	D	38.6	D	41.9	D	1.3	N	39.3	D	0.7	N
3	Del Mar Heights Road / High Bluff Drive	28.4	C	32.1	C	29.0	C	0.6	N	32.5	C	0.4	N
4	Del Mar Heights Road / Third Avenue	DNE	DNE	DNE	DNE	3.2	A	0.0	N	4.5	A	0.0	N
5	Del Mar Heights Road / El Camino Real	28.4	C	36.7	D	28.9	C	0.5	N	37.7	D	1.0	N

Notes:

LOS = Level of Service

Δ = Change

S = Significant

D= Delay

DNE = Does not Exist

ATTACHMENT 26

Near Term With & Without Construction Traffic

Freeway Level of Service Summary
Phase 3

Segment	Dir.	Near Term		Near Term + Construction (Phase 3)		Δ	Sig.?
		V/C	LOS	V/C	LOS		
I-5							
Via De La Valle/Del Mar Heights Rd.	NB	0.6481	C	0.6485	C	0.0005	NO
Via De La Valle/Del Mar Heights Rd.	SB	0.6688	C	0.6693	C	0.0005	NO
Del Mar Heights Rd./ SR-56	NB	0.5596	B	0.5599	B	0.0004	NO
Del Mar Heights Rd./ SR-56	SB	0.5774	B	0.5779	B	0.0004	NO

Legend:

Dir.= Direction
V/C= Volume to Capacity Ratio
LOS= Level of Service
Sig.?= Is this significant?

ATTACHMENT 27
One Paseo Trip Generation Table
Construction Traffic

PHASES 1 & 2 Combined

Purpose	Number	Auto Equivalency	Equivalent Autos	Trip	ADT	AM Peak Hour					PM Peak Hour				
						%	#	In : Out	In	Out	%	#	In : Out	In	Out
Employees	400 Autos	N/A	400	2 /Auto	800	4%	32	9 : 1	29	3	4%	32	2 : 8	6	26
Material Deliveries	25 Trucks	2.5	62.5	2 /Auto	125	9%	11	4 : 6	5	7	8%	10	5 : 5	5	5
Truck Imports/Exports	210 Trucks	2.5	525	2 /Auto	1,050	9%	95	4 : 6	38	57	8%	84	5 : 5	42	42
TOTAL					1,975		138		71	67		126		53	73

Notes:

Passenger-Car equivalents for Trucks is 2.5 per Exhibit 21-9 in the Highway Capacity Manual 2000
Typical Work Hours 7AM to 3:30PM.
For Employee Peak Hour In/Out Ratios, a 4% AM and PM peak is assumed based on the AM peak counts beginning at 7:30AM and the majority of employee shifts ending at 3:30PM, which is prior to the PM peak counts beginning at 5:00PM.
For Material Deliveries and Truck Imports/Exports, the Truck Terminal land use peak hour splits were used based on the City of San Diego Trip Generation Manual, May 2003.

ATTACHMENT 28

Existing Without & Existing With Construction (Phase 1 & 2) Street Segment Comparison

Road	Segment	Class.	Existing			Existing + Construction (Phase 1 & 2)			ΔV/C	Is this impact Significant?
			LOS	Volume	V/C	LOS	Volume	V/C		
Del Mar Heights Rd.	I-5 Southbound Ramps and I-5 Northbound Ramps	5-PA	D	40,090	0.802	D	40,958	0.819	0.017	*NO*
	I-5 Northbound Ramps to High Bluff Drive	PA	D	51,625	0.860	D	53,280	0.888	0.028	*NO*
	High Bluff Drive to First Avenue	PA	C	37,910	0.632	C	39,565	0.659	0.028	*NO*
	First Avenue to El Camino Real	PA	C	37,910	0.632	C	38,230	0.637	0.005	*NO*
	El Camino Real to Carmel Country Road	PA	B	32,674	0.545	B	32,754	0.546	0.001	*NO*
El Camino Real	Quarter Mile Drive to Del Mar Heights Road	4-M	A	14,925	0.373	A	14,965	0.374	0.001	*NO*
	Del Mar Heights Road to Townsgate Drive	6-M	A	14,731	0.295	A	14,931	0.299	0.004	*NO*

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

PA = 6 lane Primary Arterial

5-PA = 5 lane Primary Arterial with LOS E capacity of 50,000 ADT

4-M=4 lane Major

6-M = 6 lane Major

ATTACHMENT 29

Existing & Existing + Construction Traffic (Phase 1 & 2) Intersection Summary

#	Intersection	Existing				Existing + Construction Traffic (Phase 1 & 2)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	Del Mar Heights Road / I-5 SB Ramps	22.5	C	20.3	C	23.4	C	0.9	No	21.0	C	0.7	No
2	Del Mar Heights Road / I-5 NB Ramps	35.1	D	37.5	D	35.9	C	0.8	No	38.2	C	0.7	No
3	Del Mar Heights Road / High Bluff Drive	26.1	C	28.9	C	26.8	C	0.7	No	30.0	C	1.1	No
4	Del Mar Heights Road / Third Avenue	DNE	DNE	DNE	DNE	4.4	A	N/A	No	6.1	A	N/A	No
5	Del Mar Heights Road / El Camino Real	27.2	C	26.9	C	27.9	C	0.7	No	27.0	C	0.1	No

Notes:

LOS = Level of Service

Δ = Change

S = Significant

D= Delay

DNE = Does Not Exist

N/A = Not Applicable

ATTACHMENT 30

Existing With & Without Construction Traffic (Phase 1 & 2)

Freeway Level of Service Summary

Segment	Dir.	Existing		Existing + Construction (Phase 1 & 2)		Δ	Sig.?
		V/C	LOS	V/C	LOS		
I-5							
Via De La Valle/Del Mar Heights Rd.	NB	0.6447	C	0.6454	C	0.0007	NO
Via De La Valle/Del Mar Heights Rd.	SB	0.6655	C	0.6662	C	0.0007	NO
Del Mar Heights Rd./ SR-56	NB	0.5565	B	0.5570	B	0.0006	NO
Del Mar Heights Rd./ SR-56	SB	0.5744	B	0.5750	B	0.0006	NO

Legend:

Dir.= Direction
V/C= Volume to Capacity Ratio
LOS= Level of Service
Sig.?= Is this significant?

ATTACHMENT 31

Near Term With & Without Construction (Phase 1 & 2)
Street Segment Comparison

Road	Segment	Class.	Near Term			Near Term + Construction (Phase 1 & 2)			ΔV/C	Is this impact Significant?
			LOS	Volume	V/C	LOS	Volume	V/C		
Del Mar Heights Rd.	I-5 Southbound Ramps and I-5 Northbound Ramps	5-PA	D	40,090	0.802	D	40,958	0.819	0.017	*NO*
	I-5 Northbound Ramps to High Bluff Drive	PA	D	52,682	0.878	D	54,337	0.906	0.028	*NO*
	High Bluff Drive to First Avenue	PA	C	38,967	0.649	C	40,622	0.677	0.028	*NO*
	First Avenue to El Camino Real	PA	C	38,967	0.649	C	39,287	0.655	0.005	*NO*
	El Camino Real to Carmel Country Road	PA	B	32,674	0.545	B	32,754	0.546	0.001	*NO*
El Camino Real	Quarter Mile Drive to Del Mar Heights Road	4-M	A	14,925	0.373	A	14,965	0.374	0.001	*NO*
	Del Mar Heights Road to Townsgate Drive	6-M	A	15,946	0.319	A	16,146	0.323	0.004	*NO*

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

PA = 6 lane Primary Arterial

5-PA = 5 lane Primary Arterial with LOS E capacity of 50,000 ADT

4-M=4 lane Major

6-M = 6 lane Major

ATTACHMENT 32

Near Term With & Without Construction Traffic Intersection Summary
Phase 1 & 2

#	Intersection	Near Term				Near Term + Constr. Traffic (Phase 1&2)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	Del Mar Heights Road / I-5 SB Ramps	21.2	C	21.9	C	24.1	C	2.9	N	22.2	C	0.3	N
2	Del Mar Heights Road / I-5 NB Ramps	36.8	D	37.6	D	38.1	D	1.3	N	38.5	D	0.9	N
3	Del Mar Heights Road / High Bluff Drive	28.2	C	31.6	C	29.2	C	1.0	N	32.1	C	0.5	N
4	Del Mar Heights Road / Third Avenue	DNE	DNE	DNE	DNE	4.4	A	0.0	N	5.7	A	0.0	N
5	Del Mar Heights Road / El Camino Real	27.9	C	30.8	C	28.7	C	0.8	N	31.9	C	1.1	N

Notes:

LOS = Level of Service

Δ = Change

S = Significant

D= Delay

DNE = Does not Exist

ATTACHMENT 33

Near Term With & Without Construction Traffic

Freeway Level of Service Summary
Phase 1 & 2

Segment	Dir.	Near Term		Near Term + Construction (Phase 1&2)		Δ	Sig.?
		V/C	LOS	V/C	LOS		
I-5							
Via De La Valle/Del Mar Heights Rd.	NB	0.6469	C	0.6476	C	0.0007	NO
Via De La Valle/Del Mar Heights Rd.	SB	0.6677	C	0.6684	C	0.0007	NO
Del Mar Heights Rd./ SR-56	NB	0.5585	B	0.5591	B	0.0006	NO
Del Mar Heights Rd./ SR-56	SB	0.5764	B	0.5770	B	0.0006	NO

Legend:

Dir.= Direction
V/C= Volume to Capacity Ratio
LOS= Level of Service
Sig.?= Is this significant?

ATTACHMENT 34
One Paseo Trip Generation Table
Construction Traffic

PHASES 1 - 3 Combined

Purpose	Number	Auto Equivalency	Equivalent Autos	Trip	ADT	AM Peak Hour						PM Peak Hour					
						%	#	In	:	Out	In	Out	%	#	In	:	Out	In	Out
Employees	500 Autos	N/A	500	2 /Auto	1,000	4%	40	9	:	1	36	4	4%	40	2	:	8	8	32
Material Deliveries	25 Trucks	2.5	62.5	2 /Auto	125	9%	11	4	:	6	5	7	8%	10	5	:	5	5	5
Truck Imports/Exports	210 Trucks	2.5	525	2 /Auto	1,050	9%	95	4	:	6	38	57	8%	84	5	:	5	42	42
TOTAL					2,175		146				78	67		134				55	79

Notes:

Passenger-Car equivalents for Trucks is 2.5 per Exhibit 21-9 in the Highway Capacity Manual 2000
Typical Work Hours 7AM to 3:30PM.
For Employee Peak Hour In/Out Ratios, a 4% AM and PM peak is assumed based on the AM peak counts beginning at 7:30AM and the majority of employee shifts ending at 3:30PM, which is prior to the PM peak counts beginning at 5:00PM.
For Material Deliveries and Truck Imports/Exports, the Truck Terminal land use peak hour splits were used based on the City of San Diego Trip Generation Manual, May 2003.

ATTACHMENT 35

Existing Without & Existing With Construction (Phase 1 - 3)
Street Segment Comparison

Road	Segment	Class.	Existing			Existing + Construction (Phase 1 - 3)			ΔV/C	Is this impact Significant?
			LOS	Volume	V/C	LOS	Volume	V/C		
Del Mar Heights Rd.	I-5 Southbound Ramps and I-5 Northbound Ramps	5-PA	D	40,090	0.802	D	41,028	0.821	0.019	*NO*
	I-5 Northbound Ramps to High Bluff Drive	PA	D	51,625	0.860	D	53,400	0.890	0.030	*NO*
	High Bluff Drive to First Avenue	PA	C	37,910	0.632	C	39,685	0.661	0.030	*NO*
	First Avenue to El Camino Real	PA	C	37,910	0.632	C	38,310	0.639	0.007	*NO*
	El Camino Real to Carmel Country Road	PA	B	32,674	0.545	B	32,774	0.546	0.002	*NO*
El Camino Real	Quarter Mile Drive to Del Mar Heights Road	4-M	A	14,925	0.373	A	14,975	0.374	0.001	*NO*
	Del Mar Heights Road to Townsgate Drive	6-M	A	14,731	0.295	A	14,981	0.300	0.005	*NO*

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

PA = 6 lane Primary Arterial

5-PA = 5 lane Primary Arterial with LOS E capacity of 50,000 ADT

4-M=4 lane Major

6-M = 6 lane Major

ATTACHMENT 36

Existing & Existing + Construction Traffic (Phase 1-3) Intersection Summary

#	Intersection	Existing				Existing + Construction Traffic (Phase 1-3)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	Del Mar Heights Road / I-5 SB Ramps	22.5	C	20.3	C	22.8	C	0.3	No	21.0	C	0.7	No
2	Del Mar Heights Road / I-5 NB Ramps	35.1	D	37.5	D	35.8	C	0.7	No	38.2	C	0.7	No
3	Del Mar Heights Road / High Bluff Drive	26.1	C	28.9	C	26.8	C	0.7	No	30.0	C	1.1	No
4	Del Mar Heights Road / First Avenue	DNE	DNE	DNE	DNE	3.4	A	N/A	No	4.9	A	N/A	No
5	Del Mar Heights Road / El Camino Real	27.2	C	26.9	C	28.8	C	1.6	No	28.2	C	1.3	No

Notes:

LOS = Level of Service

Δ = Change

S = Significant

D= Delay

DNE = Does Not Exist

N/A = Not Applicable

ATTACHMENT 37

Existing With & Without Construction Traffic (Phase 1 - 3)

Freeway Level of Service Summary

Segment	Dir.	Existing		Existing + Construction (Phase 1 - 3)		Δ	Sig.?
		V/C	LOS	V/C	LOS		
I-5							
Via De La Valle/Del Mar Heights Rd.	NB	0.6447	C	0.6455	C	0.0007	NO
Via De La Valle/Del Mar Heights Rd.	SB	0.6655	C	0.6663	C	0.0008	NO
Del Mar Heights Rd./ SR-56	NB	0.5565	B	0.5571	B	0.0006	NO
Del Mar Heights Rd./ SR-56	SB	0.5744	B	0.5751	B	0.0006	NO

Legend:

Dir.= Direction
V/C= Volume to Capacity Ratio
LOS= Level of Service
Sig.?= Is this significant?

ATTACHMENT 38

Near Term With & Without Construction (Phase 1 - 3)
Street Segment Comparison

Road	Segment	Class.	Near Term			Near Term + Construction (Phase 1 - 3)			ΔV/C	Is this impact Significant?
			LOS	Volume	V/C	LOS	Volume	V/C		
Del Mar Heights Rd.	I-5 Southbound Ramps and I-5 Northbound Ramps	5-PA	D	40,090	0.802	D	41,028	0.821	0.019	*NO*
	I-5 Northbound Ramps to High Bluff Drive	PA	D	53,226	0.887	E	55,001	0.917	0.030	*YES*
	High Bluff Drive to First Avenue	PA	C	39,511	0.659	C	41,286	0.688	0.030	*NO*
	First Avenue to El Camino Real	PA	C	39,511	0.659	C	39,911	0.665	0.007	*NO*
	El Camino Real to Carmel Country Road	PA	B	32,674	0.545	B	32,774	0.546	0.002	*NO*
El Camino Real	Quarter Mile Drive to Del Mar Heights Road	4-M	A	14,925	0.373	A	14,975	0.374	0.001	*NO*
	Del Mar Heights Road to Townsgate Drive	6-M	A	16,572	0.331	A	16,822	0.336	0.005	*NO*

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

PA = 6 lane Primary Arterial

5-PA = 5 lane Primary Arterial with LOS E capacity of 50,000 ADT

4-M=4 lane Major

6-M = 6 lane Major

ATTACHMENT 39

Near Term With & Without Construction Traffic Intersection Summary
Phases 1 - 3

#	Intersection	Near Term				Near Term + Constr. Traffic (Phase 1-3)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	Del Mar Heights Road / I-5 SB Ramps	20.3	C	21.0	C	24.4	C	4.1	N	22.5	C	1.5	N
2	Del Mar Heights Road / I-5 NB Ramps	32.0	C	34.8	C	42.3	D	10.3	N	39.8	D	5.0	N
3	Del Mar Heights Road / High Bluff Drive	26.8	C	30.0	C	29.4	C	2.6	N	32.6	C	2.6	N
4	Del Mar Heights Road / First Avenue	DNE	DNE	DNE	DNE	3.6	A	0.0	N	5.0	A	0.0	N
5	Del Mar Heights Road / El Camino Real	26.7	C	26.0	C	29.2	C	2.5	N	28.4	C	2.4	N

Notes:

LOS = Level of Service

Δ = Change

S = Significant

D= Delay

DNE = Does not Exist

ATTACHMENT 40

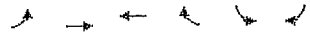
Near Term With & Without Construction Traffic

Freeway Level of Service Summary
Phase 1 - 3

Segment	Dir.	Near Term		Near Term + Construction (Phase 1-3)		Δ	Sig.?
		V/C	LOS	V/C	LOS		
I-5							
Via De La Valle/Del Mar Heights Rd.	NB	0.6481	C	0.6488	C	0.0007	NO
Via De La Valle/Del Mar Heights Rd.	SB	0.6688	C	0.6696	C	0.0008	NO
Del Mar Heights Rd./ SR-56	NB	0.5596	B	0.5602	B	0.0006	NO
Del Mar Heights Rd./ SR-56	SB	0.5774	B	0.5781	B	0.0006	NO

Legend:

Dir.= Direction
V/C= Volume to Capacity Ratio
LOS= Level of Service
Sig.?= Is this significant?



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰↱	↱
Volume (vph)	0	665	998	0	865	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		0.99	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3429	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3429	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	739	1109	0	961	362
RTOR Reduction (vph)	0	0	0	0	3	51
Lane Group Flow (vph)	0	739	1109	0	994	275
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		46.8	46.8		27.2	27.2
Effective Green, g (s)		46.8	46.8		27.2	27.2
Actuated g/C Ratio		0.54	0.54		0.32	0.32
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1928	1928		1086	456
v/s Ratio Prot		0.21	c0.31		c0.29	
v/s Ratio Perm						0.19
v/c Ratio		0.38	0.58		0.92	0.60
Uniform Delay, d1		11.2	13.0		28.2	24.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.4		11.7	2.2
Delay (s)		11.4	13.4		40.0	27.0
Level of Service		B	B		D	C
Approach Delay (s)		11.4	13.4		36.8	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	11.9
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↑	↑↑			↑↑↑	↱	↰	↑	↱			
Volume (vph)	224	1286	0	0	1434	902	373	0	779	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1457	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1457	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	249	1429	0	0	1593	1002	414	0	866	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	388	0	20	20	0	0	0
Lane Group Flow (vph)	249	1429	0	0	1593	614	373	437	430	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	14.0	69.3			51.3	51.3	42.7	42.7	42.7			
Effective Green, g (s)	14.0	69.3			51.3	51.3	42.7	42.7	42.7			
Actuated g/C Ratio	0.12	0.58			0.43	0.43	0.36	0.36	0.36			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	401	2044			2174	677	598	518	535			
v/s Ratio Prot	0.07	c0.40			0.31	c0.39	0.22	c0.30	0.29			
v/s Ratio Perm												
v/c Ratio	0.62	0.70			0.73	0.91	0.62	0.84	0.80			
Uniform Delay, d1	50.5	18.0			28.6	32.1	32.0	35.6	34.9			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	3.0	2.0			2.2	18.1	2.0	11.9	8.5			
Delay (s)	53.5	20.0			30.9	50.2	34.0	47.5	43.4			
Level of Service	D	B			C	D	C	D	D			
Approach Delay (s)		24.9			38.3			42.1			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	1217	674	92	1829	59	195	10	13	79	57	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	120	1352	749	102	2032	66	217	11	14	88	63	337
RTOR Reduction (vph)	0	0	378	0	4	0	0	12	0	0	0	136
Lane Group Flow (vph)	120	1352	371	102	2094	0	217	13	0	88	63	201
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	7.9	41.3	41.3	6.7	40.1		7.0	11.1		12.9	17.0	17.0
Effective Green, g (s)	7.9	41.3	41.3	6.7	40.1		7.0	11.1		12.9	17.0	17.0
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.46		0.08	0.13		0.15	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	159	2386	743	135	2306		273	409		259	360	306
v/s Ratio Prot	c0.07	0.27	0.23	0.06	c0.41		c0.06	0.00		0.05	0.03	c0.13
v/s Ratio Perm												
v/c Ratio	0.75	0.57	0.50	0.76	0.91		0.79	0.03		0.34	0.18	0.66
Uniform Delay, d1	39.1	16.9	16.2	39.8	22.2		39.8	33.7		33.7	29.6	32.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	18.2	0.3	0.5	21.1	5.7		14.7	0.0		0.8	0.2	5.0
Delay (s)	57.3	17.2	16.7	60.9	27.9		54.5	33.8		34.5	29.9	37.9
Level of Service	E	B	B	E	C		D	C		C	C	D
Approach Delay (s)		19.2			29.5			52.3			36.2	
Approach LOS		B			C			D			D	

Intersection Summary				
HCM Average Control Delay	26.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1271	38	26	1951	40	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1412	42	29	2168	44	29
RTOR Reduction (vph)	0	11	0	0	0	27
Lane Group Flow (vph)	1412	31	29	2168	44	2
Turn Type		Perm	Prot		Perm	
Protected Phases	4		3	8	2	
Permitted Phases		4			2	
Actuated Green, G (s)	47.6	47.6	1.8	53.4	4.0	4.0
Effective Green, g (s)	47.6	47.6	1.8	53.4	4.0	4.0
Actuated g/C Ratio	0.73	0.73	0.03	0.82	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3701	1152	94	4152	108	97
v/s Ratio Prot	0.28		0.01	c0.43	c0.02	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.38	0.03	0.31	0.52	0.41	0.02
Uniform Delay, d1	3.4	2.5	31.2	1.9	29.6	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	1.9	0.1	2.5	0.1
Delay (s)	3.4	2.5	33.1	2.0	32.1	28.9
Level of Service	A	A	C	A	C	C
Approach Delay (s)	3.4			2.4	30.8	
Approach LOS	A			A	C	

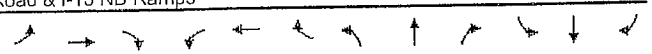
Intersection Summary				
HCM Average Control Delay	3.4	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	47.7%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	217	874	211	188	1346	92	222	99	76	159	287	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4937		3433	5037		3433	5085	1583	3433	4638	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4937		3433	5037		3433	5085	1583	3433	4638	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	241	971	234	209	1496	102	247	110	84	177	319	453
RTOR Reduction (vph)	0	52	0	0	10	0	0	0	69	0	206	0
Lane Group Flow (vph)	241	1153	0	209	1588	0	247	110	15	177	566	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	8.7	24.3		9.3	24.9		7.0	13.3	13.3	9.5	15.8	
Effective Green, g (s)	8.7	24.3		9.3	24.9		7.0	13.3	13.3	9.5	15.8	
Actuated g/C Ratio	0.12	0.34		0.13	0.34		0.10	0.18	0.18	0.13	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	413	1657		441	1732		332	934	291	450	1012	
v/s Ratio Prot	c0.07	0.23		0.06	c0.32		c0.07	0.02	0.01	0.05	c0.12	
v/s Ratio Perm												
v/c Ratio	0.58	0.70		0.47	0.92		0.74	0.12	0.05	0.39	0.56	
Uniform Delay, d1	30.1	20.8		29.3	22.8		31.8	24.7	24.4	28.8	25.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	1.3		0.8	8.1		8.7	0.1	0.1	0.6	0.7	
Delay (s)	32.2	22.1		30.1	30.8		40.6	24.7	24.4	29.4	25.9	
Level of Service	C	C		C	C		D	C	C	C	C	
Approach Delay (s)		23.8			30.7			33.5			26.5	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM Average Control Delay	28.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	68.6%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	880	1140	0	862	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	978	1267	0	958	322
RTOR Reduction (vph)	0	0	0	0	3	25
Lane Group Flow (vph)	0	978	1267	0	987	265
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		45.7	45.7		28.8	28.8
Effective Green, g (s)		45.7	45.7		28.8	28.8
Actuated g/C Ratio		0.53	0.53		0.33	0.33
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1872	1872		1143	480
v/s Ratio Prot		0.28	c0.36		c0.29	
v/s Ratio Perm						0.18
v/c Ratio		0.52	0.68		0.86	0.55
Uniform Delay, d1		13.2	14.9		27.0	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	1.0		7.0	1.4
Delay (s)		13.5	15.9		33.9	24.9
Level of Service		B	B		C	C
Approach Delay (s)		13.5	15.9		31.9	
Approach LOS		B	B		C	

Intersection Summary				
HCM Average Control Delay	21.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	11.9	
Intersection Capacity Utilization	68.5%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	1481	0	0	1040	813	615	10	762	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1497	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1497	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	261	1646	0	0	1156	903	683	11	847	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	497	0	3	3	0	0	0
Lane Group Flow (vph)	261	1646	0	0	1156	406	540	507	488	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	14.4	60.0			41.6	41.6	52.0	52.0	52.0			
Effective Green, g (s)	14.4	60.0			41.6	41.6	52.0	52.0	52.0			
Actuated g/C Ratio	0.12	0.50			0.35	0.35	0.43	0.43	0.43			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	412	1770			1763	549	728	649	652			
v/s Ratio Prot	0.08	c0.47			0.23	0.26	0.32	c0.34	0.32			
v/s Ratio Perm												
v/c Ratio	0.63	0.93			0.66	0.74	0.74	0.78	0.75			
Uniform Delay, d1	50.3	28.0			33.1	34.5	28.4	29.1	28.5			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	3.2	10.2			1.9	8.7	4.1	6.1	4.7			
Delay (s)	53.5	38.2			35.1	43.2	32.5	35.2	33.2			
Level of Service	D	D			D	D	C	D	C			
Approach Delay (s)		40.3			38.6			33.6			0.0	
Approach LOS		D			D			C			A	

Intersection Summary				
HCM Average Control Delay	37.8	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	92.1%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	2015	251	15	1180	28	618	65	134	27	29	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5068		3433	3181		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5068		3433	3181		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	2239	279	17	1311	31	687	72	149	30	32	89
RTOR Reduction (vph)	0	0	96	0	2	0	0	111	0	0	0	83
Lane Group Flow (vph)	269	2239	183	17	1340	0	687	110	0	30	32	6
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	17.4	53.0	53.0	1.7	37.3		22.2	25.1		3.9	6.8	6.8
Effective Green, g (s)	17.4	53.0	53.0	1.7	37.3		22.2	25.1		3.9	6.8	6.8
Actuated g/C Ratio	0.17	0.53	0.53	0.02	0.37		0.22	0.25		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	309	2703	842	30	1896		764	801		69	127	108
v/s Ratio Prot	c0.15	c0.44	0.12	0.01	0.26		c0.20	0.03		0.02	c0.02	0.00
v/s Ratio Perm												
v/c Ratio	0.87	0.83	0.22	0.57	0.71		0.90	0.14		0.43	0.25	0.06
Uniform Delay, d1	40.1	19.5	12.4	48.6	26.5		37.7	28.9		46.8	44.0	43.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	22.4	2.2	0.1	22.3	1.2		13.4	0.1		4.3	1.0	0.2
Delay (s)	62.5	21.8	12.5	70.9	27.8		51.0	29.0		51.2	45.1	43.7
Level of Service	E	C	B	E	C		D	C		D	D	D
Approach Delay (s)		24.8			28.3			45.7			45.5	
Approach LOS		C			C			D			D	

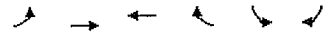
Intersection Summary				
HCM Average Control Delay	29.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	99.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	76.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2145	31	21	1189	40	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2383	34	23	1321	44	29
RTOR Reduction (vph)	0	10	0	0	0	27
Lane Group Flow (vph)	2383	24	23	1321	44	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.5	38.5	0.6	43.1	4.1	4.1
Effective Green, g (s)	38.5	38.5	0.6	43.1	4.1	4.1
Actuated g/C Ratio	0.70	0.70	0.01	0.78	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3547	1104	37	3970	131	118
v/s Ratio Prot	c0.47		0.01	c0.26	c0.02	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.67	0.02	0.62	0.33	0.34	0.02
Uniform Delay, d1	4.8	2.6	27.2	1.8	24.3	23.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	28.2	0.0	1.5	0.1
Delay (s)	5.3	2.6	55.4	1.8	25.8	23.7
Level of Service	A	A	E	A	C	C
Approach Delay (s)	5.2			2.8	25.0	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	4.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

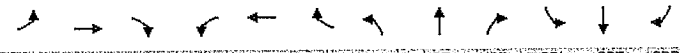
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	442	1358	361	102	746	176	270	394	238	147	146	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4925		3433	4939		3433	5085	1583	3433	4649	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4925		3433	4939		3433	5085	1583	3433	4649	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	491	1509	401	113	829	196	300	438	264	163	162	216
RTOR Reduction (vph)	0	44	0	0	44	0	0	0	217	0	181	0
Lane Group Flow (vph)	491	1866	0	113	981	0	300	438	47	163	197	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	15.4	33.7		6.5	24.8		8.2	13.8	13.8	6.8	12.4	
Effective Green, g (s)	15.4	33.7		6.5	24.8		8.2	13.8	13.8	6.8	12.4	
Actuated g/C Ratio	0.20	0.44		0.08	0.32		0.11	0.18	0.18	0.09	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	688	2161		291	1595		367	914	284	304	751	
v/s Ratio Prot	c0.14	c0.38		0.03	0.20		c0.09	c0.09	0.03	0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.71	0.86		0.39	0.62		0.82	0.48	0.17	0.54	0.26	
Uniform Delay, d1	28.6	19.5		33.3	22.0		33.6	28.3	26.6	33.5	28.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.5	3.8		0.9	0.7		13.2	0.4	0.3	1.8	0.2	
Delay (s)	32.2	23.3		34.1	22.7		46.7	28.7	26.9	35.3	28.4	
Level of Service	C	C		C	C		D	C	C	D	C	
Approach Delay (s)		25.1			23.8			33.6			30.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰↑	↱
Volume (vph)	0	687	1028	0	910	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		0.99	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3429	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3429	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	763	1142	0	1011	373
RTOR Reduction (vph)	0	0	0	0	3	41
Lane Group Flow (vph)	0	763	1142	0	1045	295
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		46.2	46.2		29.0	29.0
Effective Green, g (s)		46.2	46.2		29.0	29.0
Actuated g/C Ratio		0.53	0.53		0.33	0.33
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1877	1877		1142	480
v/s Ratio Prot		0.22	c0.32		c0.30	
v/s Ratio Perm						0.20
v/c Ratio		0.41	0.61		0.92	0.62
Uniform Delay, d1		12.2	14.2		27.9	24.4
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.6		11.3	2.3
Delay (s)		12.4	14.7		39.1	26.7
Level of Service		B	B		D	C
Approach Delay (s)		12.4	14.7		36.1	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	11.9
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↑↑	↱	↰	↑↑	↱			
Volume (vph)	231	1324	0	0	1482	931	384	22	849	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1468	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1468	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	257	1471	0	0	1647	1034	427	24	943	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	454	0	20	20	0	0	0
Lane Group Flow (vph)	257	1471	0	0	1647	580	384	490	480	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	10.3	68.4			54.1	54.1	43.6	43.6	43.6			
Effective Green, g (s)	10.3	68.4			54.1	54.1	43.6	43.6	43.6			
Actuated g/C Ratio	0.09	0.57			0.45	0.45	0.36	0.36	0.36			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	295	2017			2292	714	611	533	546			
v/s Ratio Prot	c0.07	0.42			0.32	c0.37	0.23	c0.33	0.32			
v/s Ratio Perm												
v/c Ratio	0.87	0.73			0.72	0.81	0.63	0.92	0.88			
Uniform Delay, d1	54.2	19.0			26.8	28.6	31.5	36.5	35.7			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	23.3	2.4			2.0	9.8	2.0	21.0	15.0			
Delay (s)	77.5	21.3			28.7	38.4	33.5	57.5	50.7			
Level of Service	E	C			C	D	C	E	D			
Approach Delay (s)		29.7			32.5			48.5			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	1322	694	95	1890	61	201	10	13	81	59	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	123	1469	771	106	2100	68	223	11	14	90	66	347
RTOR Reduction (vph)	0	0	375	0	4	0	0	12	0	0	0	134
Lane Group Flow (vph)	123	1469	396	106	2164	0	223	13	0	90	66	213
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	8.0	41.3	41.3	6.7	40.0		7.0	11.2		13.2	17.4	17.4
Effective Green, g (s)	8.0	41.3	41.3	6.7	40.0		7.0	11.2		13.2	17.4	17.4
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.45		0.08	0.13		0.15	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	160	2376	740	134	2290		272	411		264	367	312
v/s Ratio Prot	c0.07	0.29	0.25	0.06	c0.43		c0.06	0.00		0.05	0.04	c0.13
v/s Ratio Perm												
v/c Ratio	0.77	0.62	0.54	0.79	0.95		0.82	0.03		0.34	0.18	0.68
Uniform Delay, d1	39.3	17.6	16.7	40.2	23.1		40.1	33.8		33.7	29.6	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.6	0.5	0.7	26.4	9.0		17.3	0.0		0.8	0.2	6.0
Delay (s)	58.9	18.1	17.5	66.6	32.1		57.4	33.9		34.5	29.8	39.0
Level of Service	E	B	B	E	C		E	C		C	C	D
Approach Delay (s)		20.0			33.7			55.0			37.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	29.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	72.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1571	38	26	2039	40	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1746	42	29	2266	44	29
RTOR Reduction (vph)	0	11	0	0	0	27
Lane Group Flow (vph)	1746	31	29	2266	44	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	50.6	50.6	1.9	56.5	4.1	4.1
Effective Green, g (s)	50.6	50.6	1.9	56.5	4.1	4.1
Actuated g/C Ratio	0.74	0.74	0.03	0.82	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3751	1168	95	4188	106	95
v/s Ratio Prot	0.34		0.01	c0.45	c0.02	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.47	0.03	0.31	0.54	0.42	0.02
Uniform Delay, d1	3.6	2.4	32.7	1.9	31.1	30.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	1.8	0.1	2.6	0.1
Delay (s)	3.7	2.4	34.5	2.1	33.7	30.4
Level of Service	A	A	C	A	C	C
Approach Delay (s)	3.7			2.5	32.4	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	3.5	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.53			
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	49.4%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	900	286	198	1386	95	236	103	79	164	302	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.96		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4901		3433	5036		3433	5085	1583	3433	4642	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4901		3433	5036		3433	5085	1583	3433	4642	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	248	1000	318	220	1540	106	262	114	88	182	336	467
RTOR Reduction (vph)	0	75	0	0	10	0	0	0	71	0	161	0
Lane Group Flow (vph)	248	1243	0	220	1636	0	262	114	17	182	642	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	7.0	25.2		8.8	27.0		7.0	14.1	14.1	9.7	16.8	
Effective Green, g (s)	7.0	25.2		8.8	27.0		7.0	14.1	14.1	9.7	16.8	
Actuated g/C Ratio	0.09	0.34		0.12	0.37		0.09	0.19	0.19	0.13	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	326	1674		409	1842		326	972	302	451	1057	
v/s Ratio Prot	c0.07	0.25		0.06	c0.32		c0.08	0.02	0.01	0.05	c0.14	
v/s Ratio Perm												
v/c Ratio	0.76	0.74		0.54	0.89		0.80	0.12	0.06	0.40	0.92dr	
Uniform Delay, d1	32.6	21.4		30.6	22.0		32.7	24.7	24.4	29.4	25.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.0	1.8		1.4	5.6		13.4	0.1	0.1	0.6	1.0	
Delay (s)	42.6	23.3		32.0	27.6		46.1	24.8	24.5	30.0	26.5	
Level of Service	D	C		C	C		D	C	C	C	C	
Approach Delay (s)		26.3			28.1			36.7			27.2	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	28.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	70.6%	ICU Level of Service	C	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	910	1185	0	897	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1011	1317	0	997	332
RTOR Reduction (vph)	0	0	0	0	3	22
Lane Group Flow (vph)	0	1011	1317	0	1027	277
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		45.7	45.7		29.8	29.8
Effective Green, g (s)		45.7	45.7		29.8	29.8
Actuated g/C Ratio		0.52	0.52		0.34	0.34
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1850	1850		1169	491
v/s Ratio Prot		0.29	c0.37		c0.30	
v/s Ratio Perm						0.19
v/c Ratio		0.55	0.71		0.88	0.56
Uniform Delay, d1		13.9	15.8		27.1	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	1.3		7.7	1.5
Delay (s)		14.3	17.2		34.8	25.0
Level of Service		B	B		C	C
Approach Delay (s)		14.3	17.2		32.6	
Approach LOS		B	B		C	

Intersection Summary				
HCM Average Control Delay	22.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	11.9	
Intersection Capacity Utilization	70.5%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	1527	0	0	1122	863	639	15	796	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1499	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1499	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	1697	0	0	1247	959	710	17	884	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	523	0	6	6	0	0	0
Lane Group Flow (vph)	269	1697	0	0	1247	436	561	531	507	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	11.5	62.6			47.1	47.1	49.4	49.4	49.4			
Effective Green, g (s)	11.5	62.6			47.1	47.1	49.4	49.4	49.4			
Actuated g/C Ratio	0.10	0.52			0.39	0.39	0.41	0.41	0.41			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	329	1846			1996	621	692	617	619			
v/s Ratio Prot	0.08	c0.48			0.25	0.28	0.33	c0.35	0.34			
v/s Ratio Perm												
v/c Ratio	0.82	0.92			0.62	0.70	0.81	0.86	0.82			
Uniform Delay, d1	53.2	26.4			29.3	30.6	31.2	32.2	31.3			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	14.5	8.9			1.5	6.5	7.2	11.8	8.3			
Delay (s)	67.7	35.3			30.8	37.1	38.3	44.0	39.7			
Level of Service	E	D			C	D	D	D	D			
Approach Delay (s)		39.7			33.5			40.6			0.0	
Approach LOS		D			C			D			A	

Intersection Summary				
HCM Average Control Delay	37.6	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	96.5%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	2091	259	15	1280	29	637	67	138	28	30	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5069		3433	3181		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5069		3433	3181		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	277	2323	288	17	1422	32	708	74	153	31	33	91
RTOR Reduction (vph)	0	0	94	0	2	0	0	115	0	0	0	85
Lane Group Flow (vph)	277	2323	194	17	1452	0	708	112	0	31	33	6
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	17.7	53.8	53.8	1.7	37.8		22.2	25.1		3.9	6.8	6.8
Effective Green, g (s)	17.7	53.8	53.8	1.7	37.8		22.2	25.1		3.9	6.8	6.8
Actuated g/C Ratio	0.18	0.54	0.54	0.02	0.38		0.22	0.25		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	312	2722	847	30	1907		758	794		69	126	107
v/s Ratio Prot	c0.16	c0.46	0.12	0.01	0.29		c0.21	0.04		0.02	c0.02	0.00
v/s Ratio Perm												
v/c Ratio	0.89	0.85	0.23	0.57	0.76		0.93	0.14		0.45	0.26	0.06
Uniform Delay, d1	40.4	20.0	12.4	49.0	27.4		38.4	29.3		47.2	44.5	43.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	24.8	2.8	0.1	22.3	1.8		18.4	0.1		4.6	1.1	0.2
Delay (s)	65.2	22.8	12.5	71.3	29.3		56.9	29.4		51.8	45.6	44.1
Level of Service	E	C	B	E	C		E	C		D	D	D
Approach Delay (s)		25.8			29.7			50.2			46.0	
Approach LOS		C			C			D			D	

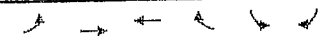
Intersection Summary				
HCM Average Control Delay	31.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	100.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	78.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰↑	↑↑↑	↰	↱
Volume (vph)	2272	31	21	1475	40	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2524	34	23	1639	44	29
RTOR Reduction (vph)	0	10	0	0	0	27
Lane Group Flow (vph)	2524	24	23	1639	44	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.9	38.9	0.6	43.5	4.2	4.2
Effective Green, g (s)	38.9	38.9	0.6	43.5	4.2	4.2
Actuated g/C Ratio	0.70	0.70	0.01	0.78	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3551	1106	37	3971	133	119
v/s Ratio Prot	c0.50		0.01	c0.32	c0.02	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.71	0.02	0.62	0.41	0.33	0.02
Uniform Delay, d1	5.0	2.6	27.4	2.0	24.4	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	28.2	0.1	1.5	0.1
Delay (s)	5.7	2.6	55.7	2.0	25.9	23.9
Level of Service	A	A	E	A	C	C
Approach Delay (s)	5.7			2.8	25.1	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	4.9	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	53.9%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

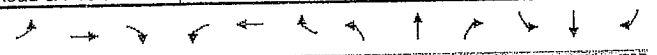
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑↱		↰↰	↑↑↱		↰↰	↑↑↑	↱	↰↰	↑↑↱	
Volume (vph)	455	1399	388	106	768	181	344	411	250	151	152	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4920		3433	4940		3433	5085	1583	3433	4652	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4920		3433	4940		3433	5085	1583	3433	4652	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	506	1554	431	118	853	201	382	457	278	168	169	222
RTOR Reduction (vph)	0	51	0	0	41	0	0	0	121	0	191	0
Lane Group Flow (vph)	506	1934	0	118	1013	0	382	457	157	168	200	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	16.5	40.4		4.6	28.5		10.1	15.1	15.1	6.7	11.7	
Effective Green, g (s)	16.5	40.4		4.6	28.5		10.1	15.1	15.1	6.7	11.7	
Actuated g/C Ratio	0.20	0.49		0.06	0.34		0.12	0.18	0.18	0.08	0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	684	2401		191	1700		419	927	289	278	657	
v/s Ratio Prot	c0.15	c0.39		0.03	0.21		c0.11	0.09	c0.10	0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.74	0.81		0.62	0.60		0.91	0.49	0.54	0.60	0.30	
Uniform Delay, d1	31.1	17.9		38.2	22.4		35.9	30.4	30.7	36.8	31.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.2	2.1		5.8	0.6		23.8	0.4	2.1	3.7	0.3	
Delay (s)	35.3	19.9		44.1	23.0		59.7	30.8	32.8	40.5	32.2	
Level of Service	D	B		D	C		E	C	C	D	C	
Approach Delay (s)		23.1			25.1			41.2			34.7	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	28.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	82.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	69.6%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↱	↱
Volume (vph)	0	664	995	0	860	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		0.99	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3429	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3429	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	738	1106	0	956	362
RTOR Reduction (vph)	0	0	0	0	3	51
Lane Group Flow (vph)	0	738	1106	0	989	275
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		47.2	47.2		27.2	27.2
Effective Green, g (s)		47.2	47.2		27.2	27.2
Actuated g/C Ratio		0.55	0.55		0.32	0.32
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1936	1936		1081	454
v/s Ratio Prot		0.21	c0.31		c0.29	
v/s Ratio Perm						0.19
v/c Ratio		0.38	0.57		0.92	0.60
Uniform Delay, d1		11.2	12.9		28.4	25.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.4		11.8	2.3
Delay (s)		11.3	13.3		40.2	27.3
Level of Service		B	B		D	C
Approach Delay (s)		11.3	13.3		37.0	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	86.3	Sum of lost time (s)	11.9
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

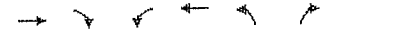


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↱	↑↑			↑↑↑	↱	↰	↑	↱			
Volume (vph)	224	1280	0	0	1424	896	373	0	774	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1457	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1457	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	249	1422	0	0	1582	996	414	0	860	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	422	0	10	10	0	0	0
Lane Group Flow (vph)	249	1422	0	0	1582	574	373	444	437	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	12.3	65.4			49.1	49.1	46.6	46.6	46.6			
Effective Green, g (s)	12.3	65.4			49.1	49.1	46.6	46.6	46.6			
Actuated g/C Ratio	0.10	0.55			0.41	0.41	0.39	0.39	0.39			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	352	1929			2081	648	653	566	584			
v/s Ratio Prot	0.07	c0.40			0.31	c0.36	0.22	c0.30	0.29			
v/s Ratio Perm												
v/c Ratio	0.71	0.74			0.76	0.89	0.57	0.78	0.75			
Uniform Delay, d1	52.1	20.8			30.4	32.8	28.8	32.3	31.6			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	6.4	2.6			2.7	16.3	1.2	7.0	5.2			
Delay (s)	58.5	23.3			33.1	49.1	30.1	39.3	36.8			
Level of Service	E	C			C	D	C	D	D			
Approach Delay (s)		28.6			39.3			35.7		0.0		
Approach LOS		C			D			D		A		

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	1206	674	92	1812	59	195	10	13	79	57	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	120	1340	749	102	2013	66	217	11	14	88	63	337
RTOR Reduction (vph)	0	0	378	0	4	0	0	12	0	0	0	136
Lane Group Flow (vph)	120	1340	371	102	2075	0	217	13	0	88	63	201
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	7.9	41.3	41.3	6.7	40.1		7.0	11.1		12.9	17.0	17.0
Effective Green, g (s)	7.9	41.3	41.3	6.7	40.1		7.0	11.1		12.9	17.0	17.0
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.46		0.08	0.13		0.15	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	159	2386	743	135	2306		273	409		259	360	306
v/s Ratio Prot	c0.07	0.26	0.23	0.06	c0.41		c0.06	0.00		0.05	0.03	c0.13
v/s Ratio Perm												
v/c Ratio	0.75	0.56	0.50	0.76	0.90		0.79	0.03		0.34	0.18	0.66
Uniform Delay, d1	39.1	16.8	16.2	39.8	22.1		39.8	33.7		33.7	29.6	32.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	18.2	0.3	0.5	21.1	5.2		14.7	0.0		0.8	0.2	5.0
Delay (s)	57.3	17.1	16.7	60.9	27.3		54.5	33.8		34.5	29.9	37.9
Level of Service	E	B	B	E	C		D	C		C	C	D
Approach Delay (s)		19.2			28.9			52.3			36.2	
Approach LOS		B			C			D			D	

Intersection Summary				
HCM Average Control Delay	26.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	70.6%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

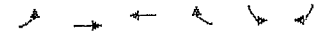


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1271	27	18	1951	23	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1412	30	20	2168	26	17
RTOR Reduction (vph)	0	10	0	0	0	16
Lane Group Flow (vph)	1412	20	20	2168	26	1
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	32.1	32.1	1.0	37.1	2.1	2.1
Effective Green, g (s)	32.1	32.1	1.0	37.1	2.1	2.1
Actuated g/C Ratio	0.68	0.68	0.02	0.79	0.04	0.04
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3458	1077	38	3997	153	70
v/s Ratio Prot	0.28		0.01	c0.43	c0.01	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.41	0.02	0.53	0.54	0.17	0.01
Uniform Delay, d1	3.3	2.4	22.9	1.9	21.7	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	12.5	0.2	0.5	0.1
Delay (s)	3.4	2.5	35.4	2.0	22.2	21.6
Level of Service	A	A	D	A	C	C
Approach Delay (s)	3.4			2.3	22.0	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	3.0	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	47.7%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	216	871	205	188	1345	92	217	99	76	159	287	407
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4940		3433	5037		3433	5085	1583	3433	4638	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4940		3433	5037		3433	5085	1583	3433	4638	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	240	968	228	209	1494	102	241	110	84	177	319	452
RTOR Reduction (vph)	0	47	0	0	10	0	0	0	69	0	218	0
Lane Group Flow (vph)	240	1149	0	209	1586	0	241	110	15	177	553	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	8.7	24.2		9.6	25.1		7.0	13.1	13.1	9.4	15.5	
Effective Green, g (s)	8.7	24.2		9.6	25.1		7.0	13.1	13.1	9.4	15.5	
Actuated g/C Ratio	0.12	0.33		0.13	0.35		0.10	0.18	0.18	0.13	0.21	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	413	1653		456	1749		332	921	287	446	994	
v/s Ratio Prot	c0.07	0.23		0.06	c0.31		c0.07	0.02	0.01	0.05	c0.12	
v/s Ratio Perm												
v/c Ratio	0.58	0.69		0.46	0.91		0.73	0.12	0.05	0.40	0.56	
Uniform Delay, d1	30.1	20.9		28.9	22.5		31.7	24.8	24.5	28.8	25.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	1.3		0.7	7.2		7.7	0.1	0.1	0.6	0.7	
Delay (s)	32.2	22.1		29.7	29.7		39.4	24.8	24.5	29.4	26.0	
Level of Service	C	C		C	C		D	C	C	C	C	
Approach Delay (s)		23.8			29.7			32.8			26.6	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM Average Control Delay	27.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	68.4%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	878	1138	0	857	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	976	1264	0	952	322
RTOR Reduction (vph)	0	0	0	0	3	25
Lane Group Flow (vph)	0	976	1264	0	981	265
Turn Type					Perm	
Protected Phases		2 6	6 2		4	
Permitted Phases					4	
Actuated Green, G (s)		45.7	45.7		28.7	28.7
Effective Green, g (s)		45.7	45.7		28.7	28.7
Actuated g/C Ratio		0.53	0.53		0.33	0.33
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1874	1874		1141	479
v/s Ratio Prot		0.28	c0.36		c0.29	
v/s Ratio Perm						0.18
v/c Ratio		0.52	0.67		0.86	0.55
Uniform Delay, d1		13.2	14.9		26.9	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	1.0		6.8	1.4
Delay (s)		13.4	15.8		33.7	24.9
Level of Service		B	B		C	C
Approach Delay (s)		13.4	15.8		31.7	
Approach LOS		B	B		C	

Intersection Summary				
HCM Average Control Delay	20.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	86.3	Sum of lost time (s)	11.9	
Intersection Capacity Utilization	68.3%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	1474	0	0	1033	807	615	10	757	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1499	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1499	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	261	1638	0	0	1148	897	683	11	841	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	526	0	3	3	0	0	0
Lane Group Flow (vph)	261	1638	0	0	1148	371	533	511	485	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	12.5	58.8			42.3	42.3	53.2	53.2	53.2			
Effective Green, g (s)	12.5	58.8			42.3	42.3	53.2	53.2	53.2			
Actuated g/C Ratio	0.10	0.49			0.35	0.35	0.44	0.44	0.44			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	358	1734			1792	558	745	665	667			
v/s Ratio Prot	0.08	c0.46			0.23	0.23	0.32	c0.34	0.32			
v/s Ratio Perm												
v/c Ratio	0.73	0.94			0.64	0.67	0.72	0.77	0.73			
Uniform Delay, d1	52.1	29.1			32.5	32.9	27.2	28.2	27.4			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	7.3	12.0			1.8	6.2	3.3	5.3	4.0			
Delay (s)	59.4	41.0			34.3	39.0	30.5	33.5	31.4			
Level of Service	E	D			C	D	C	C	C			
Approach Delay (s)		43.5			36.4			31.8			0.0	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	37.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	2003	251	15	1167	28	618	65	134	27	29	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5067		3433	3181		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5067		3433	3181		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	2226	279	17	1297	31	687	72	149	30	32	89
RTOR Reduction (vph)	0	0	96	0	2	0	0	111	0	0	0	83
Lane Group Flow (vph)	269	2226	183	17	1326	0	687	110	0	30	32	6
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	17.3	52.9	52.9	1.7	37.3		22.2	25.1		3.9	6.8	6.8
Effective Green, g (s)	17.3	52.9	52.9	1.7	37.3		22.2	25.1		3.9	6.8	6.8
Actuated g/C Ratio	0.17	0.53	0.53	0.02	0.37		0.22	0.25		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	307	2701	841	30	1898		765	802		69	127	108
v/s Ratio Prot	c0.15	c0.44	0.12	0.01	0.26		c0.20	0.03		0.02	c0.02	0.00
v/s Ratio Perm												
v/c Ratio	0.88	0.82	0.22	0.57	0.70		0.90	0.14		0.43	0.25	0.06
Uniform Delay, d1	40.1	19.5	12.4	48.6	26.4		37.6	28.9		46.8	44.0	43.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	23.2	2.2	0.1	22.3	1.1		13.3	0.1		4.3	1.0	0.2
Delay (s)	63.3	21.6	12.5	70.8	27.5		50.9	28.9		51.1	45.0	43.6
Level of Service	E	C	B	E	C		D	C		D	D	D
Approach Delay (s)		24.8			28.1			45.5			45.4	
Approach LOS		C			C			D			D	

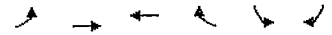
Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰	↑↑↑	↰↰	↱
Volume (vph)	2145	19	13	1189	27	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2383	21	14	1321	30	20
RTOR Reduction (vph)	0	6	0	0	0	19
Lane Group Flow (vph)	2383	15	14	1321	30	1
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.4	38.4	0.6	43.0	2.2	2.2
Effective Green, g (s)	38.4	38.4	0.6	43.0	2.2	2.2
Actuated g/C Ratio	0.72	0.72	0.01	0.81	0.04	0.04
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3670	1143	20	4110	142	65
v/s Ratio Prot	c0.47		0.01	c0.26	c0.01	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.65	0.01	0.70	0.32	0.21	0.01
Uniform Delay, d1	3.9	2.1	26.2	1.3	24.7	24.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	73.4	0.0	0.7	0.1
Delay (s)	4.3	2.1	99.7	1.4	25.4	24.5
Level of Service	A	A	F	A	C	C
Approach Delay (s)	4.3			2.4	25.1	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑↱		↰↰	↑↑↱		↰↰	↑↑↑	↱	↰↰	↑↑↱	
Volume (vph)	441	1356	355	102	744	176	265	394	238	147	146	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4927		3433	4939		3433	5085	1583	3433	4651	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4927		3433	4939		3433	5085	1583	3433	4651	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	490	1507	394	113	827	196	294	438	264	163	162	214
RTOR Reduction (vph)	0	41	0	0	43	0	0	0	216	0	179	0
Lane Group Flow (vph)	490	1860	0	113	980	0	294	438	48	163	197	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	16.0	32.9		6.5	23.4		8.2	13.8	13.8	6.8	12.4	
Effective Green, g (s)	16.0	32.9		6.5	23.4		8.2	13.8	13.8	6.8	12.4	
Actuated g/C Ratio	0.21	0.43		0.09	0.31		0.11	0.18	0.18	0.09	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	723	2133		294	1521		370	923	287	307	759	
v/s Ratio Prot	c0.14	c0.38		0.03	0.20		c0.09	c0.09	0.03	0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.68	0.87		0.38	0.64		0.79	0.47	0.17	0.53	0.26	
Uniform Delay, d1	27.6	19.6		32.9	22.7		33.1	27.9	26.2	33.1	27.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	4.2		0.8	0.9		11.2	0.4	0.3	1.8	0.2	
Delay (s)	30.2	23.9		33.7	23.7		44.3	28.2	26.5	34.8	28.0	
Level of Service	C	C		C	C		D	C	C	C	C	
Approach Delay (s)		25.2			24.7			32.5			30.0	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰↑	↱
Volume (vph)	0	688	1025	0	920	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		0.99	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3429	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3429	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	764	1139	0	1022	373
RTOR Reduction (vph)	0	0	0	0	3	41
Lane Group Flow (vph)	0	764	1139	0	1056	295
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		46.2	46.2		29.1	29.1
Effective Green, g (s)		46.2	46.2		29.1	29.1
Actuated g/C Ratio		0.53	0.53		0.33	0.33
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1875	1875		1144	481
v/s Ratio Prot		0.22	c0.32		c0.31	
v/s Ratio Perm						0.20
v/c Ratio		0.41	0.61		0.92	0.61
Uniform Delay, d1		12.3	14.2		28.0	24.3
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.6		12.2	2.3
Delay (s)		12.4	14.8		40.2	26.7
Level of Service		B	B		D	C
Approach Delay (s)		12.4	14.8		36.9	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	87.2	Sum of lost time (s)	11.9
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↑↑	↱	↰	↕	↱			
Volume (vph)	231	1318	0	0	1476	927	384	39	881	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1476	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1476	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	257	1464	0	0	1640	1030	427	43	979	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	430	0	20	20	0	0	0
Lane Group Flow (vph)	257	1464	0	0	1640	600	384	516	509	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	10.3	67.7			53.4	53.4	44.3	44.3	44.3			
Effective Green, g (s)	10.3	67.7			53.4	53.4	44.3	44.3	44.3			
Actuated g/C Ratio	0.09	0.56			0.44	0.44	0.37	0.37	0.37			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	295	1997			2263	704	621	545	555			
v/s Ratio Prot	c0.07	0.41			0.32	c0.38	0.23	c0.35	0.34			
v/s Ratio Perm												
v/c Ratio	0.87	0.73			0.72	0.85	0.62	0.95	0.92			
Uniform Delay, d1	54.2	19.4			27.3	29.8	30.9	36.7	36.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	23.3	2.4			2.1	12.5	1.8	25.6	20.0			
Delay (s)	77.5	21.9			29.3	42.3	32.8	62.3	56.0			
Level of Service	E	C			C	D	C	E	E			
Approach Delay (s)		30.2			34.3			52.2			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM Average Control Delay	37.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	1365	694	95	1880	61	201	10	13	81	59	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	123	1517	771	106	2089	68	223	11	14	90	66	347
RTOR Reduction (vph)	0	0	375	0	4	0	0	12	0	0	0	134
Lane Group Flow (vph)	123	1517	396	106	2153	0	223	13	0	90	66	213
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	8.0	41.3	41.3	6.7	40.0		7.0	11.2		13.2	17.4	17.4
Effective Green, g (s)	8.0	41.3	41.3	6.7	40.0		7.0	11.2		13.2	17.4	17.4
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.45		0.08	0.13		0.15	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	160	2376	740	134	2290		272	411		264	367	312
v/s Ratio Prot	c0.07	0.30	0.25	0.06	c0.43		c0.06	0.00		0.05	0.04	c0.13
v/s Ratio Perm												
v/c Ratio	0.77	0.64	0.54	0.79	0.94		0.82	0.03		0.34	0.18	0.68
Uniform Delay, d1	39.3	17.9	16.7	40.2	23.1		40.1	33.8		33.7	29.6	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.6	0.6	0.7	26.4	8.5		17.3	0.0		0.8	0.2	6.0
Delay (s)	58.9	18.5	17.5	66.6	31.6		57.4	33.9		34.5	29.8	39.0
Level of Service	E	B	B	E	C		E	C		C	C	D
Approach Delay (s)		20.2			33.2			55.0			37.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	28.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	72.7%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1625	27	18	2045	23	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1806	30	20	2272	26	17
RTOR Reduction (vph)	0	10	0	0	0	16
Lane Group Flow (vph)	1806	21	20	2272	26	1
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	32.8	32.8	1.0	37.8	2.2	2.2
Effective Green, g (s)	32.8	32.8	1.0	37.8	2.2	2.2
Actuated g/C Ratio	0.68	0.68	0.02	0.79	0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3475	1082	37	4004	157	73
v/s Ratio Prot	0.36		0.01	c0.45	c0.01	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.52	0.02	0.54	0.57	0.17	0.01
Uniform Delay, d1	3.7	2.4	23.3	2.0	22.0	21.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	15.1	0.2	0.5	0.1
Delay (s)	3.9	2.4	38.4	2.1	22.5	21.9
Level of Service	A	A	D	A	C	C
Approach Delay (s)	3.8			2.5	22.3	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	3.3	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	49.5%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	222	897	334	202	1385	95	237	103	79	164	306	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.96		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4878		3433	5036		3433	5085	1583	3433	4644	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4878		3433	5036		3433	5085	1583	3433	4644	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	247	997	371	224	1539	106	263	114	88	182	340	466
RTOR Reduction (vph)	0	88	0	0	10	0	0	0	71	0	161	0
Lane Group Flow (vph)	247	1280	0	224	1635	0	263	114	17	182	645	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	7.0	25.2		8.8	27.0		7.0	14.1	14.1	9.7	16.8	
Effective Green, g (s)	7.0	25.2		8.8	27.0		7.0	14.1	14.1	9.7	16.8	
Actuated g/C Ratio	0.09	0.34		0.12	0.37		0.09	0.19	0.19	0.13	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	326	1666		409	1842		326	972	302	451	1057	
v/s Ratio Prot	c0.07	0.26		0.07	c0.32		c0.08	0.02	0.01	0.05	c0.14	
v/s Ratio Perm												
v/c Ratio	0.76	0.77		0.55	0.89		0.81	0.12	0.06	0.40	0.92dr	
Uniform Delay, d1	32.6	21.7		30.6	22.0		32.7	24.7	24.4	29.4	25.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.7	2.2		1.5	5.6		13.6	0.1	0.1	0.6	1.1	
Delay (s)	42.2	23.9		32.1	27.6		46.3	24.8	24.5	30.0	26.6	
Level of Service	D	C		C	C		D	C	C	C	C	
Approach Delay (s)		26.7			28.1			36.9			27.2	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	28.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	70.6%	ICU Level of Service	C	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	910	1192	0	900	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1011	1324	0	1000	332
RTOR Reduction (vph)	0	0	0	0	3	21
Lane Group Flow (vph)	0	1011	1324	0	1030	278
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		45.7	45.7		29.8	29.8
Effective Green, g (s)		45.7	45.7		29.8	29.8
Actuated g/C Ratio		0.52	0.52		0.34	0.34
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1850	1850		1169	491
v/s Ratio Prot		0.29	c0.37		c0.30	
v/s Ratio Perm						0.19
v/c Ratio		0.55	0.72		0.88	0.57
Uniform Delay, d1		13.9	15.9		27.1	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	1.3		8.0	1.5
Delay (s)		14.3	17.2		35.2	25.0
Level of Service		B	B		D	C
Approach Delay (s)		14.3	17.2		32.9	
Approach LOS		B	B		C	

Intersection Summary				
HCM Average Control Delay	22.1	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	11.9	
Intersection Capacity Utilization	70.5%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	1523	0	0	1156	877	644	20	800	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1501	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1501	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	1692	0	0	1284	974	716	22	889	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	514	0	6	6	0	0	0
Lane Group Flow (vph)	269	1692	0	0	1284	460	566	530	519	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	11.4	62.6			47.2	47.2	49.4	49.4	49.4			
Effective Green, g (s)	11.4	62.6			47.2	47.2	49.4	49.4	49.4			
Actuated g/C Ratio	0.10	0.52			0.39	0.39	0.41	0.41	0.41			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	326	1846			2000	623	692	618	619			
v/s Ratio Prot	0.08	c0.48			0.25	0.29	0.34	c0.35	0.35			
v/s Ratio Perm												
v/c Ratio	0.83	0.92			0.64	0.74	0.82	0.86	0.84			
Uniform Delay, d1	53.3	26.3			29.5	31.1	31.3	32.1	31.7			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	15.5	8.7			1.6	7.6	7.5	11.3	9.7			
Delay (s)	68.8	35.0			31.1	38.7	38.8	43.4	41.4			
Level of Service	E	D			C	D	D	D	D			
Approach Delay (s)		39.6			34.4			41.2			0.0	
Approach LOS		D			C			D			A	

Intersection Summary				
HCM Average Control Delay	38.0	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	97.7%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	2092	259	15	1319	29	637	67	138	28	30	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5069		3433	3181		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5069		3433	3181		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	277	2324	288	17	1466	32	708	74	153	31	33	91
RTOR Reduction (vph)	0	0	94	0	2	0	0	115	0	0	0	85
Lane Group Flow (vph)	277	2324	194	17	1496	0	708	112	0	31	33	6
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	17.7	54.0	54.0	1.7	38.0		22.2	25.1		3.9	6.8	6.8
Effective Green, g (s)	17.7	54.0	54.0	1.7	38.0		22.2	25.1		3.9	6.8	6.8
Actuated g/C Ratio	0.18	0.54	0.54	0.02	0.38		0.22	0.25		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	311	2727	849	30	1913		757	793		69	126	107
v/s Ratio Prot	c0.16	c0.46	0.12	0.01	0.30		c0.21	0.04		0.02	c0.02	0.00
v/s Ratio Perm												
v/c Ratio	0.89	0.85	0.23	0.57	0.78		0.94	0.14		0.45	0.26	0.06
Uniform Delay, d1	40.6	19.9	12.3	49.1	27.7		38.5	29.4		47.3	44.6	44.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	25.6	2.8	0.1	22.3	2.2		18.6	0.1		4.6	1.1	0.2
Delay (s)	66.1	22.7	12.5	71.4	29.8		57.2	29.5		51.9	45.7	44.2
Level of Service	E	C	B	E	C		E	C		D	D	D
Approach Delay (s)		25.9			30.3			50.4			46.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	31.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	100.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	78.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰	↑↑↑	↰↰	↱
Volume (vph)	2285	19	13	1527	27	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2539	21	14	1697	30	20
RTOR Reduction (vph)	0	6	0	0	0	19
Lane Group Flow (vph)	2539	15	14	1697	30	1
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.9	38.9	0.6	43.5	2.3	2.3
Effective Green, g (s)	38.9	38.9	0.6	43.5	2.3	2.3
Actuated g/C Ratio	0.72	0.72	0.01	0.81	0.04	0.04
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3677	1145	20	4111	147	68
v/s Ratio Prot	c0.50		0.01	c0.33	c0.01	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.69	0.01	0.70	0.41	0.20	0.01
Uniform Delay, d1	4.1	2.1	26.5	1.5	24.9	24.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	73.4	0.1	0.7	0.1
Delay (s)	4.7	2.1	100.0	1.5	25.6	24.7
Level of Service	A	A	F	A	C	C
Approach Delay (s)	4.7			2.4	25.2	
Approach LOS	A			A	C	

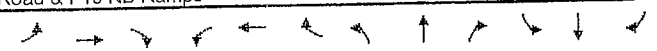
Intersection Summary				
HCM Average Control Delay	4.0	HCM Level of Service		A
HCM Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	53.8	Sum of lost time (s)		12.0
Intersection Capacity Utilization	54.1%	ICU Level of Service		A
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑↱		↰↰	↑↑↱		↰↰	↑↑↑	↱	↰↰	↑↑↱	
Volume (vph)	454	1397	395	107	766	181	391	416	253	151	153	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4917		3433	4940		3433	5085	1583	3433	4654	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4917		3433	4940		3433	5085	1583	3433	4654	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	504	1552	439	119	851	201	434	462	281	168	170	221
RTOR Reduction (vph)	0	52	0	0	41	0	0	0	121	0	190	0
Lane Group Flow (vph)	504	1939	0	119	1011	0	434	462	160	168	201	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	16.5	40.4		4.6	28.5		10.1	15.2	15.2	6.7	11.8	
Effective Green, g (s)	16.5	40.4		4.6	28.5		10.1	15.2	15.2	6.7	11.8	
Actuated g/C Ratio	0.20	0.49		0.06	0.34		0.12	0.18	0.18	0.08	0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	683	2396		190	1698		418	932	290	277	662	
v/s Ratio Prot	c0.15	c0.39		0.03	0.20		c0.13	0.09	c0.10	0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.74	0.81		0.63	0.60		1.04	0.50	0.55	0.61	0.30	
Uniform Delay, d1	31.2	18.0		38.3	22.4		36.4	30.4	30.8	36.8	31.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.2	2.1		6.3	0.6		54.3	0.4	2.3	3.7	0.3	
Delay (s)	35.3	20.1		44.6	23.0		90.7	30.8	33.0	40.6	32.1	
Level of Service	D	C		D	C		F	C	C	D	C	
Approach Delay (s)		23.2			25.2			53.4			34.7	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	31.4	HCM Level of Service		C
HCM Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	82.9	Sum of lost time (s)		12.0
Intersection Capacity Utilization	71.1%	ICU Level of Service		C
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↑	↱
Volume (vph)	0	664	995	0	861	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		0.99	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3429	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3429	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	738	1106	0	957	362
RTOR Reduction (vph)	0	0	0	0	3	51
Lane Group Flow (vph)	0	738	1106	0	990	275
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		47.2	47.2		27.2	27.2
Effective Green, g (s)		47.2	47.2		27.2	27.2
Actuated g/C Ratio		0.55	0.55		0.32	0.32
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1936	1936		1081	454
v/s Ratio Prot		0.21	c0.31		c0.29	
v/s Ratio Perm						0.19
v/c Ratio		0.38	0.57		0.92	0.60
Uniform Delay, d1		11.2	12.9		28.5	25.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.4		11.8	2.3
Delay (s)		11.3	13.3		40.3	27.3
Level of Service		B	B		D	C
Approach Delay (s)		11.3	13.3		37.1	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	86.3	Sum of lost time (s)	11.9
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↑↑	↱	↰	↟	↱			
Volume (vph)	224	1281	0	0	1426	897	373	0	775	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1457	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1457	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	249	1423	0	0	1584	997	414	0	861	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	422	0	10	10	0	0	0
Lane Group Flow (vph)	249	1423	0	0	1584	575	373	444	438	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	12.3	65.4			49.1	49.1	46.6	46.6	46.6			
Effective Green, g (s)	12.3	65.4			49.1	49.1	46.6	46.6	46.6			
Actuated g/C Ratio	0.10	0.55			0.41	0.41	0.39	0.39	0.39			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	352	1929			2081	648	653	566	584			
v/s Ratio Prot	0.07	c0.40			0.31	c0.36	0.22	c0.30	0.29			
v/s Ratio Perm												
v/c Ratio	0.71	0.74			0.76	0.89	0.57	0.78	0.75			
Uniform Delay, d1	52.1	20.8			30.4	32.9	28.8	32.3	31.7			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	6.4	2.6			2.7	16.5	1.2	7.0	5.2			
Delay (s)	58.5	23.3			33.1	49.4	30.1	39.3	36.9			
Level of Service	E	C			C	D	C	D	D			
Approach Delay (s)		28.6			39.4			35.7			0.0	
Approach LOS		C			D			D			A	

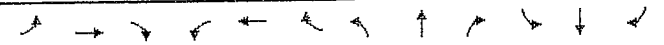
Intersection Summary			
HCM Average Control Delay	35.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	1209	674	92	1815	59	195	10	13	79	57	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	120	1343	749	102	2017	66	217	11	14	88	63	337
RTOR Reduction (vph)	0	0	378	0	4	0	0	12	0	0	0	136
Lane Group Flow (vph)	120	1343	371	102	2079	0	217	13	0	88	63	201
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	7.9	41.3	41.3	6.7	40.1		7.0	11.1		12.9	17.0	17.0
Effective Green, g (s)	7.9	41.3	41.3	6.7	40.1		7.0	11.1		12.9	17.0	17.0
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.46		0.08	0.13		0.15	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	159	2386	743	135	2306		273	409		259	360	306
v/s Ratio Prot	c0.07	0.26	0.23	0.06	c0.41		c0.06	0.00		0.05	0.03	c0.13
v/s Ratio Perm												
v/c Ratio	0.75	0.56	0.50	0.76	0.90		0.79	0.03		0.34	0.18	0.66
Uniform Delay, d1	39.1	16.8	16.2	39.8	22.1		39.8	33.7		33.7	29.6	32.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	18.2	0.3	0.5	21.1	5.4		14.7	0.0		0.8	0.2	5.0
Delay (s)	57.3	17.1	16.7	60.9	27.5		54.5	33.8		34.5	29.9	37.9
Level of Service	E	B	B	E	C		D	C		C	C	D
Approach Delay (s)		19.2			29.1			52.3			36.2	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1271	30	20	1951	26	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1412	33	22	2168	29	20
RTOR Reduction (vph)	0	9	0	0	0	19
Lane Group Flow (vph)	1412	24	22	2168	29	1
Turn Type		Perm	Prot		Perm	
Protected Phases	4		3	8	2	
Permitted Phases		4			2	
Actuated Green, G (s)	47.4	47.4	1.8	53.2	3.6	3.6
Effective Green, g (s)	47.4	47.4	1.8	53.2	3.6	3.6
Actuated g/C Ratio	0.73	0.73	0.03	0.82	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3720	1158	95	4175	98	88
v/s Ratio Prot	0.28		0.01	c0.43	c0.02	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.38	0.02	0.23	0.52	0.30	0.01
Uniform Delay, d1	3.2	2.4	30.8	1.8	29.4	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	1.3	0.1	1.7	0.1
Delay (s)	3.3	2.4	32.1	1.9	31.1	29.0
Level of Service	A	A	C	A	C	C
Approach Delay (s)	3.3			2.2	30.2	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	3.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	64.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	216	871	206	188	1345	92	218	99	76	159	287	407
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4939		3433	5037		3433	5085	1583	3433	4638	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4939		3433	5037		3433	5085	1583	3433	4638	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	240	968	229	209	1494	102	242	110	84	177	319	452
RTOR Reduction (vph)	0	50	0	0	10	0	0	0	67	0	183	0
Lane Group Flow (vph)	240	1147	0	209	1586	0	242	110	17	177	588	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	7.0	23.4		9.4	25.8		8.7	14.8	14.8	9.6	15.7	
Effective Green, g (s)	7.0	23.4		9.4	25.8		8.7	14.8	14.8	9.6	15.7	
Actuated g/C Ratio	0.10	0.32		0.13	0.35		0.12	0.20	0.20	0.13	0.21	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	328	1579		441	1775		408	1028	320	450	995	
v/s Ratio Prot	c0.07	0.23		0.06	c0.31		c0.07	0.02	0.01	0.05	c0.13	
v/s Ratio Perm												
v/c Ratio	0.73	0.73		0.47	0.89		0.59	0.11	0.05	0.39	0.59	
Uniform Delay, d1	32.2	22.1		29.6	22.4		30.6	23.8	23.5	29.1	25.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.2	1.7		0.8	6.2		2.3	0.0	0.1	0.6	0.9	
Delay (s)	40.3	23.8		30.4	28.6		32.9	23.9	23.6	29.7	26.8	
Level of Service	D	C		C	C		C	C	C	C	C	
Approach Delay (s)		26.5			28.8			28.8			27.3	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM Average Control Delay	27.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	68.5%	ICU Level of Service	C	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	879	1138	0	858	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	977	1264	0	953	322
RTOR Reduction (vph)	0	0	0	0	3	25
Lane Group Flow (vph)	0	977	1264	0	982	265
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		45.7	45.7		28.7	28.7
Effective Green, g (s)		45.7	45.7		28.7	28.7
Actuated g/C Ratio		0.53	0.53		0.33	0.33
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1874	1874		1141	479
v/s Ratio Prot		0.28	c0.36		c0.29	
v/s Ratio Perm						0.18
v/c Ratio		0.52	0.67		0.86	0.55
Uniform Delay, d1		13.2	14.9		26.9	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	1.0		6.8	1.4
Delay (s)		13.5	15.8		33.8	24.9
Level of Service		B	B		C	C
Approach Delay (s)		13.5	15.8		31.8	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	86.3	Sum of lost time (s)	11.9
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	1475	0	0	1034	808	615	10	758	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	*0.92			0.91	1.00	0.95	*0.92	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3427			5085	1583	1681	1515	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3427			5085	1583	1681	1515	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	261	1639	0	0	1149	898	683	11	842	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	479	0	13	13	0	0	0
Lane Group Flow (vph)	261	1639	0	0	1149	419	533	502	475	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	8.3	68.3			56.0	56.0	43.7	43.7	43.7			
Effective Green, g (s)	8.3	68.3			56.0	56.0	43.7	43.7	43.7			
Actuated g/C Ratio	0.07	0.57			0.47	0.47	0.36	0.36	0.36			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	237	1951			2373	739	612	552	548			
v/s Ratio Prot	c0.08	c0.48			0.23	0.26	0.32	c0.33	0.32			
v/s Ratio Perm												
v/c Ratio	1.10	0.84			0.48	0.57	0.87	0.91	0.87			
Uniform Delay, d1	55.8	21.3			22.0	23.2	35.5	36.3	35.5			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	86.2	4.6			0.7	3.1	12.9	18.9	13.6			
Delay (s)	144.1	25.9			22.8	26.3	48.4	55.2	49.0			
Level of Service	F	C			C	C	D	E	D			
Approach Delay (s)		42.1			24.3			50.9			0.0	
Approach LOS		D			C			D			A	

Intersection Summary				
HCM Average Control Delay	37.9	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	91.6%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	2005	251	15	1170	28	618	65	134	27	29	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5068		3433	3181		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5068		3433	3181		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	2228	279	17	1300	31	687	72	149	30	32	89
RTOR Reduction (vph)	0	0	96	0	2	0	0	111	0	0	0	83
Lane Group Flow (vph)	269	2228	183	17	1329	0	687	110	0	30	32	6
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	17.3	52.9	52.9	1.7	37.3		22.2	25.1		3.9	6.8	6.8
Effective Green, g (s)	17.3	52.9	52.9	1.7	37.3		22.2	25.1		3.9	6.8	6.8
Actuated g/C Ratio	0.17	0.53	0.53	0.02	0.37		0.22	0.25		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	307	2701	841	30	1898		765	802		69	127	108
v/s Ratio Prot	c0.15	c0.44	0.12	0.01	0.26		c0.20	0.03		0.02	c0.02	0.00
v/s Ratio Perm												
v/c Ratio	0.88	0.82	0.22	0.57	0.70		0.90	0.14		0.43	0.25	0.06
Uniform Delay, d1	40.1	19.5	12.4	48.6	26.4		37.6	28.9		46.8	44.0	43.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	23.2	2.2	0.1	22.3	1.2		13.3	0.1		4.3	1.0	0.2
Delay (s)	63.3	21.7	12.5	70.8	27.6		50.9	28.9		51.1	45.0	43.6
Level of Service	E	C	B	E	C		D	C		D	D	D
Approach Delay (s)		24.8			28.1			45.5			45.4	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	29.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	76.4%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2145	21	14	1189	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2383	23	16	1321	33	22
RTOR Reduction (vph)	0	7	0	0	0	20
Lane Group Flow (vph)	2383	16	16	1321	33	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.4	38.4	0.6	43.0	3.9	3.9
Effective Green, g (s)	38.4	38.4	0.6	43.0	3.9	3.9
Actuated g/C Ratio	0.70	0.70	0.01	0.78	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3557	1107	38	3983	126	112
v/s Ratio Prot	c0.47		0.00	c0.26	c0.02	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.67	0.01	0.42	0.33	0.26	0.01
Uniform Delay, d1	4.7	2.5	27.0	1.7	24.1	23.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	7.4	0.0	1.1	0.1
Delay (s)	5.2	2.5	34.3	1.8	25.2	23.8
Level of Service	A	A	C	A	C	C
Approach Delay (s)	5.1			2.2	24.7	
Approach LOS	A			A	C	

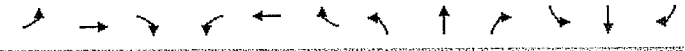
Intersection Summary			
HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	441	1356	356	102	745	176	266	394	238	147	146	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4927		3433	4939		3433	5085	1583	3433	4651	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4927		3433	4939		3433	5085	1583	3433	4651	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	490	1507	396	113	828	196	296	438	264	163	162	214
RTOR Reduction (vph)	0	45	0	0	41	0	0	0	216	0	179	0
Lane Group Flow (vph)	490	1858	0	113	983	0	296	438	48	163	197	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	15.9	31.8		6.4	22.3		8.2	13.7	13.7	6.7	12.2	
Effective Green, g (s)	15.9	31.8		6.4	22.3		8.2	13.7	13.7	6.7	12.2	
Actuated g/C Ratio	0.21	0.43		0.09	0.30		0.11	0.18	0.18	0.09	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	732	2100		295	1476		377	934	291	308	761	
v/s Ratio Prot	c0.14	c0.38		0.03	0.20		c0.09	c0.09	0.03	0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.67	0.88		0.38	0.67		0.79	0.47	0.17	0.53	0.26	
Uniform Delay, d1	26.9	19.7		32.2	22.9		32.3	27.2	25.6	32.4	27.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	4.9		0.8	1.1		10.3	0.4	0.3	1.6	0.2	
Delay (s)	29.3	24.6		33.1	24.0		42.6	27.6	25.9	34.1	27.4	
Level of Service	C	C		C	C		D	C	C	C	C	
Approach Delay (s)		25.5			24.9			31.6			29.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	74.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰↑	↱
Volume (vph)	0	690	1025	0	939	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		0.99	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	767	1139	0	1043	373
RTOR Reduction (vph)	0	0	0	0	3	37
Lane Group Flow (vph)	0	767	1139	0	1077	299
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		45.4	45.4		30.1	30.1
Effective Green, g (s)		45.4	45.4		30.1	30.1
Actuated g/C Ratio		0.52	0.52		0.34	0.34
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1838	1838		1181	496
v/s Ratio Prot		0.22	c0.32		c0.31	
v/s Ratio Perm						0.21
v/c Ratio		0.42	0.62		0.91	0.60
Uniform Delay, d1		12.9	14.9		27.4	23.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.6		10.7	2.1
Delay (s)		13.0	15.5		38.1	25.8
Level of Service		B	B		D	C
Approach Delay (s)		13.0	15.5		35.1	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	11.9
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰↑	↑↑			↑↑↑	↱	↰	↕	↱			
Volume (vph)	231	1319	0	0	1483	930	384	59	926	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1484	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1484	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	257	1466	0	0	1648	1033	427	66	1029	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	395	0	20	20	0	0	0
Lane Group Flow (vph)	257	1466	0	0	1648	638	384	552	546	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	10.2	67.6			53.4	53.4	44.4	44.4	44.4			
Effective Green, g (s)	10.2	67.6			53.4	53.4	44.4	44.4	44.4			
Actuated g/C Ratio	0.08	0.56			0.44	0.44	0.37	0.37	0.37			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	292	1994			2263	704	622	549	556			
v/s Ratio Prot	c0.07	0.41			0.32	c0.40	0.23	c0.37	0.36			
v/s Ratio Perm												
v/c Ratio	0.88	0.74			0.73	0.91	0.62	1.01	0.98			
Uniform Delay, d1	54.3	19.5			27.3	31.0	30.9	37.8	37.4			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	25.0	2.5			2.1	17.5	1.8	39.7	33.3			
Delay (s)	79.3	22.0			29.4	48.5	32.7	77.5	70.7			
Level of Service	E	C			C	D	C	E	E			
Approach Delay (s)		30.5			36.8			63.7			0.0	
Approach LOS		C			D			E			A	

Intersection Summary			
HCM Average Control Delay	41.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	1431	694	95	1890	61	201	10	13	81	59	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	123	1590	771	106	2100	68	223	11	14	90	66	347
RTOR Reduction (vph)	0	0	375	0	4	0	0	12	0	0	0	134
Lane Group Flow (vph)	123	1590	396	106	2164	0	223	13	0	90	66	213
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	8.0	41.3	41.3	6.7	40.0		7.0	11.2		13.2	17.4	17.4
Effective Green, g (s)	8.0	41.3	41.3	6.7	40.0		7.0	11.2		13.2	17.4	17.4
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.45		0.08	0.13		0.15	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	160	2376	740	134	2290		272	411		264	367	312
v/s Ratio Prot	c0.07	0.31	0.25	0.06	c0.43		c0.06	0.00		0.05	0.04	c0.13
v/s Ratio Perm												
v/c Ratio	0.77	0.67	0.54	0.79	0.95		0.82	0.03		0.34	0.18	0.68
Uniform Delay, d1	39.3	18.3	16.7	40.2	23.1		40.1	33.8		33.7	29.6	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.6	0.7	0.7	26.4	9.0		17.3	0.0		0.8	0.2	6.0
Delay (s)	58.9	19.0	17.5	66.6	32.1		57.4	33.9		34.5	29.8	39.0
Level of Service	E	B	B	E	C		E	C		C	C	D
Approach Delay (s)		20.5			33.7			55.0			37.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	29.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	72.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1689	30	20	2052	26	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1877	33	22	2280	29	20
RTOR Reduction (vph)	0	9	0	0	0	19
Lane Group Flow (vph)	1877	24	22	2280	29	1
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	50.6	50.6	1.9	56.5	3.7	3.7
Effective Green, g (s)	50.6	50.6	1.9	56.5	3.7	3.7
Actuated g/C Ratio	0.74	0.74	0.03	0.83	0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3773	1174	96	4213	96	86
v/s Ratio Prot	0.37		0.01	c0.45	c0.02	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.50	0.02	0.23	0.54	0.30	0.01
Uniform Delay, d1	3.6	2.3	32.4	1.8	31.0	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	1.2	0.1	1.8	0.1
Delay (s)	3.7	2.3	33.7	2.0	32.8	30.6
Level of Service	A	A	C	A	C	C
Approach Delay (s)	3.7			2.3	31.9	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	3.2	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.53			
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	49.6%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis — Near Term + Construction (Phase 3) AM
5: Del Mar Heights Road & El Camino Real — 3/5/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	222	897	399	206	1385	95	245	104	79	164	312	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.95		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4851		3433	5036		3433	5085	1583	3433	4648	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4851		3433	5036		3433	5085	1583	3433	4648	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	247	997	443	229	1539	106	272	116	88	182	347	466
RTOR Reduction (vph)	0	105	0	0	10	0	0	0	71	0	160	0
Lane Group Flow (vph)	247	1335	0	229	1635	0	272	116	17	182	653	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	7.0	25.2		8.9	27.1		7.0	14.2	14.2	9.7	16.9	
Effective Green, g (s)	7.0	25.2		8.9	27.1		7.0	14.2	14.2	9.7	16.9	
Actuated g/C Ratio	0.09	0.34		0.12	0.37		0.09	0.19	0.19	0.13	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	325	1652		413	1844		325	976	304	450	1062	
v/s Ratio Prot	c0.07	0.28		0.07	c0.32		c0.08	0.02	0.01	0.05	c0.14	
v/s Ratio Perm												
v/c Ratio	0.76	0.81		0.55	0.89		0.84	0.12	0.06	0.40	0.92dr	
Uniform Delay, d1	32.7	22.2		30.7	22.0		32.9	24.7	24.4	29.5	25.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.0	3.0		1.6	5.6		16.8	0.1	0.1	0.6	1.1	
Delay (s)	42.7	25.2		32.3	27.6		49.8	24.8	24.5	30.1	26.7	
Level of Service	D	C		C	C		D	C	C	C	C	
Approach Delay (s)		27.8			28.1			39.0			27.3	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	28.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis — Near Term + Construction (Phase 3) PM
1: Del Mar Heights Rd. & I-15 SB Ramps — 3/5/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	914	1203	0	910	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1016	1337	0	1011	332
RTOR Reduction (vph)	0	0	0	0	3	20
Lane Group Flow (vph)	0	1016	1337	0	1041	279
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		45.7	45.7		30.0	30.0
Effective Green, g (s)		45.7	45.7		30.0	30.0
Actuated g/C Ratio		0.52	0.52		0.34	0.34
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1846	1846		1175	493
v/s Ratio Prot		0.29	c0.38		c0.30	
v/s Ratio Perm						0.19
v/c Ratio		0.55	0.72		0.89	0.57
Uniform Delay, d1		14.1	16.1		27.2	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	1.4		8.3	1.5
Delay (s)		14.4	17.5		35.5	25.0
Level of Service		B	B		D	C
Approach Delay (s)		14.4	17.5		33.1	
Approach LOS		B	B		C	

Intersection Summary				
HCM Average Control Delay	22.4	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	11.9	
Intersection Capacity Utilization	70.9%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	1526	0	0	1205	902	649	24	811	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1503	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1503	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	1696	0	0	1339	1002	721	27	901	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	509	0	6	6	0	0	0
Lane Group Flow (vph)	269	1696	0	0	1339	493	570	541	526	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	11.3	62.2			46.9	46.9	49.8	49.8	49.8			
Effective Green, g (s)	11.3	62.2			46.9	46.9	49.8	49.8	49.8			
Actuated g/C Ratio	0.09	0.52			0.39	0.39	0.42	0.42	0.42			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	323	1834			1987	619	698	624	624			
v/s Ratio Prot	0.08	c0.48			0.26	0.31	0.34	c0.36	0.35			
v/s Ratio Perm												
v/c Ratio	0.83	0.92			0.67	0.80	0.82	0.87	0.84			
Uniform Delay, d1	53.4	26.7			30.2	32.3	31.1	32.1	31.6			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	16.6	9.4			1.8	10.2	7.3	12.2	10.1			
Delay (s)	70.0	36.2			32.1	42.5	38.4	44.2	41.7			
Level of Service	E	D			C	D	D	D	D			
Approach Delay (s)		40.8			36.6			41.4			0.0	
Approach LOS		D			D			D			A	

Intersection Summary				
HCM Average Control Delay	39.3	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	99.6%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	2110	259	15	1383	29	637	67	138	28	30	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5070		3433	3181		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5070		3433	3181		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	277	2344	288	17	1537	32	708	74	153	31	33	91
RTOR Reduction (vph)	0	0	93	0	2	0	0	115	0	0	0	85
Lane Group Flow (vph)	277	2344	195	17	1567	0	708	112	0	31	33	6
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	17.7	54.6	54.6	1.7	38.6		22.1	25.1		3.9	6.9	6.9
Effective Green, g (s)	17.7	54.6	54.6	1.7	38.6		22.1	25.1		3.9	6.9	6.9
Actuated g/C Ratio	0.17	0.54	0.54	0.02	0.38		0.22	0.25		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	309	2741	853	30	1932		749	788		68	127	108
v/s Ratio Prot	c0.16	c0.46	0.12	0.01	0.31		c0.21	0.04		0.02	c0.02	0.00
v/s Ratio Perm												
v/c Ratio	0.90	0.86	0.23	0.57	0.81		0.95	0.14		0.46	0.26	0.06
Uniform Delay, d1	40.9	20.0	12.3	49.4	28.1		39.0	29.7		47.7	44.8	44.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	26.5	2.8	0.1	22.3	2.7		20.5	0.1		4.8	1.1	0.2
Delay (s)	67.4	22.8	12.4	71.7	30.8		59.5	29.8		52.4	45.9	44.4
Level of Service	E	C	B	E	C		E	C		D	D	D
Approach Delay (s)		26.0			31.2			52.3			46.3	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	32.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	101.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	78.9%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰↰	↑↑↑	↰	↱
Volume (vph)	2301	21	14	1588	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2557	23	16	1764	33	22
RTOR Reduction (vph)	0	7	0	0	0	20
Lane Group Flow (vph)	2557	16	16	1764	33	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	39.4	39.4	0.7	44.1	3.9	3.9
Effective Green, g (s)	39.4	39.4	0.7	44.1	3.9	3.9
Actuated g/C Ratio	0.70	0.70	0.01	0.79	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3578	1114	43	4004	123	110
v/s Ratio Prot	c0.50		0.00	c0.35	c0.02	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.71	0.01	0.37	0.44	0.27	0.01
Uniform Delay, d1	4.9	2.5	27.4	1.9	24.7	24.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	5.4	0.1	1.2	0.1
Delay (s)	5.6	2.5	32.8	2.0	25.9	24.3
Level of Service	A	A	C	A	C	C
Approach Delay (s)	5.6			2.3	25.2	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	4.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑↱		↰↰	↑↑↱		↰↰	↑↑↑	↱	↰↰	↑↑↱	
Volume (vph)	454	1397	411	108	767	181	453	421	257	151	154	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4912		3433	4940		3433	5085	1583	3433	4655	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4912		3433	4940		3433	5085	1583	3433	4655	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	504	1552	457	120	852	201	503	468	286	168	171	221
RTOR Reduction (vph)	0	54	0	0	41	0	0	0	121	0	189	0
Lane Group Flow (vph)	504	1955	0	120	1012	0	503	468	165	168	203	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	16.5	40.4		4.6	28.5		10.1	15.4	15.4	6.7	12.0	
Effective Green, g (s)	16.5	40.4		4.6	28.5		10.1	15.4	15.4	6.7	12.0	
Actuated g/C Ratio	0.20	0.49		0.06	0.34		0.12	0.19	0.19	0.08	0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	682	2388		190	1694		417	942	293	277	672	
v/s Ratio Prot	c0.15	c0.40		0.03	0.20		c0.15	0.09	c0.10	0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.74	0.82		0.63	0.60		1.21	0.50	0.56	0.61	0.30	
Uniform Delay, d1	31.3	18.2		38.4	22.6		36.5	30.4	30.8	36.9	31.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.2	2.3		6.7	0.6		113.5	0.4	2.5	3.7	0.3	
Delay (s)	35.5	20.5		45.1	23.1		150.0	30.8	33.3	40.7	32.1	
Level of Service	D	C		D	C		F	C	C	D	C	
Approach Delay (s)		23.5			25.4			79.0			34.6	
Approach LOS		C			C			E			C	

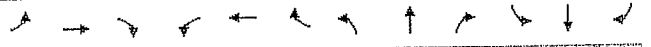
Intersection Summary			
HCM Average Control Delay	37.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↑↑	↱
Volume (vph)	0	666	998	0	867	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		0.99	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3429	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3429	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	740	1109	0	963	362
RTOR Reduction (vph)	0	0	0	0	3	54
Lane Group Flow (vph)	0	740	1109	0	996	272
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		47.3	47.3		26.8	26.8
Effective Green, g (s)		47.3	47.3		26.8	26.8
Actuated g/C Ratio		0.55	0.55		0.31	0.31
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1946	1946		1069	449
v/s Ratio Prot		0.21	c0.31		c0.29	
v/s Ratio Perm						0.19
v/c Ratio		0.38	0.57		0.93	0.60
Uniform Delay, d1		11.0	12.7		28.7	25.1
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.4		14.0	2.3
Delay (s)		11.1	13.1		42.8	27.4
Level of Service		B	B		D	C
Approach Delay (s)		11.1	13.1		39.0	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	11.9
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

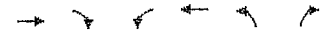
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↑↑	↱	↰	↕	↱			
Volume (vph)	224	1289	0	0	1434	903	373	0	781	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1457	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1457	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	249	1432	0	0	1593	1003	414	0	868	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	449	0	31	31	0	0	0
Lane Group Flow (vph)	249	1432	0	0	1593	554	373	427	420	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	7.1	74.1			63.0	63.0	37.9	37.9	37.9			
Effective Green, g (s)	7.1	74.1			63.0	63.0	37.9	37.9	37.9			
Actuated g/C Ratio	0.06	0.62			0.52	0.52	0.32	0.32	0.32			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	203	2185			2670	831	531	460	475			
v/s Ratio Prot	c0.07	c0.40			0.31	0.35	0.22	c0.29	0.28			
v/s Ratio Perm												
v/c Ratio	1.23	0.66			0.60	0.67	0.70	0.93	0.88			
Uniform Delay, d1	56.4	14.7			19.7	20.8	36.1	39.7	39.0			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	137.6	1.6			1.0	4.2	4.2	24.8	17.4			
Delay (s)	194.0	16.3			20.7	25.0	40.3	64.5	56.3			
Level of Service	F	B			C	C	D	E	E			
Approach Delay (s)		42.6			22.4			54.6			0.0	
Approach LOS		D			C			D			A	

Intersection Summary			
HCM Average Control Delay	35.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



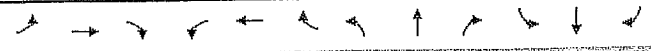
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	1222	674	92	1829	59	195	10	13	79	57	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	120	1358	749	102	2032	66	217	11	14	88	63	337
RTOR Reduction (vph)	0	0	378	0	4	0	0	12	0	0	0	136
Lane Group Flow (vph)	120	1358	371	102	2094	0	217	13	0	88	63	201
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	7.9	41.3	41.3	6.7	40.1		7.0	11.1		12.9	17.0	17.0
Effective Green, g (s)	7.9	41.3	41.3	6.7	40.1		7.0	11.1		12.9	17.0	17.0
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.46		0.08	0.13		0.15	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	159	2386	743	135	2306		273	409		259	360	306
v/s Ratio Prot	c0.07	0.27	0.23	0.06	c0.41		c0.06	0.00		0.05	0.03	c0.13
v/s Ratio Perm												
v/c Ratio	0.75	0.57	0.50	0.76	0.91		0.79	0.03		0.34	0.18	0.66
Uniform Delay, d1	39.1	16.9	16.2	39.8	22.2		39.8	33.7		33.7	29.6	32.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	18.2	0.3	0.5	21.1	5.7		14.7	0.0		0.8	0.2	5.0
Delay (s)	57.3	17.2	16.7	60.9	27.9		54.5	33.8		34.5	29.9	37.9
Level of Service	E	B	B	E	C		D	C		C	C	D
Approach Delay (s)		19.2			29.5			52.3			36.2	
Approach LOS		B			C			D			D	

Intersection Summary				
HCM Average Control Delay	26.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1271	43	28	1951	40	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1412	48	31	2168	44	30
RTOR Reduction (vph)	0	16	0	0	0	28
Lane Group Flow (vph)	1412	32	31	2168	44	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	32.1	32.1	1.0	37.1	3.4	3.4
Effective Green, g (s)	32.1	32.1	1.0	37.1	3.4	3.4
Actuated g/C Ratio	0.66	0.66	0.02	0.76	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3366	1048	36	3890	241	111
v/s Ratio Prot	0.28		0.02	c0.43	c0.01	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.42	0.03	0.86	0.56	0.18	0.02
Uniform Delay, d1	3.8	2.8	23.7	2.3	21.2	21.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	95.3	0.2	0.4	0.1
Delay (s)	3.9	2.8	119.0	2.5	21.6	21.1
Level of Service	A	A	F	A	C	C
Approach Delay (s)	3.9			4.2	21.4	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	4.4	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.53			
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	47.7%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	217	874	212	188	1347	92	224	99	76	159	287	409
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4936		3433	5037		3433	5085	1583	3433	4637	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4936		3433	5037		3433	5085	1583	3433	4637	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	241	971	236	209	1497	102	249	110	84	177	319	454
RTOR Reduction (vph)	0	49	0	0	10	0	0	0	69	0	217	0
Lane Group Flow (vph)	241	1158	0	209	1589	0	249	110	15	177	556	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	8.7	24.1		9.7	25.1		7.0	13.2	13.2	9.5	15.7	
Effective Green, g (s)	8.7	24.1		9.7	25.1		7.0	13.2	13.2	9.5	15.7	
Actuated g/C Ratio	0.12	0.33		0.13	0.35		0.10	0.18	0.18	0.13	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	412	1641		459	1744		331	926	288	450	1004	
v/s Ratio Prot	c0.07	0.23		0.06	c0.32		c0.07	0.02	0.01	0.05	c0.12	
v/s Ratio Perm												
v/c Ratio	0.58	0.71		0.46	0.91		0.75	0.12	0.05	0.39	0.55	
Uniform Delay, d1	30.2	21.1		29.0	22.6		31.9	24.8	24.5	28.9	25.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	1.4		0.7	7.6		9.3	0.1	0.1	0.6	0.7	
Delay (s)	32.3	22.5		29.7	30.3		41.2	24.8	24.6	29.4	25.9	
Level of Service	C	C		C	C		D	C	C	C	C	
Approach Delay (s)		24.1			30.2			34.0			26.6	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM Average Control Delay	27.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	68.7%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	880	1140	0	862	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	978	1267	0	958	322
RTOR Reduction (vph)	0	0	0	0	3	25
Lane Group Flow (vph)	0	978	1267	0	987	265
Turn Type					Perm	
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		45.7	45.7		28.8	28.8
Effective Green, g (s)		45.7	45.7		28.8	28.8
Actuated g/C Ratio		0.53	0.53		0.33	0.33
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1872	1872		1143	480
v/s Ratio Prot		0.28	c0.36		c0.29	
v/s Ratio Perm						0.18
v/c Ratio		0.52	0.68		0.86	0.55
Uniform Delay, d1		13.2	14.9		27.0	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	1.0		7.0	1.4
Delay (s)		13.5	15.9		33.9	24.9
Level of Service		B	B		C	C
Approach Delay (s)		13.5	15.9		31.9	
Approach LOS		B	B		C	

Intersection Summary				
HCM Average Control Delay	21.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	11.9	
Intersection Capacity Utilization	68.5%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	1482	0	0	1042	814	615	10	762	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1497	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1497	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	261	1647	0	0	1158	904	683	11	847	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	564	0	2	2	0	0	0
Lane Group Flow (vph)	261	1647	0	0	1158	340	540	508	489	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	13.8	58.5			40.7	40.7	53.5	53.5	53.5			
Effective Green, g (s)	13.8	58.5			40.7	40.7	53.5	53.5	53.5			
Actuated g/C Ratio	0.12	0.49			0.34	0.34	0.45	0.45	0.45			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	395	1725			1725	537	749	667	671			
v/s Ratio Prot	0.08	c0.47			0.23	0.21	0.32	c0.34	0.32			
v/s Ratio Perm												
v/c Ratio	0.66	0.95			0.67	0.63	0.72	0.76	0.73			
Uniform Delay, d1	50.9	29.5			33.9	33.4	27.2	27.9	27.3			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	4.1	13.3			2.1	5.6	3.4	5.1	4.0			
Delay (s)	55.0	42.8			36.0	39.0	30.6	33.0	31.2			
Level of Service	D	D			D	D	C	C	C			
Approach Delay (s)		44.5			37.3			31.6			0.0	
Approach LOS		D			D			C			A	

Intersection Summary				
HCM Average Control Delay	38.2	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	92.2%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	2016	251	15	1184	28	618	65	134	27	29	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5068		3433	3181		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5068		3433	3181		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	2240	279	17	1316	31	687	72	149	30	32	89
RTOR Reduction (vph)	0	0	96	0	2	0	0	111	0	0	0	83
Lane Group Flow (vph)	269	2240	183	17	1345	0	687	110	0	30	32	6
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	17.4	53.0	53.0	1.7	37.3		22.2	25.1		3.9	6.8	6.8
Effective Green, g (s)	17.4	53.0	53.0	1.7	37.3		22.2	25.1		3.9	6.8	6.8
Actuated g/C Ratio	0.17	0.53	0.53	0.02	0.37		0.22	0.25		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	309	2703	842	30	1896		764	801		69	127	108
v/s Ratio Prot	c0.15	c0.44	0.12	0.01	0.27		c0.20	0.03		0.02	c0.02	0.00
v/s Ratio Perm												
v/c Ratio	0.87	0.83	0.22	0.57	0.71		0.90	0.14		0.43	0.25	0.06
Uniform Delay, d1	40.1	19.5	12.4	48.6	26.6		37.7	28.9		46.8	44.0	43.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	22.4	2.2	0.1	22.3	1.2		13.4	0.1		4.3	1.0	0.2
Delay (s)	62.5	21.8	12.5	70.9	27.8		51.0	29.0		51.2	45.1	43.7
Level of Service	E	C	B	E	C		D	C		D	D	D
Approach Delay (s)		24.8			28.4			45.7			45.5	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	30.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	99.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	76.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2145	32	21	1189	44	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2383	36	23	1321	49	32
RTOR Reduction (vph)	0	11	0	0	0	30
Lane Group Flow (vph)	2383	25	23	1321	49	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.4	38.4	0.6	43.0	3.6	3.6
Effective Green, g (s)	38.4	38.4	0.6	43.0	3.6	3.6
Actuated g/C Ratio	0.70	0.70	0.01	0.79	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3576	1113	19	4005	226	104
v/s Ratio Prot	c0.47		c0.01	0.26	c0.01	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.67	0.02	1.21	0.33	0.22	0.02
Uniform Delay, d1	4.5	2.4	27.0	1.7	24.2	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	279.4	0.0	0.5	0.1
Delay (s)	5.0	2.5	306.4	1.7	24.6	23.9
Level of Service	A	A	F	A	C	C
Approach Delay (s)	5.0			6.9	24.4	
Approach LOS	A			A	C	

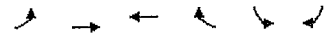
Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	443	1358	362	102	746	176	270	394	238	147	146	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4925		3433	4939		3433	5085	1583	3433	4649	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4925		3433	4939		3433	5085	1583	3433	4649	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	492	1509	402	113	829	196	300	438	264	163	162	216
RTOR Reduction (vph)	0	45	0	0	42	0	0	0	216	0	183	0
Lane Group Flow (vph)	492	1866	0	113	983	0	300	438	48	163	195	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	15.5	32.5		6.5	23.5		9.2	13.8	13.8	7.0	11.6	
Effective Green, g (s)	15.5	32.5		6.5	23.5		9.2	13.8	13.8	7.0	11.6	
Actuated g/C Ratio	0.20	0.43		0.09	0.31		0.12	0.18	0.18	0.09	0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	702	2112		294	1531		417	926	288	317	711	
v/s Ratio Prot	c0.14	c0.38		0.03	0.20		c0.09	c0.09	0.03	0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.70	0.88		0.38	0.64		0.72	0.47	0.17	0.51	0.27	
Uniform Delay, d1	28.0	19.9		32.8	22.5		32.1	27.7	26.2	32.8	28.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.2	4.8		0.8	0.9		5.9	0.4	0.3	1.4	0.2	
Delay (s)	31.2	24.7		33.6	23.5		37.9	28.1	26.4	34.2	28.6	
Level of Service	C	C		C	C		D	C	C	C	C	
Approach Delay (s)		26.0			24.5			30.6			30.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰↑	↱
Volume (vph)	0	690	1028	0	927	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		0.99	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3429	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3429	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	767	1142	0	1030	373
RTOR Reduction (vph)	0	0	0	0	3	41
Lane Group Flow (vph)	0	767	1142	0	1064	295
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		46.5	46.5		29.2	29.2
Effective Green, g (s)		46.5	46.5		29.2	29.2
Actuated g/C Ratio		0.53	0.53		0.33	0.33
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1879	1879		1143	480
v/s Ratio Prot		0.22	c0.32		c0.31	
v/s Ratio Perm						0.20
v/c Ratio		0.41	0.61		0.93	0.62
Uniform Delay, d1		12.3	14.2		28.2	24.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.6		13.3	2.3
Delay (s)		12.5	14.8		41.5	26.8
Level of Service		B	B		D	C
Approach Delay (s)		12.5	14.8		38.0	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	11.9
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↑↑	↱	↰	↔	↱			
Volume (vph)	231	1327	0	0	1486	934	384	39	888	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1475	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1475	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	257	1474	0	0	1651	1038	427	43	987	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	431	0	20	20	0	0	0
Lane Group Flow (vph)	257	1474	0	0	1651	607	384	520	513	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	10.3	67.5			53.2	53.2	44.5	44.5	44.5			
Effective Green, g (s)	10.3	67.5			53.2	53.2	44.5	44.5	44.5			
Actuated g/C Ratio	0.09	0.56			0.44	0.44	0.37	0.37	0.37			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	295	1991			2254	702	623	547	558			
v/s Ratio Prot	c0.07	0.42			0.32	c0.38	0.23	c0.35	0.34			
v/s Ratio Perm												
v/c Ratio	0.87	0.74			0.73	0.86	0.62	0.95	0.92			
Uniform Delay, d1	54.2	19.7			27.5	30.2	30.8	36.7	36.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	23.3	2.5			2.1	13.4	1.8	26.7	20.6			
Delay (s)	77.5	22.2			29.7	43.6	32.6	63.4	56.7			
Level of Service	E	C			C	D	C	E	E			
Approach Delay (s)		30.4			35.1			52.8			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM Average Control Delay	38.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	1381	694	95	1897	61	201	10	13	81	59	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	123	1534	771	106	2108	68	223	11	14	90	66	347
RTOR Reduction (vph)	0	0	375	0	4	0	0	12	0	0	0	134
Lane Group Flow (vph)	123	1534	396	106	2172	0	223	13	0	90	66	213
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	8.0	41.3	41.3	6.7	40.0		7.0	11.2		13.2	17.4	17.4
Effective Green, g (s)	8.0	41.3	41.3	6.7	40.0		7.0	11.2		13.2	17.4	17.4
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.45		0.08	0.13		0.15	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	160	2376	740	134	2290		272	411		264	367	312
v/s Ratio Prot	c0.07	0.30	0.25	0.06	c0.43		c0.06	0.00		0.05	0.04	c0.13
v/s Ratio Perm												
v/c Ratio	0.77	0.65	0.54	0.79	0.95		0.82	0.03		0.34	0.18	0.68
Uniform Delay, d1	39.3	18.0	16.7	40.2	23.2		40.1	33.8		33.7	29.6	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.6	0.6	0.7	26.4	9.3		17.3	0.0		0.8	0.2	6.0
Delay (s)	58.9	18.6	17.5	66.6	32.5		57.4	33.9		34.5	29.8	39.0
Level of Service	E	B	B	E	C		E	C		C	C	D
Approach Delay (s)		20.3			34.1			55.0			37.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	29.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	73.1%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1625	43	28	2045	40	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1806	48	31	2272	44	30
RTOR Reduction (vph)	0	16	0	0	0	28
Lane Group Flow (vph)	1806	32	31	2272	44	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	32.7	32.7	1.1	37.8	3.5	3.5
Effective Green, g (s)	32.7	32.7	1.1	37.8	3.5	3.5
Actuated g/C Ratio	0.66	0.66	0.02	0.77	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3373	1050	39	3899	244	112
v/s Ratio Prot	0.36		0.02	c0.45	c0.01	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.54	0.03	0.79	0.58	0.18	0.02
Uniform Delay, d1	4.3	2.9	24.0	2.4	21.6	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	68.4	0.2	0.4	0.1
Delay (s)	4.5	2.9	92.4	2.6	21.9	21.4
Level of Service	A	A	F	A	C	C
Approach Delay (s)	4.5			3.9	21.7	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	4.4	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	49.5%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis — Near Term + Construction (Phase 1&2) AM
5: Del Mar Heights Road & El Camino Real — 3/5/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	900	341	202	1387	95	244	103	79	164	306	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.96		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4876		3433	5036		3433	5085	1583	3433	4643	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4876		3433	5036		3433	5085	1583	3433	4643	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	248	1000	379	224	1541	106	271	114	88	182	340	468
RTOR Reduction (vph)	0	89	0	0	10	0	0	0	71	0	160	0
Lane Group Flow (vph)	248	1290	0	224	1637	0	271	114	17	182	648	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	7.0	25.2		8.8	27.0		7.0	14.2	14.2	9.7	16.9	
Effective Green, g (s)	7.0	25.2		8.8	27.0		7.0	14.2	14.2	9.7	16.9	
Actuated g/C Ratio	0.09	0.34		0.12	0.37		0.09	0.19	0.19	0.13	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	325	1663		409	1840		325	977	304	451	1062	
v/s Ratio Prot	c0.07	0.26		0.07	c0.33		c0.08	0.02	0.01	0.05	c0.14	
v/s Ratio Perm												
v/c Ratio	0.76	0.78		0.55	0.89		0.83	0.12	0.06	0.40	0.92dr	
Uniform Delay, d1	32.6	21.8		30.7	22.0		32.9	24.7	24.4	29.4	25.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.2	2.3		1.5	5.7		16.6	0.1	0.1	0.6	1.0	
Delay (s)	42.8	24.2		32.2	27.8		49.4	24.7	24.5	30.0	26.6	
Level of Service	D	C		C	C		D	C	C	C	C	
Approach Delay (s)		27.0			28.3			38.8			27.2	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	28.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis — Near Term + Construction (Phase 1&2) PM
1: Del Mar Heights Rd. & I-15 SB Ramps — 3/5/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	912	1194	0	905	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1013	1327	0	1006	332
RTOR Reduction (vph)	0	0	0	0	3	21
Lane Group Flow (vph)	0	1013	1327	0	1036	278
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		45.7	45.7		29.9	29.9
Effective Green, g (s)		45.7	45.7		29.9	29.9
Actuated g/C Ratio		0.52	0.52		0.34	0.34
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1848	1848		1172	492
v/s Ratio Prot		0.29	c0.37		c0.30	
v/s Ratio Perm						0.19
v/c Ratio		0.55	0.72		0.88	0.56
Uniform Delay, d1		14.0	16.0		27.2	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	1.4		8.2	1.5
Delay (s)		14.3	17.3		35.4	25.0
Level of Service		B	B		D	C
Approach Delay (s)		14.3	17.3		33.0	
Approach LOS		B	B		C	

Intersection Summary				
HCM Average Control Delay	22.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	11.9	
Intersection Capacity Utilization	70.7%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	1531	0	0	1165	884	644	20	805	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1501	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1501	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	1701	0	0	1294	982	716	22	894	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	515	0	6	6	0	0	0
Lane Group Flow (vph)	269	1701	0	0	1294	467	566	533	521	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	11.4	62.5			47.1	47.1	49.5	49.5	49.5			
Effective Green, g (s)	11.4	62.5			47.1	47.1	49.5	49.5	49.5			
Actuated g/C Ratio	0.10	0.52			0.39	0.39	0.41	0.41	0.41			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	326	1843			1996	621	693	619	620			
v/s Ratio Prot	0.08	c0.48			0.25	0.29	0.34	c0.36	0.35			
v/s Ratio Perm												
v/c Ratio	0.83	0.92			0.65	0.75	0.82	0.86	0.84			
Uniform Delay, d1	53.3	26.5			29.7	31.4	31.2	32.1	31.7			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	15.5	9.2			1.6	8.2	7.4	11.8	10.0			
Delay (s)	68.8	35.8			31.3	39.6	38.6	43.9	41.7			
Level of Service	E	D			C	D	D	D	D			
Approach Delay (s)		40.3			34.9			41.4			0.0	
Approach LOS		D			C			D			A	

Intersection Summary				
HCM Average Control Delay	38.5	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	98.2%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	2105	259	15	1336	29	637	67	138	28	30	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5069		3433	3181		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5069		3433	3181		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	277	2339	288	17	1484	32	708	74	153	31	33	91
RTOR Reduction (vph)	0	0	94	0	2	0	0	115	0	0	0	85
Lane Group Flow (vph)	277	2339	194	17	1514	0	708	112	0	31	33	6
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	17.7	54.1	54.1	1.7	38.1		22.1	25.1		3.9	6.9	6.9
Effective Green, g (s)	17.7	54.1	54.1	1.7	38.1		22.1	25.1		3.9	6.9	6.9
Actuated g/C Ratio	0.18	0.54	0.54	0.02	0.38		0.22	0.25		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	311	2729	850	30	1916		753	792		68	128	108
v/s Ratio Prot	c0.16	c0.46	0.12	0.01	0.30		c0.21	0.04		0.02	c0.02	0.00
v/s Ratio Perm												
v/c Ratio	0.89	0.86	0.23	0.57	0.79		0.94	0.14		0.46	0.26	0.06
Uniform Delay, d1	40.6	20.0	12.3	49.2	27.8		38.7	29.5		47.4	44.5	43.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	25.6	2.9	0.1	22.3	2.3		19.6	0.1		4.8	1.1	0.2
Delay (s)	66.2	22.9	12.5	71.4	30.1		58.3	29.5		52.2	45.6	44.1
Level of Service	E	C	B	E	C		E	C		D	D	D
Approach Delay (s)		26.0			30.6			51.4			46.1	
Approach LOS		C			C			D			D	

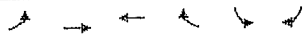
Intersection Summary				
HCM Average Control Delay	32.1	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	78.8%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰	↑↑↑	↰↰	↱
Volume (vph)	2285	32	21	1527	44	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2539	36	23	1697	49	32
RTOR Reduction (vph)	0	11	0	0	0	30
Lane Group Flow (vph)	2539	25	23	1697	49	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.8	38.8	0.7	43.5	3.7	3.7
Effective Green, g (s)	38.8	38.8	0.7	43.5	3.7	3.7
Actuated g/C Ratio	0.70	0.70	0.01	0.79	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3574	1113	22	4007	230	106
v/s Ratio Prot	c0.50		0.01	c0.33	c0.01	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.71	0.02	1.05	0.42	0.21	0.02
Uniform Delay, d1	4.9	2.5	27.3	1.9	24.4	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	206.7	0.1	0.5	0.1
Delay (s)	5.5	2.5	233.9	1.9	24.8	24.1
Level of Service	A	A	F	A	C	C
Approach Delay (s)	5.5			5.0	24.6	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	5.7	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	54.1%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑↱		↰↰	↑↑↱		↰↰	↑↑↑	↱	↰↰	↑↑↱	
Volume (vph)	456	1399	402	107	768	181	396	416	253	151	153	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4915		3433	4940		3433	5085	1583	3433	4653	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4915		3433	4940		3433	5085	1583	3433	4653	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	507	1554	447	119	853	201	440	462	281	168	170	222
RTOR Reduction (vph)	0	53	0	0	41	0	0	0	121	0	190	0
Lane Group Flow (vph)	507	1948	0	119	1013	0	440	462	160	168	202	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	16.5	40.4		4.6	28.5		10.1	15.2	15.2	6.7	11.8	
Effective Green, g (s)	16.5	40.4		4.6	28.5		10.1	15.2	15.2	6.7	11.8	
Actuated g/C Ratio	0.20	0.49		0.06	0.34		0.12	0.18	0.18	0.08	0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	683	2395		190	1698		418	932	290	277	662	
v/s Ratio Prot	c0.15	c0.40		0.03	0.21		c0.13	0.09	c0.10	0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.74	0.81		0.63	0.60		1.05	0.50	0.55	0.61	0.30	
Uniform Delay, d1	31.2	18.0		38.3	22.5		36.4	30.4	30.8	36.8	31.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.4	2.2		6.3	0.6		58.5	0.4	2.3	3.7	0.3	
Delay (s)	35.6	20.3		44.6	23.0		94.9	30.8	33.0	40.6	32.1	
Level of Service	D	C		D	C		F	C	C	D	C	
Approach Delay (s)		23.4			25.2			55.2			34.7	
Approach LOS		C			C			E			C	

Intersection Summary				
HCM Average Control Delay	31.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	82.9	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	71.4%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

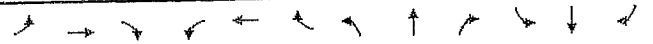


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰	↱
Volume (vph)	0	666	998	0	867	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		0.99	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3429	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3429	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	740	1109	0	963	362
RTOR Reduction (vph)	0	0	0	0	3	51
Lane Group Flow (vph)	0	740	1109	0	996	275
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		46.8	46.8		27.2	27.2
Effective Green, g (s)		46.8	46.8		27.2	27.2
Actuated g/C Ratio		0.54	0.54		0.32	0.32
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1928	1928		1086	456
v/s Ratio Prot		0.21	c0.31		c0.29	
v/s Ratio Perm						0.19
v/c Ratio		0.38	0.58		0.92	0.60
Uniform Delay, d1		11.3	13.0		28.3	24.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.4		11.9	2.2
Delay (s)		11.4	13.4		40.2	27.0
Level of Service		B	B		D	C
Approach Delay (s)		11.4	13.4		37.0	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	11.9
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

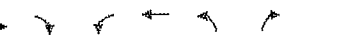
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↑↑	↱	↰	↔	↱			
Volume (vph)	224	1289	0	0	1434	903	373	0	781	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1457	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1457	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	249	1432	0	0	1593	1003	414	0	868	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	422	0	10	10	0	0	0
Lane Group Flow (vph)	249	1432	0	0	1593	581	373	448	441	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	12.2	65.1			48.9	48.9	46.9	46.9	46.9			
Effective Green, g (s)	12.2	65.1			48.9	48.9	46.9	46.9	46.9			
Actuated g/C Ratio	0.10	0.54			0.41	0.41	0.39	0.39	0.39			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	349	1920			2072	645	657	569	588			
v/s Ratio Prot	0.07	c0.40			0.31	c0.37	0.22	c0.31	0.29			
v/s Ratio Perm												
v/c Ratio	0.71	0.75			0.77	0.90	0.57	0.79	0.75			
Uniform Delay, d1	52.2	21.1			30.7	33.3	28.6	32.2	31.5			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	6.8	2.7			2.8	18.0	1.1	7.1	5.2			
Delay (s)	59.0	23.8			33.5	51.2	29.7	39.2	36.7			
Level of Service	E	C			C	D	C	D	D			
Approach Delay (s)		29.0			40.3			35.6			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM Average Control Delay	35.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



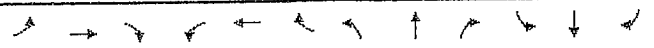
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	1222	674	92	1829	59	195	10	13	79	57	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5061		3433	3242		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	120	1358	749	102	2032	66	217	11	14	88	63	337
RTOR Reduction (vph)	0	0	378	0	4	0	0	12	0	0	0	136
Lane Group Flow (vph)	120	1358	371	102	2094	0	217	13	0	88	63	201
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	7.9	41.3	41.3	6.7	40.1		7.0	11.1		12.9	17.0	17.0
Effective Green, g (s)	7.9	41.3	41.3	6.7	40.1		7.0	11.1		12.9	17.0	17.0
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.46		0.08	0.13		0.15	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	159	2386	743	135	2306		273	409		259	360	306
v/s Ratio Prot	c0.07	0.27	0.23	0.06	c0.41		c0.06	0.00		0.05	0.03	c0.13
v/s Ratio Perm												
v/c Ratio	0.75	0.57	0.50	0.76	0.91		0.79	0.03		0.34	0.18	0.66
Uniform Delay, d1	39.1	16.9	16.2	39.8	22.2		39.8	33.7		33.7	29.6	32.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	18.2	0.3	0.5	21.1	5.7		14.7	0.0		0.8	0.2	5.0
Delay (s)	57.3	17.2	16.7	60.9	27.9		54.5	33.8		34.5	29.9	37.9
Level of Service	E	B	B	E	C		D	C		C	C	D
Approach Delay (s)		19.2			29.5			52.3			36.2	
Approach LOS		B			C			D			D	

Intersection Summary				
HCM Average Control Delay	26.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1271	43	28	1951	40	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1412	48	31	2168	44	30
RTOR Reduction (vph)	0	13	0	0	0	28
Lane Group Flow (vph)	1412	35	31	2168	44	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	47.6	47.6	1.8	53.4	4.0	4.0
Effective Green, g (s)	47.6	47.6	1.8	53.4	4.0	4.0
Actuated g/C Ratio	0.73	0.73	0.03	0.82	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3701	1152	94	4152	108	97
v/s Ratio Prot	0.28		0.01	c0.43	c0.02	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.38	0.03	0.33	0.52	0.41	0.02
Uniform Delay, d1	3.4	2.5	31.2	1.9	29.6	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	2.1	0.1	2.5	0.1
Delay (s)	3.4	2.5	33.3	2.0	32.1	28.9
Level of Service	A	A	C	A	C	C
Approach Delay (s)	3.4			2.5	30.8	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	3.4	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	47.7%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	217	874	212	188	1347	92	224	99	76	159	287	409
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4936		3433	5037		3433	5085	1583	3433	4637	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4936		3433	5037		3433	5085	1583	3433	4637	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	241	971	236	209	1497	102	249	110	84	177	319	454
RTOR Reduction (vph)	0	48	0	0	10	0	0	0	69	0	262	0
Lane Group Flow (vph)	241	1159	0	209	1589	0	249	110	15	177	511	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	9.7	24.0		9.6	23.9		7.0	12.5	12.5	9.3	14.8	
Effective Green, g (s)	9.7	24.0		9.6	23.9		7.0	12.5	12.5	9.3	14.8	
Actuated g/C Ratio	0.14	0.34		0.13	0.33		0.10	0.18	0.18	0.13	0.21	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	466	1659		462	1686		337	890	277	447	961	
v/s Ratio Prot	c0.07	0.23		0.06	c0.32		c0.07	0.02	0.01	0.05	c0.11	
v/s Ratio Perm												
v/c Ratio	0.52	0.70		0.45	0.94		0.74	0.12	0.05	0.40	0.53	
Uniform Delay, d1	28.7	20.6		28.5	23.1		31.3	24.8	24.5	28.5	25.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	1.3		0.7	11.1		8.2	0.1	0.1	0.6	0.6	
Delay (s)	29.6	21.9		29.2	34.2		39.5	24.9	24.6	29.1	25.8	
Level of Service	C	C		C	C		D	C	C	C	C	
Approach Delay (s)		23.2			33.6			33.1			26.4	
Approach LOS		C			C			C			C	

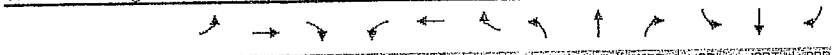
Intersection Summary				
HCM Average Control Delay	28.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	66.7%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	880	1140	0	862	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	978	1267	0	958	322
RTOR Reduction (vph)	0	0	0	0	3	25
Lane Group Flow (vph)	0	978	1267	0	987	265
Turn Type						Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.7	45.7		28.8	28.8
Effective Green, g (s)		45.7	45.7		28.8	28.8
Actuated g/C Ratio		0.53	0.53		0.33	0.33
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1872	1872		1143	480
v/s Ratio Prot		0.28	c0.36		c0.29	
v/s Ratio Perm						0.18
v/c Ratio		0.52	0.68		0.86	0.55
Uniform Delay, d1		13.2	14.9		27.0	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	1.0		7.0	1.4
Delay (s)		13.5	15.9		33.9	24.9
Level of Service		B	B		C	C
Approach Delay (s)		13.5	15.9		31.9	
Approach LOS		B	B		C	

Intersection Summary				
HCM Average Control Delay	21.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	11.9	
Intersection Capacity Utilization	68.5%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	1482	0	0	1042	814	615	10	762	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1497	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1497	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	261	1647	0	0	1158	904	683	11	847	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	528	0	2	2	0	0	0
Lane Group Flow (vph)	261	1647	0	0	1158	376	540	508	489	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	12.4	58.5			42.1	42.1	53.5	53.5	53.5			
Effective Green, g (s)	12.4	58.5			42.1	42.1	53.5	53.5	53.5			
Actuated g/C Ratio	0.10	0.49			0.35	0.35	0.45	0.45	0.45			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	355	1725			1784	555	749	667	671			
v/s Ratio Prot	0.08	c0.47			0.23	0.24	0.32	c0.34	0.32			
v/s Ratio Perm												
v/c Ratio	0.74	0.95			0.65	0.68	0.72	0.76	0.73			
Uniform Delay, d1	52.2	29.5			32.7	33.2	27.2	27.9	27.3			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	7.7	13.3			1.8	6.5	3.4	5.1	4.0			
Delay (s)	59.9	42.8			34.6	39.7	30.6	33.0	31.2			
Level of Service	E	D			C	D	C	C	C			
Approach Delay (s)		45.1			36.8			31.6			0.0	
Approach LOS		D			D			C			A	

Intersection Summary				
HCM Average Control Delay	38.2	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	92.2%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	2016	251	15	1184	28	618	65	134	27	29	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5068		3433	3181		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5068		3433	3181		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	2240	279	17	1316	31	687	72	149	30	32	89
RTOR Reduction (vph)	0	0	96	0	2	0	0	111	0	0	0	83
Lane Group Flow (vph)	269	2240	183	17	1345	0	687	110	0	30	32	6
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	17.4	53.0	53.0	1.7	37.3		22.2	25.1		3.9	6.8	6.8
Effective Green, g (s)	17.4	53.0	53.0	1.7	37.3		22.2	25.1		3.9	6.8	6.8
Actuated g/C Ratio	0.17	0.53	0.53	0.02	0.37		0.22	0.25		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	309	2703	842	30	1896		764	801		69	127	108
v/s Ratio Prot	c0.15	c0.44	0.12	0.01	0.27		c0.20	0.03		0.02	c0.02	0.00
v/s Ratio Perm												
v/c Ratio	0.87	0.83	0.22	0.57	0.71		0.90	0.14		0.43	0.25	0.06
Uniform Delay, d1	40.1	19.5	12.4	48.6	26.6		37.7	28.9		46.8	44.0	43.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	22.4	2.2	0.1	22.3	1.2		13.4	0.1		4.3	1.0	0.2
Delay (s)	62.5	21.8	12.5	70.9	27.8		51.0	29.0		51.2	45.1	43.7
Level of Service	E	C	B	E	C		D	C		D	D	D
Approach Delay (s)		24.8			28.4			45.7			45.5	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	30.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	99.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	76.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰↰	↑↑↑	↰	↱
Volume (vph)	2145	32	21	1189	44	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2383	36	23	1321	49	32
RTOR Reduction (vph)	0	11	0	0	0	30
Lane Group Flow (vph)	2383	25	23	1321	49	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.5	38.5	0.6	43.1	4.3	4.3
Effective Green, g (s)	38.5	38.5	0.6	43.1	4.3	4.3
Actuated g/C Ratio	0.69	0.69	0.01	0.78	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3534	1100	37	3956	137	123
v/s Ratio Prot	c0.47		0.01	c0.26	c0.03	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.67	0.02	0.62	0.33	0.36	0.02
Uniform Delay, d1	4.9	2.6	27.3	1.8	24.2	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	28.2	0.1	1.6	0.1
Delay (s)	5.4	2.6	55.5	1.9	25.8	23.7
Level of Service	A	A	E	A	C	C
Approach Delay (s)	5.3			2.8	25.0	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑↱		↰↰	↑↑↱		↰↰	↑↑↑	↱	↰↰	↑↑↱	
Volume (vph)	443	1358	362	102	746	176	270	394	238	147	146	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4925		3433	4939		3433	5085	1583	3433	4649	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4925		3433	4939		3433	5085	1583	3433	4649	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	492	1509	402	113	829	196	300	438	264	163	162	216
RTOR Reduction (vph)	0	44	0	0	43	0	0	0	216	0	178	0
Lane Group Flow (vph)	492	1867	0	113	982	0	300	438	48	163	200	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	16.0	33.5		6.5	24.0		7.2	13.8	13.8	6.8	13.4	
Effective Green, g (s)	16.0	33.5		6.5	24.0		7.2	13.8	13.8	6.8	13.4	
Actuated g/C Ratio	0.21	0.44		0.08	0.31		0.09	0.18	0.18	0.09	0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	717	2154		291	1547		323	916	285	305	813	
v/s Ratio Prot	c0.14	c0.38		0.03	0.20		c0.09	c0.09	0.03	0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.69	0.87		0.39	0.63		0.93	0.48	0.17	0.53	0.25	
Uniform Delay, d1	28.0	19.5		33.2	22.5		34.4	28.2	26.5	33.4	27.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.7	4.0		0.9	0.9		31.8	0.4	0.3	1.8	0.2	
Delay (s)	30.7	23.5		34.0	23.4		66.3	28.6	26.8	35.2	27.4	
Level of Service	C	C		C	C		E	C	C	D	C	
Approach Delay (s)		25.0			24.5			39.4			29.7	
Approach LOS		C			C			D			C	

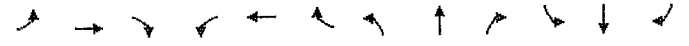
Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↰↑	↱
Volume (vph)	0	693	1028	0	947	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		0.99	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3430	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3430	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	770	1142	0	1052	373
RTOR Reduction (vph)	0	0	0	0	3	40
Lane Group Flow (vph)	0	770	1142	0	1086	296
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		46.1	46.1		29.6	29.6
Effective Green, g (s)		46.1	46.1		29.6	29.6
Actuated g/C Ratio		0.53	0.53		0.34	0.34
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1862	1862		1159	487
v/s Ratio Prot		0.22	c0.32		c0.32	
v/s Ratio Perm						0.21
v/c Ratio		0.41	0.61		0.94	0.61
Uniform Delay, d1		12.6	14.5		28.1	24.2
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.6		13.8	2.1
Delay (s)		12.7	15.1		41.9	26.3
Level of Service		B	B		D	C
Approach Delay (s)		12.7	15.1		38.2	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	11.9
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

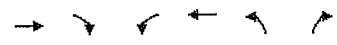
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰↑	↑↑			↑↑↑	↱	↰	↔	↱			
Volume (vph)	231	1329	0	0	1492	936	384	59	934	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1483	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1483	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	257	1477	0	0	1658	1040	427	66	1038	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	400	0	19	19	0	0	0
Lane Group Flow (vph)	257	1477	0	0	1658	640	384	557	552	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	10.0	67.0			53.0	53.0	45.0	45.0	45.0			
Effective Green, g (s)	10.0	67.0			53.0	53.0	45.0	45.0	45.0			
Actuated g/C Ratio	0.08	0.56			0.44	0.44	0.38	0.38	0.38			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	286	1976			2246	699	630	556	564			
v/s Ratio Prot	c0.07	0.42			0.33	c0.40	0.23	c0.38	0.37			
v/s Ratio Perm												
v/c Ratio	0.90	0.75			0.74	0.92	0.61	1.00	0.98			
Uniform Delay, d1	54.5	20.1			27.8	31.4	30.4	37.5	37.0			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	28.3	2.6			2.2	18.7	1.7	38.4	32.0			
Delay (s)	82.8	22.7			30.0	50.0	32.1	75.9	69.0			
Level of Service	F	C			C	D	C	E	E			
Approach Delay (s)		31.6			37.7			62.3			0.0	
Approach LOS		C			D			E			A	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	1448	694	95	1904	61	201	10	13	81	59	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5062		3433	3242		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5062		3433	3242		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	123	1609	771	106	2116	68	223	11	14	90	66	347
RTOR Reduction (vph)	0	0	375	0	4	0	0	12	0	0	0	134
Lane Group Flow (vph)	123	1609	396	106	2180	0	223	13	0	90	66	213
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	8.0	41.3	41.3	6.7	40.0		7.0	11.2		13.2	17.4	17.4
Effective Green, g (s)	8.0	41.3	41.3	6.7	40.0		7.0	11.2		13.2	17.4	17.4
Actuated g/C Ratio	0.09	0.47	0.47	0.08	0.45		0.08	0.13		0.15	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	160	2376	740	134	2290		272	411		264	367	312
v/s Ratio Prot	c0.07	0.32	0.25	0.06	c0.43		c0.06	0.00		0.05	0.04	c0.13
v/s Ratio Perm												
v/c Ratio	0.77	0.68	0.54	0.79	0.95		0.82	0.03		0.34	0.18	0.68
Uniform Delay, d1	39.3	18.4	16.7	40.2	23.3		40.1	33.8		33.7	29.6	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.6	0.8	0.7	26.4	9.9		17.3	0.0		0.8	0.2	6.0
Delay (s)	58.9	19.1	17.5	66.6	33.1		57.4	33.9		34.5	29.8	39.0
Level of Service	E	B	B	E	C		E	C		C	C	D
Approach Delay (s)		20.6			34.7			55.0			37.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	29.4	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	73.2%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1689	47	31	2052	40	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1877	52	34	2280	44	30
RTOR Reduction (vph)	0	14	0	0	0	28
Lane Group Flow (vph)	1877	38	34	2280	44	2
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	50.9	50.9	1.9	56.8	4.1	4.1
Effective Green, g (s)	50.9	50.9	1.9	56.8	4.1	4.1
Actuated g/C Ratio	0.74	0.74	0.03	0.82	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3757	1169	95	4192	105	94
v/s Ratio Prot	0.37		0.01	c0.45	c0.02	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.50	0.03	0.36	0.54	0.42	0.02
Uniform Delay, d1	3.7	2.4	32.9	1.9	31.3	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	2.3	0.1	2.7	0.1
Delay (s)	3.8	2.4	35.2	2.1	33.9	30.6
Level of Service	A	A	D	A	C	C
Approach Delay (s)	3.8			2.6	32.6	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	3.6	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	49.6%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	900	405	206	1388	95	253	104	79	164	312	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.95		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4849		3433	5036		3433	5085	1583	3433	4647	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4849		3433	5036		3433	5085	1583	3433	4647	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	248	1000	450	229	1542	106	281	116	88	182	347	468
RTOR Reduction (vph)	0	106	0	0	10	0	0	0	71	0	160	0
Lane Group Flow (vph)	248	1344	0	229	1638	0	281	116	17	182	655	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	7.0	25.2		8.9	27.1		7.0	14.2	14.2	9.7	16.9	
Effective Green, g (s)	7.0	25.2		8.9	27.1		7.0	14.2	14.2	9.7	16.9	
Actuated g/C Ratio	0.09	0.34		0.12	0.37		0.09	0.19	0.19	0.13	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	325	1651		413	1844		325	976	304	450	1061	
v/s Ratio Prot	c0.07	0.28		0.07	c0.33		c0.08	0.02	0.01	0.05	c0.14	
v/s Ratio Perm												
v/c Ratio	0.76	0.81		0.55	0.89		0.86	0.12	0.06	0.40	0.92dr	
Uniform Delay, d1	32.7	22.3		30.7	22.0		33.0	24.7	24.4	29.5	25.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.2	3.2		1.6	5.6		20.5	0.1	0.1	0.6	1.1	
Delay (s)	42.9	25.5		32.3	27.7		53.6	24.8	24.5	30.1	26.7	
Level of Service	D	C		C	C		D	C	C	C	C	
Approach Delay (s)		28.0			28.2			41.4			27.3	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	29.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	71.3%	ICU Level of Service	C	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	916	1206	0	915	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3	6.3		5.6	5.6
Lane Util. Factor		0.95	0.95		0.97	0.91
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	3539		3431	1441
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	3539		3431	1441
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1018	1340	0	1017	332
RTOR Reduction (vph)	0	0	0	0	3	20
Lane Group Flow (vph)	0	1018	1340	0	1047	279
Turn Type						Perm
Protected Phases		2 6	6 2		4	
Permitted Phases						4
Actuated Green, G (s)		45.7	45.7		30.1	30.1
Effective Green, g (s)		45.7	45.7		30.1	30.1
Actuated g/C Ratio		0.52	0.52		0.34	0.34
Clearance Time (s)					5.6	5.6
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)		1844	1844		1178	495
v/s Ratio Prot		0.29	c0.38		c0.31	
v/s Ratio Perm						0.19
v/c Ratio		0.55	0.73		0.89	0.56
Uniform Delay, d1		14.1	16.2		27.2	23.4
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	1.5		8.5	1.5
Delay (s)		14.5	17.6		35.7	24.9
Level of Service		B	B		D	C
Approach Delay (s)		14.5	17.6		33.3	
Approach LOS		B	B		C	

Intersection Summary				
HCM Average Control Delay	22.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	87.7	Sum of lost time (s)	11.9	
Intersection Capacity Utilization	71.1%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	242	1533	0	0	1216	910	649	24	816	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3539			5085	1583	1681	1500	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3539			5085	1583	1681	1500	1504			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	269	1703	0	0	1351	1011	721	27	907	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	509	0	6	6	0	0	0
Lane Group Flow (vph)	269	1703	0	0	1351	502	577	546	520	0	0	0
Turn Type	Prot					Prot	Split		Prot			
Protected Phases	5	2			6	6	8	8	8			
Permitted Phases												
Actuated Green, G (s)	11.2	62.1			46.9	46.9	49.9	49.9	49.9			
Effective Green, g (s)	11.2	62.1			46.9	46.9	49.9	49.9	49.9			
Actuated g/C Ratio	0.09	0.52			0.39	0.39	0.42	0.42	0.42			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	320	1831			1987	619	699	624	625			
v/s Ratio Prot	0.08	c0.48			0.27	0.32	0.34	c0.36	0.35			
v/s Ratio Perm												
v/c Ratio	0.84	0.93			0.68	0.81	0.83	0.88	0.83			
Uniform Delay, d1	53.5	26.9			30.3	32.6	31.2	32.2	31.3			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	17.7	9.9			1.9	11.0	7.9	13.0	9.3			
Delay (s)	71.2	36.9			32.2	43.6	39.1	45.2	40.6			
Level of Service	E	D			C	D	D	D	D			
Approach Delay (s)		41.6			37.1			41.6			0.0	
Approach LOS		D			D			D			A	

Intersection Summary				
HCM Average Control Delay	39.8	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.91			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	100.2%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	2122	259	15	1400	29	637	67	138	28	30	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5070		3433	3181		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5070		3433	3181		1770	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	277	2358	288	17	1556	32	708	74	153	31	33	91
RTOR Reduction (vph)	0	0	92	0	2	0	0	115	0	0	0	85
Lane Group Flow (vph)	277	2358	196	17	1586	0	708	112	0	31	33	6
Turn Type	Prot		Prot	Prot			Prot			Prot		Prot
Protected Phases	7	4	4	3	8		5	2		1	6	6
Permitted Phases												
Actuated Green, G (s)	17.7	54.8	54.8	1.7	38.8		22.1	25.1		3.9	6.9	6.9
Effective Green, g (s)	17.7	54.8	54.8	1.7	38.8		22.1	25.1		3.9	6.9	6.9
Actuated g/C Ratio	0.17	0.54	0.54	0.02	0.38		0.22	0.25		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	309	2745	855	30	1938		747	787		68	127	108
v/s Ratio Prot	c0.16	c0.46	0.12	0.01	0.31		c0.21	0.04		0.02	c0.02	0.00
v/s Ratio Perm												
v/c Ratio	0.90	0.86	0.23	0.57	0.82		0.95	0.14		0.46	0.26	0.06
Uniform Delay, d1	41.0	20.0	12.3	49.5	28.2		39.1	29.8		47.8	44.9	44.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	26.5	2.9	0.1	22.3	2.8		20.9	0.1		4.8	1.1	0.2
Delay (s)	67.5	22.9	12.4	71.8	31.0		60.1	29.9		52.5	46.0	44.5
Level of Service	E	C	B	E	C		E	C		D	D	D
Approach Delay (s)		26.1			31.4			52.7			46.4	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	32.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	101.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	79.2%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰↰	↑↑↑	↰	↱
Volume (vph)	2301	33	22	1588	47	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2557	37	24	1764	52	36
RTOR Reduction (vph)	0	11	0	0	0	33
Lane Group Flow (vph)	2557	26	24	1764	52	3
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	39.6	39.6	0.6	44.2	4.3	4.3
Effective Green, g (s)	39.6	39.6	0.6	44.2	4.3	4.3
Actuated g/C Ratio	0.70	0.70	0.01	0.78	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3564	1110	36	3978	135	120
v/s Ratio Prot	c0.50		0.01	c0.35	c0.03	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.72	0.02	0.67	0.44	0.39	0.02
Uniform Delay, d1	5.1	2.6	27.9	2.0	24.8	24.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	38.0	0.1	1.8	0.1
Delay (s)	5.8	2.6	65.8	2.1	26.7	24.2
Level of Service	A	A	E	A	C	C
Approach Delay (s)	5.7			3.0	25.7	
Approach LOS	A			A	C	

Intersection Summary				
HCM Average Control Delay	5.0	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	54.5%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑↱		↰↰	↑↑↱		↰↰	↑↑↑	↱	↰↰	↑↑↱	
Volume (vph)	456	1400	419	108	769	181	458	421	257	151	154	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	4909		3433	4940		3433	5085	1583	3433	4654	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	4909		3433	4940		3433	5085	1583	3433	4654	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	507	1556	466	120	854	201	509	468	286	168	171	222
RTOR Reduction (vph)	0	55	0	0	41	0	0	0	121	0	190	0
Lane Group Flow (vph)	507	1967	0	120	1014	0	509	468	165	168	203	0
Turn Type	Prot			Prot			Prot		Prot	Prot		
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	16.5	40.4		4.6	28.5		10.1	15.4	15.4	6.7	12.0	
Effective Green, g (s)	16.5	40.4		4.6	28.5		10.1	15.4	15.4	6.7	12.0	
Actuated g/C Ratio	0.20	0.49		0.06	0.34		0.12	0.19	0.19	0.08	0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	682	2387		190	1694		417	942	293	277	672	
v/s Ratio Prot	c0.15	c0.40		0.03	0.21		c0.15	0.09	c0.10	0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.74	0.82		0.63	0.60		1.22	0.50	0.56	0.61	0.30	
Uniform Delay, d1	31.3	18.3		38.4	22.6		36.5	30.4	30.8	36.9	31.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.4	2.4		6.7	0.6		119.2	0.4	2.5	3.7	0.3	
Delay (s)	35.7	20.7		45.1	23.1		155.7	30.8	33.3	40.7	32.1	
Level of Service	D	C		D	C		F	C	C	D	C	
Approach Delay (s)		23.7			25.4			81.7			34.6	
Approach LOS		C			C			F			C	

Intersection Summary				
HCM Average Control Delay	38.4	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	73.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				