Appendix C

San Luis Ranch Near-Term Transportation Mitigations Supplement

Central Coast Transportation Consulting
Traffic Engineering & Transportation Planning

MEMORANDUM

Date: April 12, 2018

To: Jake Hudson, City of San Luis Obispo

From: Joe Fernandez and Travis Low, CCTC

Subject: San Luis Ranch Near Term Transportation Mitigations Supplement

This memorandum summarizes our supplemental analysis of near term (2025) mitigation measures for the San Luis Ranch project. The Transportation section of the San Luis Ranch Final Environmental Impact Report (FEIR) summarizes transportation impacts and mitigation measures. Many of the impacts are identified as being mitigated by construction of the Prado Road overcrossing and northbound US 101 ramps. The applicant proposes modification of the project description adjusting the phasing plan such that phases can develop in any order, and revising the mitigation measure monitoring program to allow occupancy of any phase prior to constructing the Prado Road overpass and northbound ramps.

The purpose of this supplemental analysis is to determine what measures, if any, would adequately mitigate project impacts under near term conditions with the San Luis Ranch project in place but without the Prado Road overcrossing.

This analysis focuses on eleven intersections and seven roadway segments where impacts were identified in the FEIR and where the construction of the Prado Road overcrossing was identified as a mitigation measure. Additionally, eleven freeway locations with unacceptable operations were analyzed. For each location, the intent of this work is to identify what alternative mitigation measures, if any, would preclude the need for the overcrossing for the near term (2025).

METHODOLOGY

Our analysis uses the Synchro analysis files provided by Omni-Means, who prepared the *San Luis Ranch Specific Plan Multimodal Transportation Impact Analysis Report* ('TIA', November 2016). No changes were made to the traffic volumes or the land use assumptions used to develop the volumes. Intersection level of service (LOS) was determined using Synchro 10 and queue lengths were determined using the companion SimTraffic microsimulation software by taking the average of five runs. Note that the TIA used the Synchro 9 software package, which has now been replaced by the Synchro 10 package. The TIA evaluated segment impacts using an in-house spreadsheet that was not available for use.

Freeway impacts had been previously evaluated using analysis results from HCS 2010. For weaving segments, the Leisch Method had additionally been used to evaluate impacts. In this memorandum, only weaving segment results using the Leisch Method are presented, since its LOS results were generally worse compared to HCS 2010.

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INTERSECTION ANALYSIS

Table 1 below summarizes intersection LOS under the near term, near term plus project, and mitigated near term plus project scenarios. Mitigation measures are identified for each intersection where project impacts to LOS are expected. Queue impacts are discussed in the next section. Some locations have queue impacts but not LOS impacts; in these cases the queue mitigation is also shown in Table 1 for consistency with Table 2. Synchro output sheets are provided in Appendix A.

Table 1: Intersection Level of Service Analysis

ID	Intersection	Peak Hour	Near Term V/C[1]	Near Term Delay[2]	Near Term LOS	Near Term+Project V/C[1]	Near Term+Project Delay[2]	Near Term+Project LOS	Mitigated Near Term+Project V/C[1]	Mitigated Near Term+Project Delay[2]	Mitigated Near Term+Project LOS	Mitigation
1	Madonna/LOVR	AM		25.9	C		27.9	C		27.9	C	Adjust corridor signal timing as needed for optimum operations. This will reduce but may not eliminate the impact.
		PM		51.8	D	**1.05**	**56.3**	**E**	**1.05**	**56.3**	**E**	
2	Madonna/Oceanaire	AM		21.1	C		21.3	C		21.3	C	Extend WBR turn pocket to 200'. This would require widening the bridge structure which is not a currently programmed project and may result in secondary environmental impacts. Therefore this improvement is considered infeasible now.
		PM		17.7	B		19.0	B		19.0	B	
3	Madonna/Dalidio	AM		9.7	A		47.0	D		19.1	B	Install second WBL turn pocket and extend both to 310'; Remove third WBT lane and third receiving lane on west leg; Install 100' EBR turn pocket; Provide split phase for NB and SB; Provide NBR overlap phase. This eliminates the impact but may be infeasible due to right-of-way needs.
		PM		42.0	D	**2.78**	**153.7**	**F**		31.5	C	
5	Madonna/US 101 SB Ramps	AM	**1.22**	**44.0**	**D**	**1.26**	**44.0**	**D**	**1.26**	**43.6**	**D**	Install 100' EBR turn pocket; Extend EBL turn pocket to 150'. Installing the EBR would require review and evaluation by Caltrans. Therefore this impact is considered unavoidable due to the uncertainties associated with the Caltrans project development process.
		PM		25.0	C		24.9	C		23.9	C	
6	Madonna/US 101 NB Ramps	AM		18.3	B		19.4	B		19.5	B	Extend NBL turn pocket to 275'. This would require review and evaluation by Caltrans. Therefore this impact is considered unavoidable due to the uncertainties associated with the Caltrans project development process.
		PM		21.0	C		22.2	C		22.8	C	
7	Madonna/Higuera	AM		32.7	C		33.3	C		35.7	D	Convert one NB through lane to left turn "trap" lane; Extend EBR turn pocket to 275'. Extending the EBR would require expansion into the Caltrans maintenance headquarters right-of-way. Therefore this impact is considered unavoidable due to the uncertainties associated with the Caltrans project development process.
		PM		38.5	D		43.6	D		44.1	D	
10	LOVR/Auto Park	AM		0.6 (19.9)	- (C)		0.6 (20.8)	- (C)		3.1	A	Signalize intersection.
		PM	**0.57**	**1.6 (59.2)**	**- (F)**	**0.60**	**1.8 (65.6)**	**- (F)**		3.7	A	
11	LOVR/Calle Joaquin	AM		14.9	B		15.2	B		15.2	B	Extend SBR turn pocket to 200'. This is considered infeasible due to likely secondary impacts to sensitive wetland areas.
		PM		12.2	B		12.5	B		12.5	B	
13	LOVR/US 101 NB Ramps	AM		23.8	C		25.1	C		25.1	C	Extend SBR turn pocket to 325'. This would require bridge widening over US 101. Therefore this impact is considered unavoidable due to the uncertainties associated with the Caltrans project development process.
		PM		24.2	C		23.6	C		23.6	C	
15	Higuera/Suburban	AM		8.3	A		8.4	A		8.0	A	Convert WBR turn pocket to shared WBL/R. This improvement was required as part of the Avila Ranch EIR.
		PM		19.9	B		20.2	C		15.0	B	
16	Higuera/Tank Farm	AM		37.5	D		37.8	D		37.8	D	Extend NBR turn pocket to 200'; Extend SBL turn pocket to 250'. Extending the NBR may be infeasible due to right-of-way needs.
		PM		24.7	C		25.0	C		25.0	C	

1. Volume to capacity ratio reported for worst movement, for unacceptable LOS only.
2. HCM 2010 average control delay in seconds per vehicle (HCM 2000 used for Intersections 2 and 13). For side-street-stop controlled intersections the worst approach's delay is reported in parentheses next to the overall intersection delay.
Note: Unacceptable operations shown in bold text.

Table 2 below summarizes queue lengths under each scenario. Mitigation measures are identified for each intersection where project impacts to queue lengths are expected. Some locations have LOS impacts but not queue impacts; in these cases the LOS mitigation is also shown in Table 2 for consistency with Table 1. SimTraffic output sheets are provided in Appendix B. Note that due to the stochastic (random) nature of microsimulation each run produces different results.

Table 2: Queue Analysis

ID	Intersection	Movement	Storage Length (ft)	Peak Hour	95th Percentile Queues (ft)[1] Near Term	Near Term +Project	Mitigated Near Term +Project	Mitigation
1	Madonna/LOVR	NBR	175	AM	105	106	124	Adjust corridor signal timing as needed for optimum operations. This will reduce but may not eliminate the impact.
				PM	**246**	**264**	**269**	
2	Madonna/Oceanaire	WBR	100	AM	45	62	45	Extend WBR turn pocket to 200'. This would require widening the bridge structure which is not a currently programmed project and may result in secondary environmental impacts. Therefore this improvement is considered infeasible now.
				PM	**163**	**122**	163	
3	Madonna/Dalidio	WBL	275	AM	51	177	110	Install second WBL turn pocket and extend both to 310'; Remove third WBT lane and third receiving lane on west leg; Install 100' EBR turn pocket; Provide split phase for NB and SB; Provide NBR overlap phase. This eliminates the impact but may be infeasible due to right-of-way needs.
				PM	127	**335**	213	
		WBT/R	570	AM	74	132	126	
				PM	309	**602**	317	
5	Madonna/US 101 SB Ramps	EBL	100	AM	80	84	120	Install 100' EBR turn pocket; Extend EBL turn pocket to 150'. Installing the EBR would require review and evaluation by Caltrans. Therefore this impact is considered unavoidable due to the uncertainties associated with the Caltrans project development process.
				PM	96	**123**	120	
		WBL	260	AM	164	173	176	
				PM	**389**	**546**	232	
6	Madonna/US 101 NB Ramps	NBL	185	AM	147	150	158	Extend NBL turn pocket to 275'. This would require review and evaluation by Caltrans. Therefore this impact is considered unavoidable due to the uncertainties associated with the Caltrans project development process.
				PM	164	**265**	174	
7	Madonna/Higuera	EBR	150	AM	**221**	**247**	158	Convert one NB through lane to left turn "trap" lane; Extend EBR turn pocket to 275'. Extending the EBR would require expansion into the Caltrans maintenance headquarters right-of-way. Therefore this impact is considered unavoidable due to the uncertainties associated with the Caltrans project development process.
				PM	**186**	**265**	246	
		NBL	160	AM	155	**167**	98	
				PM	**349**	**372**	192	
		SBT/L	250	AM	163	162	159	
				PM	221	**414**	**262**	
		SBR	340	AM	-	-	-	
				PM	46	**585**	114	
10	LOVR/Auto Park	WBR	175	AM	25	26	23	Signalize intersection.
				PM	42	45	50	
11	LOVR/Calle Joaquin	SBR	115	AM	39	89	91	Extend SBR turn pocket to 200'. This is considered infeasible due to likely secondary impacts to sensitive wetland areas.
				PM	**134**	**133**	183	
13	LOVR/US 101 NB Ramps	SBR	135	AM	**181**	**204**	317	Extend SBR turn pocket to 325'. This would require bridge widening over US 101. Therefore this impact is considered unavoidable due to the uncertainties associated with the Caltrans project development process.
				PM	**179**	**173**	142	
15	Higuera/Suburban	WBR	170	AM	68	83	134	Convert WBR turn pocket to shared WBL/R. This improvement was required as part of the Avila Ranch EIR.
				PM	**274**	**286**	**244**	
		SBL	200	AM	141	**229**	158	
				PM	**288**	**261**	**262**	
16	Higuera/Tank Farm	NBR	100	AM	**192**	**186**	**215**	Extend NBR turn pocket to 200'; Extend SBL turn pocket to 250'. Extending the NBR may be infeasible due to right-of-way needs.
				PM	**173**	**155**	160	
		SBL	165	AM	**197**	**201**	223	
				PM	**231**	**224**	**264**	

1. Queue length that would not be exceeded 95 percent of the time.
Note: Bold indicates queue length longer than storage length.

ROADWAY SEGMENT ANALYSIS

The FEIR identified seventeen modal segment impacts under near term plus project conditions that would be mitigated by the Prado Road overcrossing decreasing traffic volumes on the segments and therefore increasing travel speeds. Three were auto impacts where the project degraded average segment travel speed by 2 miles per hour or less. Two were impacts to transit routes where the transit score degraded due to slower average travel speeds along the segment. Eleven were pedestrian impacts, and one was a bicycle impact, where the score degraded due to increased traffic volumes along the segment. Table 3 below summarizes roadway segment impacts.

The TIA consultant used a proprietary in-house spreadsheet to calculate roadway segment service levels. Because this spreadsheet is proprietary, it was unavailable for use in developing alternative mitigation measures. However, because all of the auto and transit segment impacts were related to roadway speeds, it would be necessary to increase capacity by adding travel lanes or improving corridor signal timing. Adding travel lanes is considered infeasible along these segments of Madonna Road and Los Osos Valley Road and adjusting corridor signal timings would reduce the severity of, but not eliminate, the impact. The transit impacts could also be mitigated by reducing service headways by five minutes or increasing on-time performance by at least one percent.

Constructing parallel Class I multiuse paths would reduce the severity of, but may not eliminate, the pedestrian and bicycle impacts. Note that portions of the paths would cross Caltrans right-of-way, and would require Caltrans review and approval. It is unknown if Caltrans would approve the intersection configuration changes necessary to accommodate the paths, so the feasibility of this improvement is also uncertain.

Table 3: Roadway Segment Analysis

			Near Term								Near Term + Project								
			AM Peak				PM Peak				AM Peak				PM Peak				
ID	Segment	Direction	Travel Speed (mph)	BFFS (mph)	Travel Speed/ BFFS	LOS	Travel Speed (mph)	BFFS (mph)	Travel Speed/ BFFS	LOS	Travel Speed (mph)	BFFS (mph)	Travel Speed/ BFFS	LOS	Travel Speed (mph)	BFFS (mph)	Travel Speed/ BFFS	LOS	Mitigation
Auto																			
1	Madonna Road - Oceanaire to Los Osos Valley	WB	22.1	42.1	52%	C	**11.8**	**42.1**	**28%**	**F**	21.7	42.1	51%	C	**10.2**	**42.1**	**24%**	**F**	Adjust corridor signal timing as needed for optimum operations. This will reduce but may not eliminate the impact.
13	Los Osos Valley - Madonna to Froom Ranch	SB	24.0	41.9	57%	C	**16.9**	**41.8**	**41%**	**D**	22.7	41.9	54%	C	**15.2**	**41.8**	**36%**	**E**	
17	Los Osos Valley - US 101 NB Ramps to S. Higuera	EB	**17.5**	**39.4**	**45%**	**D**	15.8	39.4	40%	D	**16.9**	**39.4**	**43%**	**D**	15.6	39.4	39%	E	
			Score			**LOS**	**Score**			**LOS**	**Score**			**LOS**	**Score**			**LOS**	
Transit																			
13	Los Osos Valley - Madonna to Froom Ranch (Route 4)	SB	**4.51**			**E**	**4.56**			**E**	**4.53**			**E**	**4.56**			**E**	
13	Los Osos Valley - Madonna to Froom Ranch (Route 5)	SB	**4.60**			**E**	**4.38**			**E**	**4.61**			**E**	**4.38**			**E**	
			Score			**LOS**	**Score**			**LOS**	**Score**			**LOS**	**Score**			**LOS**	Construct parallel Class I multiuse paths. This will reduce but may not eliminate the impact. Path construction may occur within Caltrans right-of-way and is subject to Caltrans approval and permitting, which is uncertain at this time.
Pedestrian																			
4	Madonna Road - US 101 SB Ramps to El Mercado	WB	**3.62**			**D**	**3.79**			**D**	**3.68**			**D**	**3.87**			**D**	
		EB	**3.70**			**D**	**3.77**			**D**	**3.77**			**D**	**3.87**			**D**	
13	Los Osos Valley - Madonna to Froom Ranch	SB	**3.86**			**D**	**3.99**			**D**	**3.86**			**D**	**3.99**			**D**	
		NB	**3.74**			**F**	**4.19**			**F**	**3.75**			**F**	**4.19**			**F**	
14	Los Osos Valley - Froom Ranch to Calle Joaquin	SB	**3.84**			**D**	**4.05**			**D**	**3.87**			**D**	**4.08**			**D**	
		NB	**3.75**			**D**	**4.09**			**D**	**3.75**			**D**	**4.11**			**D**	
15	Los Osos Valley - Calle Joaquin to US 101 SB Ramps	SB	**3.69**			**D**	**3.70**			**D**	**3.71**			**D**	**3.72**			**D**	
		NB	**3.66**			**D**	**4.01**			**D**	**3.68**			**D**	**4.03**			**D**	
16	Los Osos Valley - US 101 SB Ramps to US 101 NB Ramps	SB	**3.93**			**D**	**3.91**			**D**	**3.94**			**D**	**3.92**			**D**	
		NB	**3.82**			**D**	3.27			C	**3.83**			**D**	3.29			C	
17	Los Osos Valley - US 101 NB Ramps to S. Higuera	EB	**3.94**			**D**	**3.78**			**D**	**3.95**			**D**	**3.79**			**D**	
		WB	**3.88**			**D**	**4.27**			**E**	**3.89**			**D**	**4.29**			**E**	
			Score			**LOS**	**Score**			**LOS**	**Score**			**LOS**	**Score**			**LOS**	
Bicycle																			
4	Madonna Road - US 101 SB Ramps to El Mercado	WB	3.96			D	**4.35**			**E**	3.98			D	**4.38**			**E**	
		EB	3.61			D	3.62			D	3.64			D	3.65			D	

Note: Unacceptable operations shown in bold text.

FREEWAY ANALYSIS

For the Freeway Analysis, unacceptable operations under two scenarios were compared: Near Term Plus Project with Overcrossing and Near Term Plus Project without Overcrossing. Operational results for these scenarios were obtained from the *Draft US 101/Prado Road Interchange Traffic Operations Analysis Report* (Omni-Means, September 2017) and *San Luis Ranch Specific Plan Multimodal Transportation Impact Analysis Report Near Term US 101 Mainline, Ramps, and Weave Operations* (Omni-Means, April 2018), which are hereby incorporated by reference. The findings indicate that on three segments, eliminating the Prado Road overcrossing would result in or worsen unacceptable operations. Table 4 below summarizes the freeway impacts.

Table 4: Freeway Analysis

				Near Term+Project with Overcrossing				Near Term+Project without Overcrossing				
Direction	**Location**	**Segment Type**	**Peak Hour**	**No. of Lanes**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**No. of Lanes**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Finding**
Freeway, Merge, and Diverge Segments[1]												
US 101 NB	South of LOVR	Freeway	AM	2	**3,186**	**29.1**	**D**	2	**3,186**	**29.1**	**D**	The Overcrossing does not change the unacceptable density.
			PM		2,538	22.3	C		2,538	22.3	C	
	LOVR Off Ramp	Diverge	AM	1	**629**	**33.5**	**D**	1	**643**	**33.5**	**D**	The Overcrossing does not change the unacceptable density.
			PM		630	27.1	C		620	27.1	C	
	Prado Off Ramp	Diverge	AM	1	**371**	**29.6**	**D**	1	**311**	**29.9**	**D**	Eliminating the Overcrossing would worsen unacceptable operations.
			PM		191	26.3	C		145	26.4	C	
US 101 SB	Madonna On Ramp	Merge	AM	1	232	16.5	B	1	232	16.5	B	The Overcrossing does not change the unacceptable density.
			PM		**409**	**28.6**	**D**		**409**	**28.6**	**D**	
	South of Madonna	Freeway	AM	2	1,881	16.5	B	2	1,881	16.5	B	The Overcrossing does not change the unacceptable density.
			PM		**3,261**	**30.0**	**D**		**3,261**	**30.0**	**D**	
	LOVR Off Ramp	Diverge	AM	1	655	17.9	B	1	676	17.9	B	The Overcrossing does not change the unacceptable density.
			PM		**573**	**31.5**	**D**		**573**	**31.5**	**D**	
	LOVR On Ramp	Merge	AM	1	413	17.3	B	1	413	17.1	B	The Overcrossing does not change the unacceptable density.
			PM		**829**	**33.8**	**D**		**829**	**33.8**	**D**	
	South of LOVR	Freeway	AM	2	1,639	14.4	B	2	1,618	14.2	B	The Overcrossing does not change the unacceptable density.
			PM		**3,517**	**33.6**	**D**		**3,517**	**33.6**	**D**	
				No. of Lanes	**Length (ft)**	**Total Volume**	**LOS**	**No. of Lanes**	**Length (ft)**	**Total Volume**	**LOS**	
Weave Segments[2]												
US 101 NB	North of Prado	Weave	AM	3	940	3,317	C	2	**2,140**	**3,112**	**E**	Eliminating the Overcrossing would result in unacceptable operations.
			PM		940	3,137	C		**2,140**	**2,146**	**E**	
	North of Madonna	Weave	AM	3	1,330	3,421	C/D	3	**1,330**	**3,523**	**D**	Eliminating the Overcrossing would result in unacceptable operations.
			PM		**1,330**	**3,795**	**D**		**1,330**	**3,754**	**D**	
US 101 SB	South of Marsh	Weave	AM	3	2,065	2,804	C	3	2,065	2,804	C	The Overcrossing does not change the unacceptable operations.
			PM		**2,065**	**4,184**	**E**		**2,065**	**4,184**	**E**	

1. HCS 2010 Analysis
2. Leisch Method Analysis
Note: Unacceptable operations shown in bold text.

TRAVEL DEMAND MANAGEMENT

In addition to the physical capacity-increasing roadway improvements, the project could implement a Travel Demand Management (TDM) plan to reduce vehicular trips to minimize impacts to transportation facilities. TDM plans generally incentivize behavior to increase transportation system efficiency.

TDM measures vary for different trip types and are divided here into strategies targeting the proposed commercial uses, which make up roughly 70 percent of the project's vehicular trips, and residential uses, which make up nearly 30 percent of the project's vehicular trips. We recommend the project develop and implement a TDM plan to the satisfaction of the City Public Works director until the Prado Road Overpass and NB Ramps are completed. Its recommended that the plan incorporate the following features, and that the effectiveness of these measures be monitored regularly and adjusted as needed.

Commercial Trip Reduction Program

Commercial trip reduction programs are targeted primarily at employees since their travel behavior is easier to influence than customers.

- Implement a commute trip reduction program to reduce employee trips to the project's commercial uses. Require commercial tenants' participation in SLO Regional Rideshare's *Commute Survey and Trip Reduction Plan* program. This program is provided at no cost to the employer and results in a Trip Reduction Plan prepared by Rideshare staff.
- Create an on-site bike share program open to employees and residents of the project. Monitor usage and supply bicycles as needed to accommodate demand.
- Provide close-in parking reserved for carpools and vanpools.
- Provide transit pass subsidies to employees who do not drive to work.
- Provide on-site bike lockers and showers.
- Work with Fun Ride and/or Zip Car to provide permanent car sharing parking spot(s) on site.
- Incorporate a transit stop into the project's site plan and work with SLO Transit to adjust routes as appropriate.

Residential Trip Reduction Program

- Unbundle parking spaces from multi-family residential units. This enables households that do not use parking spaces to save on housing costs. Offer reserved parking spaces for lease or sale to households who need them. Adjust the program as needed to ensure there is no parking spillover into nearby areas.
- Create an on-site bike share program open to employees and residents of the project. Monitor usage and supply bicycles as needed to accommodate demand.
- Provide an on-site bicycle repair station and secured bicycle parking.
- Create a bus pass subsidy program and/or shuttle bus to reduce vehicle trips.

Implementing these TDM measures would reduce, but not eliminate, the project transportation impacts.

CONCLUSIONS

There are multiple mitigation measures that would reduce the severity of impacts or eliminate significant impacts under near term plus project conditions without the Prado Road overcrossing. However, some of these improvements would require additional right-of-way, further study, or approval by Caltrans, making their feasibility uncertain. Although it is unlikely that the project would be fully completed prior to the Prado Road Interchange completion, currently estimated for 2022, the new project description which proposes to eliminate development phasing and restrictions tied to the interchange may result in temporary significant and unavoidable impacts at nine intersections, eight segments, and three Hwy 101 segments until the Prado Road Overpass and NB Ramps are completed.

ATTACHMENTS

Appendix A: Synchro Output Sheets

Appendix B: SimTraffic Output Sheets

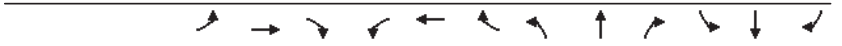
Appendix A: Synchro Output Sheets

Near Term

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	131	30	158	67	116	50	530	132	332	735	39
Future Volume (vph)	95	131	30	158	67	116	50	530	132	332	735	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99	0.96	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.95	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1802		3433	1663	1440	1770	5085	1557	3433	3507	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1802		3433	1663	1440	1770	5085	1557	3433	3507	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	102	141	32	170	72	125	54	570	142	357	790	42
RTOR Reduction (vph)	0	8	0	0	15	80	0	0	95	0	3	0
Lane Group Flow (vph)	102	165	0	170	90	12	54	570	47	357	829	0
Confl. Peds. (#/hr)	23		8	8		23	3		16	16		3
Confl. Bikes (#/hr)			5			5						6
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	2	2		6	6		3	8	6	7	4	
Permitted Phases						6			8			
Actuated Green, G (s)	13.5	13.5		11.0	11.0	11.0	4.5	15.8	26.8	19.4	30.7	
Effective Green, g (s)	13.5	13.5		11.0	11.0	11.0	4.5	15.8	26.8	19.4	30.7	
Actuated g/C Ratio	0.17	0.17		0.13	0.13	0.13	0.06	0.19	0.33	0.24	0.38	
Clearance Time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
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)	292	297		462	223	193	97	983	615	815	1317	
v/s Ratio Prot	0.06	c0.09		0.05	c0.05		0.03	0.11	0.01	c0.10	c0.24	
v/s Ratio Perm						0.01			0.02			
v/c Ratio	0.35	0.56		0.37	0.40	0.06	0.56	0.58	0.08	0.44	0.63	
Uniform Delay, d1	30.2	31.4		32.2	32.4	30.9	37.6	29.9	18.9	26.5	20.8	
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	0.7	2.3		0.5	1.2	0.1	6.8	0.8	0.1	0.4	1.0	
Delay (s)	30.9	33.6		32.7	33.6	31.0	44.4	30.8	19.0	26.9	21.8	
Level of Service	C	C		C	C	C	D	C	B	C	C	
Approach Delay (s)		32.6			32.5			29.5			23.3	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.57			
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	22.0	
Intersection Capacity Utilization	62.3%	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												
Traffic Volume (veh/h)	95	131	30	158	67	116	50	530	132	332	735	39
Future Volume (veh/h)	95	131	30	158	67	116	50	530	132	332	735	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	1.00		0.98	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	102	141	32	170	112	98	54	570	142	357	790	42
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	313	256	58	559	293	234	78	1060	572	501	1056	56
Arrive On Green	0.18	0.18	0.18	0.16	0.16	0.16	0.04	0.21	0.21	0.15	0.31	0.31
Sat Flow, veh/h	1774	1452	330	3548	1863	1486	1774	5085	1547	3442	3408	181
Grp Volume(v), veh/h	102	0	173	170	112	98	54	570	142	357	410	422
Grp Sat Flow(s),veh/h/ln	1774	0	1781	1774	1863	1486	1774	1695	1547	1721	1770	1819
Q Serve(g_s), s	3.5	0.0	6.2	3.0	3.8	4.2	2.1	7.0	4.5	7.0	14.7	14.7
Cycle Q Clear(g_c), s	3.5	0.0	6.2	3.0	3.8	4.2	2.1	7.0	4.5	7.0	14.7	14.7
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	313	0	314	559	293	234	78	1060	572	501	548	564
V/C Ratio(X)	0.33	0.00	0.55	0.30	0.38	0.42	0.69	0.54	0.25	0.71	0.75	0.75
Avail Cap(c_a), veh/h	604	0	607	1208	634	506	227	1948	842	1123	1029	1058
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	0.0	26.5	26.3	26.6	26.8	33.2	24.9	15.6	28.7	21.8	21.9
Incr Delay (d2), s/veh	0.6	0.0	1.5	0.3	0.8	1.2	10.2	0.4	0.2	1.9	2.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.2	0.0	5.8	2.7	3.6	3.2	2.3	6.0	4.4	6.2	12.0	12.2
LnGrp Delay(d),s/veh	26.0	0.0	28.0	26.6	27.4	28.0	43.4	25.3	15.8	30.6	23.9	23.9
LnGrp LOS	C		C	C	C	C	D	C	B	C	C	C
Approach Vol, veh/h		275			380			766			1189	
Approach Delay, s/veh		27.2			27.2			24.8			25.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		17.4	8.1	28.3		16.6	15.3	21.2
Change Period (Y+Rc), s		5.0	5.0	6.5		5.5	5.0	6.5
Max Green Setting (Gmax), s		24.0	9.0	41.0		24.0	23.0	27.0
Max Q Clear Time (g_c+I1), s		8.2	4.1	16.7		6.2	9.0	9.0
Green Ext Time (p_c), s		1.2	0.0	5.2		1.6	1.3	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	680	3	5	511	0	35	8	14	27	137	12
Future Volume (vph)	9	680	3	5	511	0	35	8	14	27	137	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		5.0	6.0	6.0			5.0	5.0		5.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00			1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00			1.00	0.97		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00		1.00	1.00	0.85			1.00	0.85		0.99
Flt Protected	0.95	1.00		0.95	1.00	1.00			0.98	1.00		0.96
Satd. Flow (prot)	1770	3539		1767	3539	1583			1828	1533		1763
Flt Permitted	0.95	1.00		0.95	1.00	1.00			0.88	1.00		0.74
Satd. Flow (perm)	1770	3539		1767	3539	1583			1632	1533		1363
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	739	3	5	555	0	38	9	15	29	149	13
RTOR Reduction (vph)	0	0	0	0	0	25	0	0	0	23	0	0
Lane Group Flow (vph)	10	739	0	8	555	13	0	0	24	6	0	176
Confl. Peds. (#/hr)			2							3	3	
Confl. Bikes (#/hr)										16		
Turn Type	Prot	NA	Prot	Prot	NA	Perm		Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	1	6				8			4
Permitted Phases						6		8		8	4	
Actuated Green, G (s)	0.5	23.8		0.5	22.8	22.8			12.9	12.9		12.9
Effective Green, g (s)	0.5	23.8		0.5	22.8	22.8			12.9	12.9		12.9
Actuated g/C Ratio	0.01	0.37		0.01	0.35	0.35			0.20	0.20		0.20
Clearance Time (s)	6.0	6.0		5.0	6.0	6.0			5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)	13	1297		13	1243	556			324	304		270
v/s Ratio Prot	c0.01	c0.21		0.00	0.16							
v/s Ratio Perm						0.01			0.01	0.00		c0.13
v/c Ratio	0.77	0.57		0.62	0.45	0.02			0.07	0.02		0.65
Uniform Delay, d1	32.1	16.5		32.1	16.2	13.8			21.1	20.9		23.9
Progression Factor	1.00	1.00		1.00	1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	128.6	0.6		64.0	0.3	0.0			0.1	0.0		5.5
Delay (s)	160.8	17.0		96.1	16.5	13.8			21.2	20.9		29.5
Level of Service	F	B		F	B	B			C	C		C
Approach Delay (s)		18.9			17.3				21.1			29.5
Approach LOS		B			B				C			C

Intersection Summary				
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	27.0	
Intersection Capacity Utilization	62.0%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	SBR2	SEL	SER2	NEL2	NEL	NER
Lane Configurations						
Traffic Volume (vph)	13	3	3	1	0	17
Future Volume (vph)	13	3	3	1	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	
Lane Util. Factor		1.00			1.00	
Frpb, ped/bikes		1.00			0.93	
Flpb, ped/bikes		1.00			1.00	
Frt		0.93			0.87	
Flt Protected		0.98			1.00	
Satd. Flow (prot)		1695			1514	
Flt Permitted		0.98			1.00	
Satd. Flow (perm)		1695			1514	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	3	3	1	0	18
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	6	0	0	19	0
Confl. Peds. (#/hr)						3
Confl. Bikes (#/hr)	3					
Turn Type		Prot		Perm	Prot	
Protected Phases		7			3	
Permitted Phases				3		
Actuated Green, G (s)		0.7			1.0	
Effective Green, g (s)		0.7			1.0	
Actuated g/C Ratio		0.01			0.02	
Clearance Time (s)		5.0			5.0	
Vehicle Extension (s)		3.0			3.0	
Lane Grp Cap (vph)		18			23	
v/s Ratio Prot		c0.00				
v/s Ratio Perm					0.01	
v/c Ratio		0.33			0.83	
Uniform Delay, d1		31.9			31.9	
Progression Factor		1.00			1.00	
Incremental Delay, d2		10.6			110.0	
Delay (s)		42.5			141.9	
Level of Service		D			F	
Approach Delay (s)		42.5			141.9	
Approach LOS		D			F	

Intersection Summary

HCM 2010 methodology does not support more than 4 approaches.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1018	51	39	622	21	17	1	41	11	0	3
Future Volume (vph)	12	1018	51	39	622	21	17	1	41	11	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1768	3510		1770	5056			1777	1562		1767	1563
Flt Permitted	0.95	1.00		0.95	1.00			0.73	1.00		0.74	1.00
Satd. Flow (perm)	1768	3510		1770	5056			1354	1562		1385	1563
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	14	1157	58	44	707	24	19	1	47	12	0	3
RTOR Reduction (vph)	0	2	0	0	3	0	0	0	42	0	0	3
Lane Group Flow (vph)	14	1213	0	44	728	0	0	20	5	0	13	0
Confl. Peds. (#/hr)	1		3	3		1	1		2	2		1
Confl. Bikes (#/hr)			1			4						
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	0.5	38.0		2.7	40.2			6.1	6.1		6.1	6.1
Effective Green, g (s)	0.5	38.0		2.7	40.2			6.1	6.1		6.1	6.1
Actuated g/C Ratio	0.01	0.61		0.04	0.64			0.10	0.10		0.10	0.10
Clearance Time (s)	6.0	6.0		6.0	6.0			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
Lane Grp Cap (vph)	14	2123		76	3236			131	151		134	151
v/s Ratio Prot	0.01	c0.35		c0.02	0.14							
v/s Ratio Perm								c0.01	0.00		0.01	0.00
v/c Ratio	1.00	0.57		0.58	0.23			0.15	0.03		0.10	0.00
Uniform Delay, d1	31.1	7.5		29.5	4.8			26.0	25.7		25.8	25.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	240.5	0.4		10.3	0.0			0.5	0.1		0.3	0.0
Delay (s)	271.7	7.9		39.7	4.8			26.5	25.8		26.2	25.6
Level of Service	F	A		D	A			C	C		C	C
Approach Delay (s)		10.9			6.8			26.0			26.1	
Approach LOS		B			A			C			C	

Intersection Summary				
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	49.9%	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												
Traffic Volume (veh/h)	12	1018	51	39	622	21	17	1	41	11	0	3
Future Volume (veh/h)	12	1018	51	39	622	21	17	1	41	11	0	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	14	1157	58	44	707	24	19	1	47	12	0	3
Adj No. of Lanes	1	2	0	1	3	0	0	1	1	0	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	1654	83	67	2555	86	161	5	185	165	0	185
Arrive On Green	0.01	0.48	0.48	0.04	0.51	0.51	0.12	0.12	0.12	0.12	0.00	0.12
Sat Flow, veh/h	1774	3426	172	1774	5047	171	17	39	1575	17	0	1575
Grp Volume(v), veh/h	14	597	618	44	474	257	20	0	47	12	0	3
Grp Sat Flow(s),veh/h/ln	1774	1770	1828	1774	1695	1827	56	0	1575	17	0	1575
Q Serve(g_s), s	0.3	11.6	11.7	1.1	3.5	3.6	0.1	0.0	1.2	0.1	0.0	0.1
Cycle Q Clear(g_c), s	0.3	11.6	11.7	1.1	3.5	3.6	5.2	0.0	1.2	5.2	0.0	0.1
Prop In Lane	1.00		0.09	1.00		0.09	0.95		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	25	854	882	67	1716	925	166	0	185	165	0	185
V/C Ratio(X)	0.55	0.70	0.70	0.66	0.28	0.28	0.12	0.00	0.25	0.07	0.00	0.02
Avail Cap(c_a), veh/h	161	1323	1366	522	3226	1739	901	0	999	863	0	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	8.9	8.9	21.0	6.3	6.3	20.9	0.0	17.7	22.1	0.0	17.2
Incr Delay (d2), s/veh	17.6	1.1	1.0	10.5	0.1	0.2	0.3	0.0	0.7	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	9.9	10.1	1.3	3.0	3.3	0.5	0.0	1.0	0.3	0.0	0.1
LnGrp Delay(d),s/veh	39.2	10.0	9.9	31.5	6.3	6.4	21.3	0.0	18.5	22.3	0.0	17.3
LnGrp LOS	D	A	A	C	A	A	C		B	C		B
Approach Vol, veh/h		1229			775			67			15	
Approach Delay, s/veh		10.3			7.8			19.3			21.3	
Approach LOS		B			A			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	27.3		9.2	6.6	28.4		9.2
Change Period (Y+Rc), s	6.0	6.0		4.0	6.0	6.0		4.0
Max Green Setting (Gmax), s	13.0	33.0		28.0	4.0	42.0		28.0
Max Q Clear Time (g_c+I1), s	3.1	13.7		7.2	2.3	5.6		7.2
Green Ext Time (p_c), s	0.1	7.7		0.0	0.0	5.2		0.2

Intersection Summary		
HCM 2010 Ctrl Delay	9.7	
HCM 2010 LOS	A	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	1025	74	143	461	34	281	26	500	5	2	7
Future Volume (vph)	15	1025	74	143	461	34	281	26	500	5	2	7
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	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	0.99	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	4988		1641	5022		1547	1565	1468	1681	1661	1553
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.76	1.00	0.25	0.62	1.00
Satd. Flow (perm)	1770	4988		1641	5022		1230	1238	1468	442	1055	1553
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	17	1152	83	161	518	38	316	29	562	6	2	8
RTOR Reduction (vph)	0	8	0	0	8	0	0	0	256	0	0	7
Lane Group Flow (vph)	17	1227	0	161	548	0	171	174	306	4	4	1
Confl. Peds. (#/hr)	1		5	5		1	4					4
Confl. Bikes (#/hr)			20			11						
Heavy Vehicles (%)	2%	2%	10%	10%	2%	2%	10%	10%	10%	2%	10%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	2.0	33.5		14.5	46.0		20.0	20.0	34.5	16.0	16.0	16.0
Effective Green, g (s)	2.0	33.5		14.5	46.0		20.0	20.0	34.5	16.0	16.0	16.0
Actuated g/C Ratio	0.02	0.34		0.14	0.46		0.20	0.20	0.34	0.16	0.16	0.16
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)	35	1670		237	2310		246	247	565	70	168	248
v/s Ratio Prot	0.01	c0.25		c0.10	0.11				0.08			
v/s Ratio Perm							0.14	c0.14	0.13	c0.01	0.00	0.00
v/c Ratio	0.49	0.73		0.68	0.24		0.70	0.70	0.54	0.06	0.02	0.01
Uniform Delay, d1	48.5	29.3		40.5	16.4		37.2	37.2	26.4	35.6	35.4	35.3
Progression Factor	1.00	1.00		1.28	0.52		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.2	2.9		6.7	0.2		15.0	15.6	1.1	1.6	0.3	0.0
Delay (s)	58.7	32.2		58.4	8.7		52.2	52.8	27.4	37.2	35.7	35.3
Level of Service	E	C		E	A		D	D	C	D	D	D
Approach Delay (s)		32.6			19.9			37.0			35.9	
Approach LOS		C			B			D			D	

Intersection Summary				
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	75.8%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1025	74	143	461	34	281	26	500	5	2	7
Future Volume (veh/h)	15	1025	74	143	461	34	281	26	500	5	2	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1853	1900	1727	1863	1900	1727	1727	1727	1863	1792	1863
Adj Flow Rate, veh/h	17	1152	83	161	518	38	337	0	562	4	5	8
Adj No. of Lanes	1	3	0	1	3	0	2	0	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	10	2	2	10	10	10	2	10	2
Cap, veh/h	444	2714	195	189	2075	151	653	0	460	240	358	315
Arrive On Green	0.25	0.57	0.57	0.23	0.86	0.86	0.20	0.00	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1774	4803	346	1645	4826	350	2573	0	1459	842	1792	1574
Grp Volume(v), veh/h	17	809	426	161	362	194	337	0	562	4	5	8
Grp Sat Flow(s),veh/h/ln	1774	1686	1776	1645	1695	1786	1286	0	1459	842	1792	1574
Q Serve(g_s), s	0.7	13.7	13.7	9.4	1.9	1.9	12.1	0.0	20.0	0.4	0.2	0.4
Cycle Q Clear(g_c), s	0.7	13.7	13.7	9.4	1.9	1.9	12.3	0.0	20.0	0.4	0.2	0.4
Prop In Lane	1.00		0.19	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	444	1906	1004	189	1458	768	653	0	460	240	358	315
V/C Ratio(X)	0.04	0.42	0.42	0.85	0.25	0.25	0.52	0.00	1.22	0.02	0.01	0.03
Avail Cap(c_a), veh/h	444	1906	1004	280	1458	768	653	0	460	240	358	315
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	12.4	12.4	37.7	4.1	4.1	37.0	0.0	34.3	32.2	32.1	32.2
Incr Delay (d2), s/veh	0.0	0.7	1.3	13.0	0.3	0.7	2.9	0.0	117.5	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	10.6	11.3	8.2	1.6	1.8	8.1	0.0	50.0	0.2	0.2	0.3
LnGrp Delay(d),s/veh	28.4	13.1	13.8	50.7	4.5	4.8	39.9	0.0	151.8	32.3	32.2	32.3
LnGrp LOS	C	B	B	D	A	A	D		F	C	C	C
Approach Vol, veh/h		1252			717			899			17	
Approach Delay, s/veh		13.5			14.9			109.9			32.3	
Approach LOS		B			B			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	60.5		24.0	29.0	47.0		24.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	17.0	31.0		16.0	5.0	43.0		20.0
Max Q Clear Time (g_c+I1), s	11.4	15.7		2.4	2.7	3.9		22.0
Green Ext Time (p_c), s	0.2	7.2		0.0	0.0	3.8		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	44.0	
HCM 2010 LOS	D	

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	476	1054	0	0	529	116	109	2	153	0	0	0
Future Volume (vph)	476	1054	0	0	529	116	109	2	153	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				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.97		1.00	0.85				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3183	3539			3385		1641	1471				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3183	3539			3385		1641	1471				
Peak-hour factor, PHF	0.84	0.84	0.92	0.92	0.84	0.84	0.84	0.84	0.84	0.92	0.92	0.92
Adj. Flow (vph)	567	1255	0	0	630	138	130	2	182	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	95	0	0	0	0
Lane Group Flow (vph)	567	1255	0	0	751	0	130	89	0	0	0	0
Confl. Peds. (#/hr)	1		9	9		1						
Confl. Bikes (#/hr)			7			12						
Heavy Vehicles (%)	10%	2%	2%	2%	2%	10%	10%	10%	10%	2%	2%	2%
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	30.0	78.7			44.7		13.3	13.3				
Effective Green, g (s)	30.0	78.7			44.7		13.3	13.3				
Actuated g/C Ratio	0.30	0.79			0.45		0.13	0.13				
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	954	2785			1513		218	195				
v/s Ratio Prot	c0.18	0.35			c0.22		c0.08	0.06				
v/s Ratio Perm												
v/c Ratio	0.59	0.45			0.50		0.60	0.46				
Uniform Delay, d1	29.8	3.5			19.6		40.8	40.0				
Progression Factor	0.42	0.20			0.49		1.00	1.00				
Incremental Delay, d2	0.7	0.4			1.1		4.3	1.7				
Delay (s)	13.3	1.1			10.7		45.2	41.7				
Level of Service	B	A			B		D	D				
Approach Delay (s)		4.9			10.7			43.2			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.5%	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												
Traffic Volume (veh/h)	476	1054	0	0	529	116	109	2	153	0	0	0
Future Volume (veh/h)	476	1054	0	0	529	116	109	2	153	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1727	1863	0	0	1837	1900	1727	1727	1900			
Adj Flow Rate, veh/h	567	1255	0	0	630	138	130	2	182			
Adj No. of Lanes	2	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.84	0.84	0.92	0.92	0.84	0.84	0.84	0.84	0.84			
Percent Heavy Veh, %	10	2	0	0	2	2	10	10	10			
Cap, veh/h	1089	2729	0	0	1107	242	245	2	217			
Arrive On Green	0.68	1.00	0.00	0.00	0.13	0.13	0.15	0.15	0.15			
Sat Flow, veh/h	3191	3632	0	0	2929	620	1645	16	1455			
Grp Volume(v), veh/h	567	1255	0	0	387	381	130	0	184			
Grp Sat Flow(s),veh/h/ln	1596	1770	0	0	1745	1713	1645	0	1471			
Q Serve(g_s), s	8.8	0.0	0.0	0.0	20.8	20.9	7.3	0.0	12.2			
Cycle Q Clear(g_c), s	8.8	0.0	0.0	0.0	20.8	20.9	7.3	0.0	12.2			
Prop In Lane	1.00		0.00	0.00		0.36	1.00		0.99			
Lane Grp Cap(c), veh/h	1089	2729	0	0	681	668	245	0	219			
V/C Ratio(X)	0.52	0.46	0.00	0.00	0.57	0.57	0.53	0.00	0.84			
Avail Cap(c_a), veh/h	1089	2729	0	0	681	668	313	0	279			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.62	0.62	0.00	0.00	0.94	0.94	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.9	0.0	0.0	0.0	35.7	35.7	39.3	0.0	41.4			
Incr Delay (d2), s/veh	0.3	0.3	0.0	0.0	3.2	3.3	1.8	0.0	16.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	6.3	0.2	0.0	0.0	15.9	15.7	6.2	0.0	10.0			
LnGrp Delay(d),s/veh	12.1	0.3	0.0	0.0	38.9	39.0	41.1	0.0	57.8			
LnGrp LOS	B	A			D	D	D		E			
Approach Vol, veh/h		1822			768			314				
Approach Delay, s/veh		4.0			38.9			50.9				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		81.1			38.1	43.0		18.9
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		73.0			30.0	39.0		19.0
Max Q Clear Time (g_c+I1), s		2.0			10.8	22.9		14.2
Green Ext Time (p_c), s		13.1			2.6	4.3		0.7

Intersection Summary		
HCM 2010 Ctrl Delay		18.3
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	617	30	535	10	10	10	150	315	10	10	450	469
Future Volume (vph)	617	30	535	10	10	10	150	315	10	10	450	469
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	0.95	0.95	1.00	1.00	1.00		1.00	0.95			0.95	0.88
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1693	1556	1770	1723		1770	3518			3535	2749
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.95	1.00			0.94	1.00
Satd. Flow (perm)	1681	1693	1556	1770	1723		1770	3518			3340	2749
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)	686	33	594	11	11	11	167	350	11	11	500	521
RTOR Reduction (vph)	0	0	196	0	11	0	0	2	0	0	0	0
Lane Group Flow (vph)	357	362	398	11	11	0	167	359	0	0	511	521
Confl. Peds. (#/hr)			6	6			5		6	6		5
Confl. Bikes (#/hr)									9			9
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Perm	NA	pm+ov
Protected Phases	8	8	1	4	4		1	6			2	8
Permitted Phases			8							2		2
Actuated Green, G (s)	43.8	43.8	57.8	4.2	4.2		14.0	40.0			22.0	65.8
Effective Green, g (s)	43.8	43.8	57.8	4.2	4.2		14.0	40.0			22.0	65.8
Actuated g/C Ratio	0.44	0.44	0.58	0.04	0.04		0.14	0.40			0.22	0.66
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)	736	741	961	74	72		247	1407			734	1808
v/s Ratio Prot	0.21	c0.21	0.06	0.01	c0.01		c0.09	0.10				0.13
v/s Ratio Perm			0.20								c0.15	0.06
v/c Ratio	0.49	0.49	0.41	0.15	0.16		0.68	0.25			0.70	0.29
Uniform Delay, d1	20.1	20.1	11.7	46.2	46.2		40.8	20.0			35.9	7.2
Progression Factor	0.60	0.60	0.56	1.00	1.00		1.00	1.00			0.65	0.44
Incremental Delay, d2	2.1	2.1	0.3	0.9	1.0		7.1	0.4			5.1	0.4
Delay (s)	14.2	14.2	6.8	47.1	47.2		48.0	20.5			28.5	3.6
Level of Service	B	B	A	D	D		D	C			C	A
Approach Delay (s)		10.8			47.2			29.2			15.9	
Approach LOS		B			D			C			B	

Intersection Summary					
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.56				
Actuated Cycle Length (s)	100.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	61.2%	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												
Traffic Volume (veh/h)	617	30	535	10	10	10	150	315	10	10	450	469
Future Volume (veh/h)	617	30	535	10	10	10	150	315	10	10	450	469
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.96	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	710	0	594	11	11	11	167	350	11	11	500	521
Adj No. of Lanes	2	0	1	1	1	0	1	2	0	0	2	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1135	0	683	284	136	136	201	1399	44	45	844	1548
Arrive On Green	0.32	0.00	0.32	0.16	0.16	0.16	0.11	0.40	0.40	0.08	0.08	0.08
Sat Flow, veh/h	3548	0	1574	1774	851	851	1774	3499	110	29	3420	2661
Grp Volume(v), veh/h	710	0	594	11	0	22	167	177	184	273	238	521
Grp Sat Flow(s),veh/h/ln	1774	0	1574	1774	0	1701	1774	1770	1839	1838	1610	1330
Q Serve(g_s), s	17.0	0.0	32.0	0.5	0.0	1.1	9.2	6.7	6.7	0.0	14.3	11.1
Cycle Q Clear(g_c), s	17.0	0.0	32.0	0.5	0.0	1.1	9.2	6.7	6.7	14.1	14.3	11.1
Prop In Lane	1.00		1.00	1.00		0.50	1.00		0.06	0.04		1.00
Lane Grp Cap(c), veh/h	1135	0	683	284	0	272	201	708	735	491	397	1548
V/C Ratio(X)	0.63	0.00	0.87	0.04	0.00	0.08	0.83	0.25	0.25	0.56	0.60	0.34
Avail Cap(c_a), veh/h	1135	0	683	284	0	272	284	708	735	491	397	1548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.89	0.00	0.89	1.00	0.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	28.9	0.0	25.8	35.5	0.0	35.7	43.4	20.0	20.0	41.1	41.2	14.4
Incr Delay (d2), s/veh	2.3	0.0	12.9	0.1	0.0	0.1	13.4	0.8	0.8	4.1	6.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.2	0.0	23.7	0.5	0.0	1.0	9.0	6.1	6.4	12.3	11.2	11.4
LnGrp Delay(d),s/veh	31.2	0.0	38.7	35.6	0.0	35.9	56.8	20.8	20.8	45.2	47.2	14.9
LnGrp LOS	C		D	D		D	E	C	C	D	D	B
Approach Vol, veh/h		1304			33			528			1032	
Approach Delay, s/veh		34.6			35.8			32.2			30.4	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	15.3	28.7		20.0		44.0		36.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	16.0	20.0		16.0		40.0		32.0
Max Q Clear Time (g_c+I1), s	11.2	16.3		3.1		8.7		34.0
Green Ext Time (p_c), s	0.2	2.1		0.1		2.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

HCM 2010 Signalized Intersection Summary
7: Higuera & Madonna/Shopping Center

Near Term AM 2025
02/26/2018

Central Coast Transportation Consulting

Synchro 10 Report

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	17	910	77	28	962
Future Vol, veh/h	26	17	910	77	28	962
Conflicting Peds, #/hr	0	0	0	8	8	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	175	-	50	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	18	989	84	30	1046

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1580	503	0	0	1081	0
Stage 1	997	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	100	514	-	-	641	-
Stage 1	318	-	-	-	-	-
Stage 2	521	-	-	-	-	-
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	95	510	-	-	636	-
Mov Cap-2 Maneuver	210	-	-	-	-	-
Stage 1	301	-	-	-	-	-
Stage 2	521	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	210	510	636	-
HCM Lane V/C Ratio	-	-	0.135	0.036	0.048	-
HCM Control Delay (s)	-	-	24.8	12.3	10.9	-
HCM Lane LOS	-	-	C	B	B	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	2	51	56	3	19	47	910	71	34	965	17
Future Volume (vph)	9	2	51	56	3	19	47	910	71	34	965	17
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		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1754	1863	1583	1770	1589		1769	3539	1544	1769	3539	1553
Flt Permitted	0.74	1.00	1.00	0.76	1.00		0.24	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)	1369	1863	1583	1409	1589		441	3539	1544	480	3539	1553
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)	10	2	57	62	3	21	52	1011	79	38	1072	19
RTOR Reduction (vph)	0	0	51	0	19	0	0	0	25	0	0	6
Lane Group Flow (vph)	10	2	6	62	5	0	52	1011	54	38	1072	13
Confl. Peds. (#/hr)	6					6	4		2	2		4
Confl. Bikes (#/hr)												4
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6		6	2		2
Actuated Green, G (s)	7.8	7.8	7.8	7.8	7.8		57.8	54.2	54.2	56.6	53.6	53.6
Effective Green, g (s)	7.8	7.8	7.8	7.8	7.8		57.8	54.2	54.2	56.6	53.6	53.6
Actuated g/C Ratio	0.10	0.10	0.10	0.10	0.10		0.72	0.68	0.68	0.71	0.67	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	133	181	154	137	154		378	2397	1046	387	2371	1040
v/s Ratio Prot		0.00			0.00		c0.01	0.29		0.00	c0.30	
v/s Ratio Perm	0.01		0.00	c0.04			0.09		0.03	0.07		0.01
v/c Ratio	0.08	0.01	0.04	0.45	0.03		0.14	0.42	0.05	0.10	0.45	0.01
Uniform Delay, d1	32.8	32.6	32.7	34.1	32.7		5.6	5.8	4.3	5.4	6.2	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.1	2.4	0.1		0.2	0.5	0.1	0.1	0.6	0.0
Delay (s)	33.1	32.6	32.8	36.5	32.8		5.7	6.4	4.4	5.5	6.9	4.4
Level of Service	C	C	C	D	C		A	A	A	A	A	A
Approach Delay (s)		32.8			35.4			6.2			6.8	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	52.9%	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												
Traffic Volume (veh/h)	9	2	51	56	3	19	47	910	71	34	965	17
Future Volume (veh/h)	9	2	51	56	3	19	47	910	71	34	965	17
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		1.00	0.98		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	10	2	0	62	3	21	52	1011	79	38	1072	19
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	151	129	201	16	112	633	1858	828	622	1814	798
Arrive On Green	0.08	0.08	0.00	0.08	0.08	0.08	0.22	0.52	0.52	0.21	0.51	0.51
Sat Flow, veh/h	1354	1863	1583	1378	198	1384	1774	3539	1577	1774	3539	1558
Grp Volume(v), veh/h	10	2	0	62	0	24	52	1011	79	38	1072	19
Grp Sat Flow(s),veh/h/ln	1354	1863	1583	1378	0	1582	1774	1770	1577	1774	1770	1558
Q Serve(g_s), s	0.6	0.1	0.0	3.5	0.0	1.1	0.0	15.2	2.0	0.0	16.9	0.5
Cycle Q Clear(g_c), s	1.7	0.1	0.0	3.5	0.0	1.1	0.0	15.2	2.0	0.0	16.9	0.5
Prop In Lane	1.00		1.00	1.00		0.88	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	151	129	201	0	128	633	1858	828	622	1814	798
V/C Ratio(X)	0.06	0.01	0.00	0.31	0.00	0.19	0.08	0.54	0.10	0.06	0.59	0.02
Avail Cap(c_a), veh/h	376	419	356	399	0	356	633	1858	828	622	1814	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	33.8	0.0	35.4	0.0	34.3	10.3	12.6	9.5	9.6	13.6	9.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.9	0.0	0.7	0.0	1.0	0.2	0.0	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.1	0.0	2.5	0.0	0.9	1.1	11.7	1.6	0.8	13.3	0.4
LnGrp Delay(d),s/veh	35.2	33.8	0.0	36.3	0.0	35.0	10.3	13.6	9.7	9.6	15.1	9.7
LnGrp LOS	D	C		D		C	B	B	A	A	B	A
Approach Vol, veh/h		12			86			1142			1129	
Approach Delay, s/veh		35.0			35.9			13.2			14.8	
Approach LOS		C			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.5	47.0		10.5	21.5	48.0		10.5
Change Period (Y+Rc), s	5.0	6.0		4.0	5.0	6.0		4.0
Max Green Setting (Gmax), s	6.0	41.0		18.0	5.0	42.0		18.0
Max Q Clear Time (g_c+I1), s	2.0	18.9		5.5	2.0	17.2		3.7
Green Ext Time (p_c), s	0.0	7.7		0.2	0.0	8.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	420	210	122	523	1108	99
Future Volume (vph)	420	210	122	523	1108	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5	6.0	6.0	3.5
Lane Util. Factor	0.97		1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3081		1641	3539	3539	1445
Flt Permitted	0.97		0.95	1.00	1.00	1.00
Satd. Flow (perm)	3081		1641	3539	3539	1445
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	447	223	130	556	1179	105
RTOR Reduction (vph)	66	0	0	0	0	29
Lane Group Flow (vph)	604	0	130	556	1179	76
Confl. Bikes (#/hr)						5
Heavy Vehicles (%)	10%	10%	10%	2%	2%	10%
Turn Type	Prot		Prot	NA	NA	pm+ov
Protected Phases	3		1	6	2	3
Permitted Phases						2
Actuated Green, G (s)	21.2		10.9	62.1	47.7	68.9
Effective Green, g (s)	21.2		10.9	62.1	47.7	68.9
Actuated g/C Ratio	0.21		0.11	0.62	0.48	0.69
Clearance Time (s)	3.5		3.5	6.0	6.0	3.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	653		178	2197	1688	995
v/s Ratio Prot	c0.20		c0.08	0.16	c0.33	0.02
v/s Ratio Perm						0.04
v/c Ratio	0.92		0.73	0.25	0.70	0.08
Uniform Delay, d1	38.6		43.1	8.5	20.5	5.1
Progression Factor	1.00		1.00	1.00	0.40	0.40
Incremental Delay, d2	18.9		14.3	0.3	1.7	0.0
Delay (s)	57.5		57.4	8.8	9.8	2.1
Level of Service	E		E	A	A	A
Approach Delay (s)	57.5			18.0	9.2	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 methodology does not support exclusive ped or hold phases.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	155	84	1097	280	75	569
Future Volume (vph)	155	84	1097	280	75	569
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1545	3414		1769	3539
Flt Permitted	0.95	1.00	1.00		0.13	1.00
Satd. Flow (perm)	1770	1545	3414		247	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	91	1192	304	82	618
RTOR Reduction (vph)	0	67	20	0	0	0
Lane Group Flow (vph)	168	24	1476	0	82	618
Confl. Peds. (#/hr)		6		1	1	
Confl. Bikes (#/hr)		5		6		
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	12.8	12.8	52.3		52.3	52.3
Effective Green, g (s)	12.8	12.8	52.3		52.3	52.3
Actuated g/C Ratio	0.17	0.17	0.69		0.69	0.69
Clearance Time (s)	5.0	5.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	5.5		5.5	5.5
Lane Grp Cap (vph)	297	259	2346		169	2432
v/s Ratio Prot	c0.09		c0.43			0.17
v/s Ratio Perm		0.02			0.33	
v/c Ratio	0.57	0.09	0.63		0.49	0.25
Uniform Delay, d1	29.1	26.7	6.6		5.6	4.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.1	0.8		5.3	0.1
Delay (s)	30.6	26.8	7.4		10.9	4.6
Level of Service	C	C	A		B	A
Approach Delay (s)	29.2		7.4			5.4
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	155	84	1097	280	75	569		
Future Volume (veh/h)	155	84	1097	280	75	569		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	168	91	1192	304	82	618		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	230	205	1950	490	276	2476		
Arrive On Green	0.13	0.13	0.70	0.70	0.70	0.70		
Sat Flow, veh/h	1774	1583	2881	701	350	3632		
Grp Volume(v), veh/h	168	91	750	746	82	618		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1719	350	1770		
Q Serve(g_s), s	5.9	3.4	14.2	14.8	10.5	4.1		
Cycle Q Clear(g_c), s	5.9	3.4	14.2	14.8	25.3	4.1		
Prop In Lane	1.00	1.00		0.41	1.00			
Lane Grp Cap(c), veh/h	230	205	1238	1202	276	2476		
V/C Ratio(X)	0.73	0.44	0.61	0.62	0.30	0.25		
Avail Cap(c_a), veh/h	662	590	1512	1469	330	3025		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	26.9	25.9	5.0	5.1	11.8	3.5		
Incr Delay (d2), s/veh	1.7	0.6	1.3	1.5	1.6	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	5.3	2.7	11.5	11.8	2.0	3.6		
LnGrp Delay(d),s/veh	28.6	26.4	6.4	6.6	13.5	3.7		
LnGrp LOS	C	C	A	A	B	A		
Approach Vol, veh/h	259		1496			700		
Approach Delay, s/veh	27.8		6.5			4.8		
Approach LOS	C		A			A		

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		51.0				51.0		13.3
Change Period (Y+Rc), s		6.0				6.0		5.0
Max Green Setting (Gmax), s		55.0				55.0		24.0
Max Q Clear Time (g_c+I1), s		16.8				27.3		7.9
Green Ext Time (p_c), s		28.2				11.6		0.6

Intersection Summary		
HCM 2010 Ctrl Delay		8.3
HCM 2010 LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	10	30	375	10	260	20	530	730	250	355	10
Future Volume (vph)	30	10	30	375	10	260	20	530	730	250	355	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1796	1556	1681	1690	1572	1770	3539	1569	1770	3521	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1796	1556	1681	1690	1572	1770	3539	1569	1770	3521	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	11	32	403	11	280	22	570	785	269	382	11
RTOR Reduction (vph)	0	0	30	0	0	167	0	0	326	0	2	0
Lane Group Flow (vph)	0	43	2	206	208	113	22	570	459	269	391	0
Confl. Peds. (#/hr)			1	1			3		3	3		3
Confl. Bikes (#/hr)			1			5						10
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		4	4	1	5	2	4	1	6	
Permitted Phases			8			4			2			
Actuated Green, G (s)		5.4	5.4	17.8	17.8	37.0	1.7	26.1	43.9	19.2	43.6	
Effective Green, g (s)		5.4	5.4	17.8	17.8	37.0	1.7	26.1	43.9	19.2	43.6	
Actuated g/C Ratio		0.06	0.06	0.19	0.19	0.40	0.02	0.29	0.48	0.21	0.48	
Clearance Time (s)		6.0	6.0	6.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		2.0	2.0	2.0	2.0	3.5	2.0	5.0	2.0	3.5	5.0	
Lane Grp Cap (vph)		105	91	327	328	635	32	1009	855	371	1677	
v/s Ratio Prot		c0.02		0.12	c0.12	0.04	0.01	0.16	c0.10	c0.15	0.11	
v/s Ratio Perm			0.00			0.03			0.19			
v/c Ratio		0.41	0.02	0.63	0.63	0.18	0.69	0.56	0.54	0.73	0.23	
Uniform Delay, d1		41.5	40.6	33.8	33.9	17.5	44.6	27.9	16.7	33.7	14.1	
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		0.9	0.0	2.7	2.9	0.2	39.1	1.2	0.3	7.1	0.2	
Delay (s)		42.5	40.6	36.6	36.8	17.7	83.8	29.1	17.0	40.8	14.3	
Level of Service		D	D	D	D	B	F	C	B	D	B	
Approach Delay (s)		41.7			29.0			23.1			25.0	
Approach LOS		D			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	91.5	Sum of lost time (s)		23.0
Intersection Capacity Utilization	78.2%	ICU Level of Service		D
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	10	30	375	10	260	20	530	730	250	355	10
Future Volume (veh/h)	30	10	30	375	10	260	20	530	730	250	355	10
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	32	11	32	411	0	0	22	570	785	269	382	11
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	25	83	531	0	524	43	1156	752	322	1699	49
Arrive On Green	0.05	0.05	0.05	0.15	0.00	0.00	0.02	0.33	0.33	0.18	0.48	0.48
Sat Flow, veh/h	1336	459	1551	3548	0	1583	1774	3539	1576	1774	3511	101
Grp Volume(v), veh/h	43	0	32	411	0	0	22	570	785	269	192	201
Grp Sat Flow(s),veh/h/ln	1796	0	1551	1774	0	1583	1774	1770	1576	1774	1770	1843
Q Serve(g_s), s	1.8	0.0	1.6	8.9	0.0	0.0	1.0	10.3	26.0	11.6	5.0	5.0
Cycle Q Clear(g_c), s	1.8	0.0	1.6	8.9	0.0	0.0	1.0	10.3	26.0	11.6	5.0	5.0
Prop In Lane	0.74		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	96	0	83	531	0	524	43	1156	752	322	856	891
V/C Ratio(X)	0.45	0.00	0.39	0.77	0.00	0.00	0.51	0.49	1.04	0.84	0.22	0.23
Avail Cap(c_a), veh/h	496	0	429	1159	0	804	111	1156	752	513	978	1019
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	0.0	36.4	32.5	0.0	0.0	38.4	21.5	17.7	31.4	11.9	11.9
Incr Delay (d2), s/veh	1.2	0.0	1.1	0.9	0.0	0.0	3.5	0.7	44.9	7.7	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	1.3	7.8	0.0	0.0	0.9	8.8	46.2	10.5	4.4	4.7
LnGrp Delay(d),s/veh	37.8	0.0	37.5	33.5	0.0	0.0	41.9	22.2	62.6	39.1	12.2	12.2
LnGrp LOS	D		D	C			D	C	F	D	B	B
Approach Vol, veh/h		75			411			1377			662	
Approach Delay, s/veh		37.6			33.5			45.6			23.1	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.4	32.0		17.9	6.9	44.5		10.2
Change Period (Y+Rc), s	5.0	6.0		6.0	5.0	6.0		6.0
Max Green Setting (Gmax), s	23.0	26.0		26.0	5.0	44.0		22.0
Max Q Clear Time (g_c+I1), s	13.6	28.0		10.9	3.0	7.0		3.8
Green Ext Time (p_c), s	0.8	0.0		0.9	0.0	4.6		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.5
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
16: Higuera & Tank Farm

Near Term AM 2025
02/26/2018

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Central Coast Transportation Consulting

Synchro 10 Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	93	60	326	113	440	88	1096	401	380	843	37
Future Volume (vph)	45	93	60	326	113	440	88	1096	401	380	843	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98	0.97	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.91	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1733		3433	1578	1456	1770	5085	1556	3433	3511	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1733		3433	1578	1456	1770	5085	1556	3433	3511	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	96	62	336	116	454	91	1130	413	392	869	38
RTOR Reduction (vph)	0	19	0	0	46	224	0	0	209	0	3	0
Lane Group Flow (vph)	46	139	0	336	247	53	91	1130	204	392	904	0
Confl. Peds. (#/hr)	10		10	10		10	5		10	10		5
Confl. Bikes (#/hr)			3			4						5
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	2	2		6	6		3	8	6	7	4	
Permitted Phases						6			8			
Actuated Green, G (s)	25.1	25.1		22.0	22.0	22.0	11.5	30.6	52.6	16.3	35.4	
Effective Green, g (s)	25.1	25.1		22.0	22.0	22.0	11.5	30.6	52.6	16.3	35.4	
Actuated g/C Ratio	0.22	0.22		0.19	0.19	0.19	0.10	0.26	0.45	0.14	0.31	
Clearance Time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
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)	382	374		651	299	276	175	1341	705	482	1071	
v/s Ratio Prot	0.03	c0.08		0.10	c0.16		0.05	0.22	0.05	c0.11	c0.26	
v/s Ratio Perm						0.04			0.08			
v/c Ratio	0.12	0.37		0.52	0.83	0.19	0.52	0.84	0.29	0.81	0.84	
Uniform Delay, d1	36.6	38.7		42.2	45.2	39.5	49.6	40.4	19.9	48.4	37.7	
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	0.6	2.8		0.7	16.7	0.3	2.8	5.0	0.2	10.1	6.2	
Delay (s)	37.2	41.6		42.9	61.9	39.8	52.4	45.4	20.2	58.5	43.9	
Level of Service	D	D		D	E	D	D	D	C	E	D	
Approach Delay (s)		40.6			48.1			39.4			48.3	
Approach LOS		D			D			D			D	

Intersection Summary					
HCM 2000 Control Delay	44.3	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.74				
Actuated Cycle Length (s)	116.0	Sum of lost time (s)		22.0	
Intersection Capacity Utilization	79.7%	ICU Level of Service		D	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	93	60	326	113	440	88	1096	401	380	843	37
Future Volume (veh/h)	45	93	60	326	113	440	88	1096	401	380	843	37
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	46	96	62	336	370	285	91	1130	413	392	869	38
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	224	145	716	376	309	188	1338	731	454	996	44
Arrive On Green	0.21	0.21	0.21	0.20	0.20	0.20	0.11	0.26	0.26	0.13	0.29	0.29
Sat Flow, veh/h	1774	1045	675	3548	1863	1534	1774	5085	1565	3442	3447	151
Grp Volume(v), veh/h	46	0	158	336	370	285	91	1130	413	392	446	461
Grp Sat Flow(s),veh/h/ln	1774	0	1720	1774	1863	1534	1774	1695	1565	1721	1770	1828
Q Serve(g_s), s	2.4	0.0	9.3	9.7	23.1	21.2	5.6	24.5	22.4	13.0	27.9	27.9
Cycle Q Clear(g_c), s	2.4	0.0	9.3	9.7	23.1	21.2	5.6	24.5	22.4	13.0	27.9	27.9
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	381	0	369	716	376	309	188	1338	731	454	511	528
V/C Ratio(X)	0.12	0.00	0.43	0.47	0.98	0.92	0.48	0.84	0.56	0.86	0.87	0.87
Avail Cap(c_a), veh/h	381	0	369	716	376	309	188	1418	756	502	600	620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	0.0	39.6	41.0	46.3	45.6	49.1	40.7	22.7	49.6	39.4	39.4
Incr Delay (d2), s/veh	0.6	0.0	3.6	0.5	42.3	31.5	1.9	4.7	0.9	13.5	11.9	11.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	4.8	4.8	16.2	11.7	2.9	12.1	13.4	7.1	15.3	15.8
LnGrp Delay(d),s/veh	37.6	0.0	43.2	41.5	88.6	77.1	51.0	45.3	23.6	63.1	51.3	51.0
LnGrp LOS	D		D	D	F	E	D	D	C	E	D	D
Approach Vol, veh/h		204			991			1634			1299	
Approach Delay, s/veh		41.9			69.3			40.2			54.8	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		30.0	17.4	40.2		29.0	20.4	37.2
Change Period (Y+Rc), s		5.0	5.0	6.5		5.5	5.0	6.5
Max Green Setting (Gmax), s		25.0	10.0	39.5		23.5	17.0	32.5
Max Q Clear Time (g_c+I1), s		11.3	7.6	29.9		25.1	15.0	26.5
Green Ext Time (p_c), s		0.9	0.0	3.7		0.0	0.4	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	51.8
HCM 2010 LOS	D

Notes

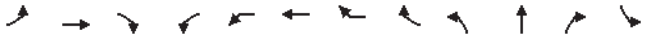
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
1: LOVR & Madonna

Near Term PM 2025
02/26/2018

Central Coast Transportation Consulting

Synchro 10 Report



Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	864	1	30	18	1007	8	155	4	0	29	104
Future Volume (vph)	15	864	1	30	18	1007	8	155	4	0	29	104
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	1.00	0.95			1.00	0.95	1.00			1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00			1.00	0.98	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00			1.00	1.00	
Frt	1.00	1.00			1.00	1.00	0.85			1.00	0.85	
Flt Protected	0.95	1.00			0.95	1.00	1.00			0.95	1.00	
Satd. Flow (prot)	1770	3539			1770	3539	1583			1768	1556	
Flt Permitted	0.95	1.00			0.95	1.00	1.00			0.76	1.00	
Satd. Flow (perm)	1770	3539			1770	3539	1583			1419	1556	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	939	1	33	20	1095	9	168	4	0	32	113
RTOR Reduction (vph)	0	0	0	0	0	0	90	0	0	0	27	0
Lane Group Flow (vph)	16	940	0	0	53	1095	87	0	0	4	5	0
Confl. Peds. (#/hr)			2						1		5	5
Turn Type	Prot	NA		Prot	Prot	NA	Perm		Perm	NA	Perm	Perm
Protected Phases	5	2		1	1	6				8		
Permitted Phases							6		8		8	4
Actuated Green, G (s)	0.6	26.6			2.2	28.2	28.2			8.6	8.6	
Effective Green, g (s)	0.6	26.6			2.2	28.2	28.2			8.6	8.6	
Actuated g/C Ratio	0.01	0.44			0.04	0.46	0.46			0.14	0.14	
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)	17	1550			64	1644	735			201	220	
v/s Ratio Prot	0.01	0.27			c0.03	c0.31						
v/s Ratio Perm							0.05			0.00	0.00	
v/c Ratio	0.94	0.61			0.83	0.67	0.12			0.02	0.02	
Uniform Delay, d1	30.0	13.0			29.1	12.6	9.2			22.4	22.4	
Progression Factor	1.00	1.00			1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2	188.5	0.7			56.0	1.0	0.1			0.0	0.0	
Delay (s)	218.6	13.7			85.0	13.6	9.3			22.5	22.5	
Level of Service	F	B			F	B	A			C	C	
Approach Delay (s)		17.2				15.9				22.5		
Approach LOS		B				B				C		

Intersection Summary				
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	60.7	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	71.1%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	SBT	SBR	SBR2	SEL	SER2	NEL2	NEL	NER
Lane Configurations								
Traffic Volume (vph)	0	2	16	1	4	1	2	23
Future Volume (vph)	0	2	16	1	4	1	2	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0			4.0	
Lane Util. Factor	1.00			1.00			1.00	
Frpb, ped/bikes	1.00			0.98			0.98	
Flpb, ped/bikes	1.00			1.00			1.00	
Frt	0.98			0.89			0.88	
Flt Protected	0.96			0.99			0.99	
Satd. Flow (prot)	1738			1612			1604	
Flt Permitted	0.75			0.99			0.99	
Satd. Flow (perm)	1366			1612			1604	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2	17	1	4	1	2	25
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	132	0	0	5	0	0	28	0
Confl. Peds. (#/hr)		1		5	2	1		5
Turn Type	NA			Prot		Perm	Prot	
Protected Phases	4			7			3	
Permitted Phases						3		
Actuated Green, G (s)	8.6			0.9			2.4	
Effective Green, g (s)	8.6			0.9			2.4	
Actuated g/C Ratio	0.14			0.01			0.04	
Clearance Time (s)	4.0			4.0			4.0	
Vehicle Extension (s)	3.0			3.0			3.0	
Lane Grp Cap (vph)	193			23			63	
v/s Ratio Prot				c0.00				
v/s Ratio Perm	c0.10						0.02	
v/c Ratio	0.68			0.22			0.44	
Uniform Delay, d1	24.8			29.6			28.5	
Progression Factor	1.00			1.00			1.00	
Incremental Delay, d2	9.6			4.7			4.9	
Delay (s)	34.4			34.3			33.4	
Level of Service	C			C			C	
Approach Delay (s)	34.4			34.3			33.4	
Approach LOS	C			C			C	

Intersection Summary

HCM 2010 methodology does not support more than 4 approaches.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	903	166	109	1081	25	137	1	115	29	9	22
Future Volume (vph)	35	903	166	109	1081	25	137	1	115	29	9	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	8	12	12	12
Total Lost time (s)	6.0	6.0		6.0	6.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (prot)	1770	3443		1770	5065			1775	1348		1794	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.77	1.00
Satd. Flow (perm)	1770	3443		1770	5065			1302	1348		1426	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	36	931	171	112	1114	26	141	1	119	30	9	23
RTOR Reduction (vph)	0	15	0	0	2	0	0	0	95	0	0	18
Lane Group Flow (vph)	36	1087	0	112	1138	0	0	142	24	0	39	5
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)			20			11			5			
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	2.0	34.4		6.8	39.2			14.2	14.2		14.2	14.2
Effective Green, g (s)	2.0	34.4		6.8	39.2			14.2	14.2		14.2	14.2
Actuated g/C Ratio	0.03	0.48		0.10	0.55			0.20	0.20		0.20	0.20
Clearance Time (s)	6.0	6.0		6.0	6.0			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
Lane Grp Cap (vph)	49	1658		168	2780			258	268		283	314
v/s Ratio Prot	0.02	c0.32		c0.06	c0.22							
v/s Ratio Perm								c0.11	0.02		0.03	0.00
v/c Ratio	0.73	0.66		0.67	0.41			0.55	0.09		0.14	0.01
Uniform Delay, d1	34.4	14.0		31.2	9.4			25.7	23.3		23.6	23.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	43.4	0.9		9.6	0.1			2.5	0.1		0.2	0.0
Delay (s)	77.9	15.0		40.8	9.5			28.3	23.5		23.8	23.0
Level of Service	E	B		D	A			C	C		C	C
Approach Delay (s)		17.0			12.3			26.1			23.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.0%	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												
Traffic Volume (veh/h)	35	903	166	109	1081	25	137	1	115	29	9	22
Future Volume (veh/h)	35	903	166	109	1081	25	137	1	115	29	9	22
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1788	1900	1863	1863
Adj Flow Rate, veh/h	36	931	171	112	1114	26	141	1	119	30	9	23
Adj No. of Lanes	1	2	0	1	3	0	0	1	1	0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	1117	205	142	2190	51	89	0	518	79	14	548
Arrive On Green	0.03	0.38	0.38	0.08	0.43	0.43	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1774	2972	546	1774	5108	119	0	1	1497	0	40	1583
Grp Volume(v), veh/h	36	554	548	112	739	401	142	0	119	39	0	23
Grp Sat Flow(s),veh/h/ln	1774	1770	1748	1774	1695	1837	1	0	1497	40	0	1583
Q Serve(g_s), s	1.6	23.0	23.1	5.0	12.9	12.9	0.0	0.0	4.6	0.0	0.0	0.8
Cycle Q Clear(g_c), s	1.6	23.0	23.1	5.0	12.9	12.9	28.0	0.0	4.6	28.0	0.0	0.8
Prop In Lane	1.00		0.31	1.00		0.06	0.99		1.00	0.77		1.00
Lane Grp Cap(c), veh/h	49	665	657	142	1454	788	89	0	518	93	0	548
V/C Ratio(X)	0.74	0.83	0.83	0.79	0.51	0.51	1.60	0.00	0.23	0.42	0.00	0.04
Avail Cap(c_a), veh/h	132	809	799	197	1676	908	89	0	518	93	0	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.1	22.9	23.0	36.5	16.9	16.9	40.4	0.0	18.8	30.6	0.0	17.6
Incr Delay (d2), s/veh	19.5	6.3	6.4	13.1	0.3	0.5	314.3	0.0	0.2	3.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	12.4	12.3	3.0	6.0	6.6	9.7	0.0	1.9	0.9	0.0	0.3
LnGrp Delay(d),s/veh	58.6	29.2	29.4	49.7	17.2	17.4	354.6	0.0	19.0	33.7	0.0	17.6
LnGrp LOS	E	C	C	D	B	B	F		B	C		B
Approach Vol, veh/h		1138			1252			261			62	
Approach Delay, s/veh		30.2			20.1			201.6			27.7	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.5	36.4		32.0	8.2	40.7		32.0
Change Period (Y+Rc), s	6.0	6.0		4.0	6.0	6.0		4.0
Max Green Setting (Gmax), s	9.0	37.0		28.0	6.0	40.0		28.0
Max Q Clear Time (g_c+I1), s	7.0	25.1		30.0	3.6	14.9		30.0
Green Ext Time (p_c), s	0.1	5.4		0.0	0.0	8.2		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	42.0	
HCM 2010 LOS	D	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1021	193	185	829	17	513	10	300	20	12	15
Future Volume (vph)	19	1021	193	185	829	17	513	10	300	20	12	15
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	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	0.99	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	4839		1641	5065		1545	1552	1455	1681	1749	1548
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.72	1.00	0.25	0.56	1.00
Satd. Flow (perm)	1770	4839		1641	5065		1212	1173	1455	442	984	1548
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	20	1064	201	193	864	18	534	10	312	21	12	16
RTOR Reduction (vph)	0	28	0	0	2	0	0	0	191	0	0	13
Lane Group Flow (vph)	20	1237	0	193	880	0	272	272	122	17	17	3
Confl. Peds. (#/hr)	2		12	12		2	5					5
Confl. Bikes (#/hr)			21			17			1			1
Heavy Vehicles (%)	2%	2%	10%	10%	2%	2%	10%	10%	10%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	2.0	29.0		12.0	39.0		27.0	27.0	39.0	16.0	16.0	16.0
Effective Green, g (s)	2.0	29.0		12.0	39.0		27.0	27.0	39.0	16.0	16.0	16.0
Actuated g/C Ratio	0.02	0.29		0.12	0.39		0.27	0.27	0.39	0.16	0.16	0.16
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)	35	1403		196	1975		327	316	625	70	157	247
v/s Ratio Prot	0.01	c0.26		c0.12	0.17				0.02			
v/s Ratio Perm							0.22	c0.23	0.06	c0.04	0.02	0.00
v/c Ratio	0.57	0.88		0.98	0.45		0.83	0.86	0.20	0.24	0.11	0.01
Uniform Delay, d1	48.6	33.9		43.9	22.5		34.4	34.7	20.1	36.7	35.9	35.3
Progression Factor	1.00	1.00		0.80	0.42		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.6	8.3		52.2	0.6		21.3	25.1	0.2	8.1	1.4	0.1
Delay (s)	69.1	42.2		87.3	10.0		55.6	59.8	20.3	44.8	37.3	35.4
Level of Service	E	D		F	A		E	E	C	D	D	D
Approach Delay (s)		42.6			23.9			44.1			39.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.1%	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												
Traffic Volume (veh/h)	19	1021	193	185	829	17	513	10	300	20	12	15
Future Volume (veh/h)	19	1021	193	185	829	17	513	10	300	20	12	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1840	1900	1727	1863	1900	1727	1727	1727	1863	1863	1863
Adj Flow Rate, veh/h	20	1064	201	193	864	18	541	0	312	16	18	16
Adj No. of Lanes	1	3	0	1	3	0	2	0	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	10	2	2	10	10	10	2	2	2
Cap, veh/h	444	2062	389	197	1843	38	808	0	565	358	503	420
Arrive On Green	0.25	0.49	0.49	0.24	0.72	0.72	0.27	0.00	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	4208	794	1645	5121	107	2526	0	1441	1059	1863	1554
Grp Volume(v), veh/h	20	846	419	193	572	310	541	0	312	16	18	16
Grp Sat Flow(s),veh/h/ln	1774	1674	1653	1645	1695	1837	1263	0	1441	1059	1863	1554
Q Serve(g_s), s	0.9	17.3	17.3	11.7	7.1	7.1	20.1	0.0	16.9	1.1	0.7	0.8
Cycle Q Clear(g_c), s	0.9	17.3	17.3	11.7	7.1	7.1	20.8	0.0	16.9	1.1	0.7	0.8
Prop In Lane	1.00		0.48	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	444	1641	810	197	1220	661	808	0	565	358	503	420
V/C Ratio(X)	0.05	0.52	0.52	0.98	0.47	0.47	0.67	0.00	0.55	0.04	0.04	0.04
Avail Cap(c_a), veh/h	444	1641	810	197	1220	661	808	0	565	358	503	420
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.79	0.72	0.72	0.72	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	17.4	17.4	37.9	10.0	10.0	34.6	0.0	23.7	27.1	26.9	26.9
Incr Delay (d2), s/veh	0.0	0.9	1.9	48.0	0.9	1.7	4.4	0.0	3.8	0.2	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	8.1	8.2	7.9	3.3	3.8	7.5	0.0	7.3	0.4	0.4	0.3
LnGrp Delay(d),s/veh	28.5	18.3	19.3	85.9	10.9	11.7	39.0	0.0	27.6	27.3	27.0	27.1
LnGrp LOS	C	B	B	F	B	B	D		C	C	C	C
Approach Vol, veh/h		1285			1075			853			50	
Approach Delay, s/veh		18.8			24.6			34.8			27.1	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	53.0		31.0	29.0	40.0		31.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	29.0		16.0	5.0	36.0		27.0
Max Q Clear Time (g_c+I1), s	13.7	19.3		3.1	2.9	9.1		22.8
Green Ext Time (p_c), s	0.0	5.5		0.1	0.0	6.1		1.8

Intersection Summary		
HCM 2010 Ctrl Delay		25.0
HCM 2010 LOS		C

Notes

HCM 2010 Signalized Intersection Summary
5: Hwy 101 SB/Madonna Inn & Madonna

Near Term PM 2025
02/26/2018

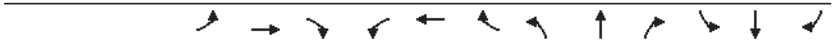
User approved volume balancing among the lanes for turning movement.

Central Coast Transportation Consulting

Synchro 10 Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	776	0	0	907	175	125	3	126	0	0	0
Future Volume (vph)	565	776	0	0	907	175	125	3	126	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				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frpb, ped/bikes	1.00	1.00			1.00		1.00	0.98				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.85				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3183	3539			3400		1641	1451				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3183	3539			3400		1641	1451				
Peak-hour factor, PHF	0.97	0.97	0.92	0.92	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92
Adj. Flow (vph)	582	800	0	0	935	180	129	3	130	0	0	0
RTOR Reduction (vph)	0	0	0	0	15	0	0	114	0	0	0	0
Lane Group Flow (vph)	582	800	0	0	1100	0	129	19	0	0	0	0
Confl. Peds. (#/hr)			11	11					2	2		
Confl. Bikes (#/hr)			19			17						
Heavy Vehicles (%)	10%	2%	2%	2%	2%	10%	10%	10%	10%	10%	10%	10%
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	25.0	79.4			50.4		12.6	12.6				
Effective Green, g (s)	25.0	79.4			50.4		12.6	12.6				
Actuated g/C Ratio	0.25	0.79			0.50		0.13	0.13				
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	795	2809			1713		206	182				
v/s Ratio Prot	c0.18	0.23			c0.32		c0.08	0.01				
v/s Ratio Perm												
v/c Ratio	0.73	0.28			0.64		0.63	0.11				
Uniform Delay, d1	34.4	2.7			18.2		41.5	38.7				
Progression Factor	0.93	2.39			0.58		1.00	1.00				
Incremental Delay, d2	2.2	0.2			1.4		5.8	0.3				
Delay (s)	34.2	6.7			12.0		47.3	39.0				
Level of Service	C	A			B		D	D				
Approach Delay (s)		18.3			12.0			43.1			0.0	
Approach LOS		B			B			D			A	

Intersection Summary				
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	65.3%	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												
Traffic Volume (veh/h)	565	776	0	0	907	175	125	3	126	0	0	0
Future Volume (veh/h)	565	776	0	0	907	175	125	3	126	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1727	1863	0	0	1839	1900	1727	1727	1900			
Adj Flow Rate, veh/h	582	800	0	0	935	180	129	3	130			
Adj No. of Lanes	2	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.97	0.97	0.92	0.92	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	10	2	0	0	2	2	10	10	10			
Cap, veh/h	940	2848	0	0	1370	263	190	4	165			
Arrive On Green	0.59	1.00	0.00	0.00	0.31	0.31	0.12	0.12	0.12			
Sat Flow, veh/h	3191	3632	0	0	3006	561	1645	33	1433			
Grp Volume(v), veh/h	582	800	0	0	560	555	129	0	133			
Grp Sat Flow(s),veh/h/ln	1596	1770	0	0	1747	1727	1645	0	1466			
Q Serve(g_s), s	11.8	0.0	0.0	0.0	28.0	28.0	7.5	0.0	8.8			
Cycle Q Clear(g_c), s	11.8	0.0	0.0	0.0	28.0	28.0	7.5	0.0	8.8			
Prop In Lane	1.00		0.00	0.00		0.32	1.00		0.98			
Lane Grp Cap(c), veh/h	940	2848	0	0	821	812	190	0	169			
V/C Ratio(X)	0.62	0.28	0.00	0.00	0.68	0.68	0.68	0.00	0.79			
Avail Cap(c_a), veh/h	940	2848	0	0	821	812	263	0	235			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00			
Upstream Filter(I)	0.52	0.52	0.00	0.00	0.68	0.68	1.00	0.00	1.00			
Uniform Delay (d), s/veh	16.9	0.0	0.0	0.0	27.7	27.8	42.5	0.0	43.0			
Incr Delay (d2), s/veh	0.7	0.1	0.0	0.0	3.2	3.2	4.2	0.0	11.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	0.1	0.0	0.0	14.2	14.1	3.6	0.0	4.1			
LnGrp Delay(d),s/veh	17.6	0.1	0.0	0.0	30.9	31.0	46.7	0.0	54.4			
LnGrp LOS	B	A			C	C	D		D			
Approach Vol, veh/h		1382			1115			262				
Approach Delay, s/veh		7.5			30.9			50.6				
Approach LOS		A			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		84.5			33.5	51.0		15.5
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		76.0			25.0	47.0		16.0
Max Q Clear Time (g_c+I1), s		2.0			13.8	30.0		10.8
Green Ext Time (p_c), s		6.6			2.1	6.8		0.6

Intersection Summary		
HCM 2010 Ctrl Delay	21.0	
HCM 2010 LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	499	15	357	10	90	10	404	609	13	10	537	630
Future Volume (vph)	499	15	357	10	90	10	404	609	13	10	537	630
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	0.95	0.95	1.00	1.00	1.00		1.00	0.95			0.95	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1690	1573	1770	1831		1770	3523			3535	2734
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00			0.94	1.00
Satd. Flow (perm)	1681	1690	1573	1770	1831		1770	3523			3319	2734
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	537	16	384	11	97	11	434	655	14	11	577	677
RTOR Reduction (vph)	0	0	184	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	274	279	200	11	104	0	434	668	0	0	588	677
Confl. Peds. (#/hr)			1	1			4		10	10		4
Confl. Bikes (#/hr)						2			21			12
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Perm	NA	pm+ov
Protected Phases	8	8	1	4	4		1	6			2	8
Permitted Phases			8							2		2
Actuated Green, G (s)	25.7	25.7	52.0	10.9	10.9		26.3	51.4			21.1	46.8
Effective Green, g (s)	25.7	25.7	52.0	10.9	10.9		26.3	51.4			21.1	46.8
Actuated g/C Ratio	0.26	0.26	0.52	0.11	0.11		0.26	0.51			0.21	0.47
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)	432	434	880	192	199		465	1810			700	1279
v/s Ratio Prot	0.16	c0.17	0.06	0.01	c0.06		c0.25	0.19				0.14
v/s Ratio Perm			0.07								c0.18	0.11
v/c Ratio	0.63	0.64	0.23	0.06	0.52		0.93	0.37			0.84	0.53
Uniform Delay, d1	33.0	33.1	13.1	39.9	42.1		36.0	14.6			37.8	18.8
Progression Factor	1.48	1.48	5.22	1.00	1.00		1.00	1.00			0.75	0.68
Incremental Delay, d2	6.7	6.9	0.1	0.1	2.4		25.8	0.1			7.9	0.4
Delay (s)	55.4	55.8	68.3	40.1	44.5		61.8	14.7			36.5	13.1
Level of Service	E	E	E	D	D		E	B			D	B
Approach Delay (s)		60.8			44.1			33.2			24.0	
Approach LOS		E			D			C			C	

Intersection Summary				
HCM 2000 Control Delay	37.7	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
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												
Traffic Volume (veh/h)	499	15	357	10	90	10	404	609	13	10	537	630
Future Volume (veh/h)	499	15	357	10	90	10	404	609	13	10	537	630
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.96	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	548	0	0	11	97	11	434	655	14	11	577	677
Adj No. of Lanes	2	0	1	1	1	0	1	2	0	0	2	2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	710	0	731	299	277	31	464	1810	39	43	716	1105
Arrive On Green	0.20	0.00	0.00	0.17	0.17	0.17	0.26	0.51	0.51	0.07	0.07	0.07
Sat Flow, veh/h	3548	0	1583	1774	1640	186	1774	3539	76	25	3410	2608
Grp Volume(v), veh/h	548	0	0	11	0	108	434	327	342	313	275	677
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1826	1774	1770	1845	1826	1610	1304
Q Serve(g_s), s	14.6	0.0	0.0	0.5	0.0	5.2	23.9	11.1	11.1	4.4	16.8	19.7
Cycle Q Clear(g_c), s	14.6	0.0	0.0	0.5	0.0	5.2	23.9	11.1	11.1	16.8	16.8	19.7
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.04	0.04		1.00
Lane Grp Cap(c), veh/h	710	0	731	299	0	308	464	905	944	421	338	1105
V/C Ratio(X)	0.77	0.00	0.00	0.04	0.00	0.35	0.94	0.36	0.36	0.74	0.81	0.61
Avail Cap(c_a), veh/h	710	0	731	299	0	308	479	920	960	421	338	1105
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.97	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	37.8	0.0	0.0	34.8	0.0	36.7	36.1	14.6	14.6	44.5	44.6	27.4
Incr Delay (d2), s/veh	7.7	0.0	0.0	0.0	0.0	0.7	25.6	0.2	0.2	6.2	12.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	0.3	0.0	2.7	15.0	5.4	5.7	9.3	8.7	9.5
LnGrp Delay(d),s/veh	45.6	0.0	0.0	34.8	0.0	37.4	61.7	14.9	14.9	50.7	57.1	28.2
LnGrp LOS	D			C		D	E	B	B	D	E	C
Approach Vol, veh/h		548			119			1103			1265	
Approach Delay, s/veh		45.6			37.2			33.3			40.1	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	30.1	25.0		20.9		55.1		24.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	27.0	21.0		16.0		52.0		20.0
Max Q Clear Time (g_c+I1), s	25.9	21.7		7.2		13.1		16.6
Green Ext Time (p_c), s	0.2	0.0		0.3		4.2		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	38.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	43	1671	38	27	1449
Future Vol, veh/h	40	43	1671	38	27	1449
Conflicting Peds, #/hr	0	0	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	175	-	50	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	47	1816	41	29	1575

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2672	918	0	0	1867	0
Stage 1	1826	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 18	274	-	-	319	-
Stage 1	113	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 16	271	-	-	316	-
Mov Cap-2 Maneuver	77	-	-	-	-	-
Stage 1	102	-	-	-	-	-
Stage 2	381	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	59.2	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	77	271	316	-
HCM Lane V/C Ratio	-	-	0.565	0.172	0.093	-
HCM Control Delay (s)	-	-	100.3	21	17.6	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	2.5	0.6	0.3	-

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	4	46	120	10	65	44	1575	62	41	1373	22
Future Volume (vph)	16	4	46	120	10	65	44	1575	62	41	1373	22
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	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1765	1863	1583	1770	1599		1770	3539	1532	1770	3539	1564
Flt Permitted	0.71	1.00	1.00	0.76	1.00		0.12	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	1313	1863	1583	1407	1599		228	3539	1532	221	3539	1564
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	16	4	47	124	10	67	45	1624	64	42	1415	23
RTOR Reduction (vph)	0	0	41	0	58	0	0	0	20	0	0	7
Lane Group Flow (vph)	16	4	6	124	19	0	45	1624	44	42	1415	16
Confl. Peds. (#/hr)	2					2			5	5		
Confl. Bikes (#/hr)												1
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6		6	2		2
Actuated Green, G (s)	10.6	10.6	10.6	10.6	10.6		54.9	54.9	54.9	54.2	54.2	54.2
Effective Green, g (s)	10.6	10.6	10.6	10.6	10.6		54.9	54.9	54.9	54.2	54.2	54.2
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13		0.69	0.69	0.69	0.68	0.68	0.68
Clearance Time (s)	4.0	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	3.0
Lane Grp Cap (vph)	173	246	209	186	211		218	2428	1051	198	2397	1059
v/s Ratio Prot		0.00			0.01		0.01	c0.46		0.01	c0.40	
v/s Ratio Perm	0.01		0.00	c0.09			0.13		0.03	0.14		0.01
v/c Ratio	0.09	0.02	0.03	0.67	0.09		0.21	0.67	0.04	0.21	0.59	0.01
Uniform Delay, d1	30.5	30.2	30.2	33.0	30.5		6.4	7.3	4.1	10.2	6.9	4.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.1	8.7	0.2		0.5	1.5	0.1	0.5	1.1	0.0
Delay (s)	30.7	30.2	30.3	41.7	30.6		6.9	8.8	4.1	10.7	8.0	4.2
Level of Service	C	C	C	D	C		A	A	A	B	A	A
Approach Delay (s)		30.4			37.5			8.5			8.0	
Approach LOS		C			D			A			A	

Intersection Summary				
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	63.5%	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												
Traffic Volume (veh/h)	16	4	46	120	10	65	44	1575	62	41	1373	22
Future Volume (veh/h)	16	4	46	120	10	65	44	1575	62	41	1373	22
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	16	4	0	124	10	67	45	1624	64	42	1415	23
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	226	192	257	25	170	263	2124	946	387	2467	1088
Arrive On Green	0.12	0.12	0.00	0.12	0.12	0.12	0.03	0.60	0.60	0.13	0.70	0.70
Sat Flow, veh/h	1312	1863	1583	1400	209	1399	1774	3539	1577	1774	3539	1560
Grp Volume(v), veh/h	16	4	0	124	0	77	45	1624	64	42	1415	23
Grp Sat Flow(s),veh/h/ln	1312	1863	1583	1400	0	1608	1774	1770	1577	1774	1770	1560
Q Serve(g_s), s	0.9	0.2	0.0	6.8	0.0	3.5	0.9	27.1	1.4	0.0	16.1	0.4
Cycle Q Clear(g_c), s	4.4	0.2	0.0	7.0	0.0	3.5	0.9	27.1	1.4	0.0	16.1	0.4
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	226	192	257	0	195	263	2124	946	387	2467	1088
V/C Ratio(X)	0.08	0.02	0.00	0.48	0.00	0.39	0.17	0.76	0.07	0.11	0.57	0.02
Avail Cap(c_a), veh/h	294	373	317	367	0	322	296	2124	946	387	2467	1088
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	30.9	0.0	34.0	0.0	32.4	9.8	11.8	6.7	18.9	6.1	3.7
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.4	0.0	1.3	0.2	2.0	0.1	0.1	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.0	2.8	0.0	1.6	0.4	13.7	0.6	0.7	8.0	0.2
LnGrp Delay(d),s/veh	34.7	31.0	0.0	35.4	0.0	33.7	10.0	13.8	6.8	19.0	7.1	3.8
LnGrp LOS	C	C		D		C	A	B	A	B	A	A
Approach Vol, veh/h		20			201			1733			1480	
Approach Delay, s/veh		33.9			34.8			13.5			7.4	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	59.8		13.7	14.3	52.0		13.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	4.0	48.0		16.0
Max Q Clear Time (g_c+I1), s	2.9	18.1		9.0	2.0	29.1		6.4
Green Ext Time (p_c), s	0.0	12.6		0.5	0.0	12.4		0.0

Intersection Summary			
HCM 2010 Ctrl Delay	12.2		
HCM 2010 LOS	B		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	496	108	190	925	760	304
Future Volume (vph)	496	108	190	925	760	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5	6.0	6.0	3.5
Lane Util. Factor	0.97		1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3132		1641	3539	3539	1444
Flt Permitted	0.96		0.95	1.00	1.00	1.00
Satd. Flow (perm)	3132		1641	3539	3539	1444
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	528	115	202	984	809	323
RTOR Reduction (vph)	19	0	0	0	0	99
Lane Group Flow (vph)	624	0	202	984	809	224
Confl. Peds. (#/hr)	3					
Confl. Bikes (#/hr)						8
Heavy Vehicles (%)	10%	10%	10%	2%	2%	10%
Turn Type	Prot		Prot	NA	NA	pm+ov
Protected Phases	3		1	6	2	3
Permitted Phases						2
Actuated Green, G (s)	23.1		17.8	67.4	46.1	69.2
Effective Green, g (s)	23.1		17.8	67.4	46.1	69.2
Actuated g/C Ratio	0.23		0.18	0.67	0.46	0.69
Clearance Time (s)	3.5		3.5	6.0	6.0	3.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	723		292	2385	1631	999
v/s Ratio Prot	c0.20		c0.12	0.28	c0.23	0.05
v/s Ratio Perm						0.10
v/c Ratio	0.86		0.69	0.41	0.50	0.22
Uniform Delay, d1	36.9		38.5	7.4	18.8	5.6
Progression Factor	1.00		1.00	1.00	0.84	5.95
Incremental Delay, d2	10.4		6.9	0.5	1.0	0.1
Delay (s)	47.3		45.4	7.9	16.8	33.5
Level of Service	D		D	A	B	C
Approach Delay (s)	47.3			14.3	21.6	
Approach LOS	D			B	C	

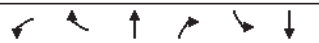
Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 methodology does not support exclusive ped or hold phases.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	500	165	845	195	155	1195
Future Volume (vph)	500	165	845	195	155	1195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1549	3423		1770	3539
Flt Permitted	0.95	1.00	1.00		0.19	1.00
Satd. Flow (perm)	1770	1549	3423		352	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	526	174	889	205	163	1258
RTOR Reduction (vph)	0	81	28	0	0	0
Lane Group Flow (vph)	526	93	1066	0	163	1258
Confl. Peds. (#/hr)		9				
Confl. Bikes (#/hr)		3		8		
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	22.9	22.9	36.1		36.1	36.1
Effective Green, g (s)	22.9	22.9	36.1		36.1	36.1
Actuated g/C Ratio	0.33	0.33	0.52		0.52	0.52
Clearance Time (s)	5.0	5.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	579	506	1765		181	1825
v/s Ratio Prot	c0.30		0.31			0.36
v/s Ratio Perm		0.06			c0.46	
v/c Ratio	0.91	0.18	0.60		0.90	0.69
Uniform Delay, d1	22.5	16.9	11.9		15.3	12.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	18.0	0.2	0.6		40.0	1.1
Delay (s)	40.6	17.0	12.5		55.3	13.8
Level of Service	D	B	B		E	B
Approach Delay (s)	34.7		12.5			18.6
Approach LOS	C		B			B

Intersection Summary				
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	80.0%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	500	165	845	195	155	1195
Future Volume (veh/h)	500	165	845	195	155	1195
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	526	174	889	205	163	1258
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	563	502	1522	351	263	1895
Arrive On Green	0.32	0.32	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1774	1583	2935	655	513	3632
Grp Volume(v), veh/h	526	174	553	541	163	1258
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1727	513	1770
Q Serve(g_s), s	21.5	6.3	15.8	15.8	23.5	19.1
Cycle Q Clear(g_c), s	21.5	6.3	15.8	15.8	39.3	19.1
Prop In Lane	1.00	1.00		0.38	1.00	
Lane Grp Cap(c), veh/h	563	502	948	925	263	1895
V/C Ratio(X)	0.93	0.35	0.58	0.58	0.62	0.66
Avail Cap(c_a), veh/h	570	509	948	925	263	1895
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	19.6	11.7	11.7	25.0	12.5
Incr Delay (d2), s/veh	22.7	0.4	0.9	1.0	4.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	2.8	7.9	7.8	3.6	9.5
LnGrp Delay(d),s/veh	47.4	20.0	12.6	12.7	29.5	13.4
LnGrp LOS	D	B	B	B	C	B
Approach Vol, veh/h	700		1094			1421
Approach Delay, s/veh	40.6		12.7			15.2
Approach LOS	D		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		46.0				46.0		28.7
Change Period (Y+Rc), s		6.0				6.0		5.0
Max Green Setting (Gmax), s		40.0				40.0		24.0
Max Q Clear Time (g_c+I1), s		17.8				41.3		23.5
Green Ext Time (p_c), s		7.3				0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	10	20	710	20	330	40	595	470	280	690	30
Future Volume (vph)	10	10	20	710	20	330	40	595	470	280	690	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	3.5	4.5	4.5	3.5	4.5	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1542	1681	1690	1560	1770	3539	1573	1770	3511	
Flt Permitted		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1817	1542	1681	1690	1560	1770	3539	1573	1770	3511	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	21	740	21	344	42	620	490	292	719	31
RTOR Reduction (vph)	0	0	20	0	0	247	0	0	193	0	2	0
Lane Group Flow (vph)	0	20	1	377	384	97	42	620	297	292	748	0
Confl. Peds. (#/hr)	1		7	7		1	9		1	1		9
Confl. Bikes (#/hr)			2			2						12
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		6.3	6.3	26.9	26.9	26.9	3.7	24.6	51.5	20.8	41.7	
Effective Green, g (s)		6.3	6.3	26.9	26.9	26.9	3.7	24.6	51.5	20.8	41.7	
Actuated g/C Ratio		0.07	0.07	0.28	0.28	0.28	0.04	0.26	0.54	0.22	0.44	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	3.5	4.5	4.5	3.5	4.5	
Vehicle Extension (s)		2.0	2.0	2.0	2.0	2.0	2.0	5.0	2.0	3.5	5.0	
Lane Grp Cap (vph)		119	101	473	475	438	68	910	847	385	1531	
v/s Ratio Prot		c0.01		0.22	c0.23		0.02	c0.18	0.10	c0.17	0.21	
v/s Ratio Perm			0.00			0.06			0.09			
v/c Ratio		0.17	0.01	0.80	0.81	0.22	0.62	0.68	0.35	0.76	0.49	
Uniform Delay, d1		42.2	41.7	31.8	32.0	26.3	45.3	32.0	12.5	35.0	19.3	
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		0.2	0.0	8.5	9.2	0.1	11.2	2.7	0.1	8.6	0.5	
Delay (s)		42.4	41.8	40.3	41.2	26.4	56.4	34.7	12.6	43.6	19.8	
Level of Service		D	D	D	D	C	E	C	B	D	B	
Approach Delay (s)		42.1			36.3			26.1			26.5	
Approach LOS		D			D			C			C	

Intersection Summary				
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	69.8%	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												
Traffic Volume (veh/h)	10	10	20	710	20	330	40	595	470	280	690	30
Future Volume (veh/h)	10	10	20	710	20	330	40	595	470	280	690	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	1.00		0.99	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	10	21	755	0	0	42	620	490	292	719	31
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	48	80	893	0	398	52	1027	854	341	1563	67
Arrive On Green	0.05	0.05	0.05	0.25	0.00	0.00	0.03	0.29	0.29	0.19	0.45	0.45
Sat Flow, veh/h	909	909	1491	3548	0	1583	1774	3539	1569	1774	3450	149
Grp Volume(v), veh/h	20	0	21	755	0	0	42	620	490	292	369	381
Grp Sat Flow(s),veh/h/ln	1817	0	1491	1774	0	1583	1774	1770	1569	1774	1770	1829
Q Serve(g_s), s	0.8	0.0	1.1	16.2	0.0	0.0	1.9	12.1	16.7	12.7	11.5	11.5
Cycle Q Clear(g_c), s	0.8	0.0	1.1	16.2	0.0	0.0	1.9	12.1	16.7	12.7	11.5	11.5
Prop In Lane	0.50		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	97	0	80	893	0	398	52	1027	854	341	802	829
V/C Ratio(X)	0.21	0.00	0.26	0.85	0.00	0.00	0.80	0.60	0.57	0.86	0.46	0.46
Avail Cap(c_a), veh/h	613	0	503	1352	0	604	157	1092	883	461	849	878
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	36.4	28.5	0.0	0.0	38.6	24.4	12.2	31.2	15.1	15.1
Incr Delay (d2), s/veh	0.4	0.0	0.6	2.0	0.0	0.0	10.0	1.4	1.5	12.1	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.5	8.1	0.0	0.0	1.1	6.1	11.1	7.4	5.8	6.0
LnGrp Delay(d),s/veh	36.6	0.0	37.0	30.5	0.0	0.0	48.6	25.9	13.7	43.3	16.0	16.0
LnGrp LOS	D		D	C			D	C	B	D	B	B
Approach Vol, veh/h		41			755			1152			1042	
Approach Delay, s/veh		36.8			30.5			21.5			23.6	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.9	27.7		8.8	5.9	40.8		24.6
Change Period (Y+Rc), s	3.5	4.5		4.5	3.5	4.5		4.5
Max Green Setting (Gmax), s	20.8	24.7		27.0	7.1	38.4		30.5
Max Q Clear Time (g_c+I1), s	14.7	18.7		3.1	3.9	13.5		18.2
Green Ext Time (p_c), s	0.7	4.4		0.1	0.0	8.8		1.8

Intersection Summary			
HCM 2010 Ctrl Delay	24.7		
HCM 2010 LOS	C		

Notes

User approved volume balancing among the lanes for turning movement.

Near Term Plus Project

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	138	30	158	69	130	55	542	134	472	744	39
Future Volume (vph)	95	138	30	158	69	130	55	542	134	472	744	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.94	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1804		3433	1649	1467	1770	5085	1554	3433	3504	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1804		3433	1649	1467	1770	5085	1554	3433	3504	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	102	148	32	170	74	140	59	583	144	508	800	42
RTOR Reduction (vph)	0	7	0	0	21	79	0	0	96	0	3	0
Lane Group Flow (vph)	102	173	0	170	101	13	59	583	48	508	839	0
Confl. Peds. (#/hr)	26		8	8			7		19	19		7
Confl. Bikes (#/hr)			5			8						10
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	2	2		6	6		3	8	6	7	4	
Permitted Phases						6			8			
Actuated Green, G (s)	14.1	14.1		11.6	11.6	11.6	6.3	16.3	27.9	20.4	30.4	
Effective Green, g (s)	14.1	14.1		11.6	11.6	11.6	6.3	16.3	27.9	20.4	30.4	
Actuated g/C Ratio	0.17	0.17		0.14	0.14	0.14	0.07	0.19	0.33	0.24	0.36	
Clearance Time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
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)	295	301		471	226	201	132	982	614	829	1262	
v/s Ratio Prot	0.06	c0.10		0.05	c0.06		0.03	0.11	0.01	c0.15	c0.24	
v/s Ratio Perm						0.01			0.02			
v/c Ratio	0.35	0.58		0.36	0.45	0.06	0.45	0.59	0.08	0.61	0.66	
Uniform Delay, d1	31.1	32.4		33.0	33.5	31.7	37.4	31.0	19.4	28.5	22.7	
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	0.7	2.7		0.5	1.4	0.1	2.4	1.0	0.1	1.4	1.3	
Delay (s)	31.8	35.1		33.5	34.9	31.8	39.8	32.0	19.5	29.8	24.0	
Level of Service	C	D		C	C	C	D	C	B	C	C	
Approach Delay (s)		33.9			33.5			30.3			26.2	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	84.4	Sum of lost time (s)	22.0	
Intersection Capacity Utilization	61.0%	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												
Traffic Volume (veh/h)	95	138	30	158	69	130	55	542	134	472	744	39
Future Volume (veh/h)	95	138	30	158	69	130	55	542	134	472	744	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	102	148	32	170	124	107	59	583	144	508	800	42
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	263	57	466	245	199	157	1050	526	653	1049	55
Arrive On Green	0.18	0.18	0.18	0.13	0.13	0.13	0.09	0.21	0.21	0.19	0.31	0.31
Sat Flow, veh/h	1774	1466	317	3548	1863	1515	1774	5085	1540	3442	3408	179
Grp Volume(v), veh/h	102	0	180	170	124	107	59	583	144	508	415	427
Grp Sat Flow(s),veh/h/ln	1774	0	1783	1774	1863	1515	1774	1695	1540	1721	1770	1817
Q Serve(g_s), s	3.8	0.0	6.9	3.3	4.7	5.0	2.4	7.7	5.1	10.5	16.0	16.0
Cycle Q Clear(g_c), s	3.8	0.0	6.9	3.3	4.7	5.0	2.4	7.7	5.1	10.5	16.0	16.0
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	319	0	320	466	245	199	157	1050	526	653	544	559
V/C Ratio(X)	0.32	0.00	0.56	0.36	0.51	0.54	0.38	0.56	0.27	0.78	0.76	0.76
Avail Cap(c_a), veh/h	567	0	569	1133	595	484	213	1827	761	1054	966	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	28.1	29.8	30.4	30.5	32.3	26.7	18.2	28.9	23.5	23.5
Incr Delay (d2), s/veh	0.6	0.0	1.5	0.5	1.6	2.2	1.5	0.5	0.3	2.0	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	0.0	6.4	2.9	4.5	3.9	2.2	6.6	4.8	8.9	12.7	13.0
LnGrp Delay(d),s/veh	27.4	0.0	29.7	30.3	32.0	32.8	33.8	27.2	18.4	31.0	25.8	25.7
LnGrp LOS	C		C	C	C	C	C	C	B	C	C	C
Approach Vol, veh/h		282			401			786			1350	
Approach Delay, s/veh		28.9			31.5			26.1			27.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		18.5	11.7	29.6		15.4	19.3	22.0
Change Period (Y+Rc), s		5.0	5.0	6.5		5.5	5.0	6.5
Max Green Setting (Gmax), s		24.0	9.0	41.0		24.0	23.0	27.0
Max Q Clear Time (g_c+I1), s		8.9	4.4	18.0		7.0	12.5	9.7
Green Ext Time (p_c), s		1.3	0.0	5.2		1.7	1.7	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	691	5	3	530	0	41	8	14	34	144	12
Future Volume (vph)	9	691	5	3	530	0	41	8	14	34	144	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		5.0	6.0	6.0			5.0	5.0		5.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00			1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97			1.00	0.97		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00		1.00	1.00	0.85			1.00	0.85		0.99
Flt Protected	0.95	1.00		0.95	1.00	1.00			0.98	1.00		0.96
Satd. Flow (prot)	1762	3539		1770	3539	1536			1828	1533		1763
Flt Permitted	0.95	1.00		0.95	1.00	1.00			0.88	1.00		0.74
Satd. Flow (perm)	1762	3539		1770	3539	1536			1632	1533		1361
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	751	5	3	576	0	45	9	15	37	157	13
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	0	29	0	0
Lane Group Flow (vph)	10	751	0	8	576	16	0	0	24	8	0	184
Confl. Peds. (#/hr)	6						6			3	3	
Confl. Bikes (#/hr)										16		
Turn Type	Prot	NA	Prot	Prot	NA	Perm		Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	1	6				8			4
Permitted Phases						6		8		8	4	
Actuated Green, G (s)	0.5	24.1		0.5	23.1	23.1			13.3	13.3		13.3
Effective Green, g (s)	0.5	24.1		0.5	23.1	23.1			13.3	13.3		13.3
Actuated g/C Ratio	0.01	0.37		0.01	0.35	0.35			0.20	0.20		0.20
Clearance Time (s)	6.0	6.0		5.0	6.0	6.0			5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)	13	1300		13	1246	540			330	310		275
v/s Ratio Prot	c0.01	c0.21		0.00	0.16							
v/s Ratio Perm						0.01			0.01	0.00		c0.14
v/c Ratio	0.77	0.58		0.62	0.46	0.03			0.07	0.02		0.67
Uniform Delay, d1	32.5	16.7		32.5	16.4	13.9			21.2	21.0		24.1
Progression Factor	1.00	1.00		1.00	1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	128.6	0.6		64.0	0.3	0.0			0.1	0.0		6.1
Delay (s)	161.1	17.3		96.5	16.7	13.9			21.3	21.0		30.2
Level of Service	F	B		F	B	B			C	C		C
Approach Delay (s)		19.2			17.5				21.1			30.2
Approach LOS		B			B				C			C

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	27.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR2	SEL	SER2	NEL2	NEL	NER
Lane Configurations						
Traffic Volume (vph)	13	3	3	1	0	17
Future Volume (vph)	13	3	3	1	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	
Lane Util. Factor		1.00			1.00	
Frpb, ped/bikes		1.00			0.93	
Flpb, ped/bikes		1.00			1.00	
Frt		0.93			0.87	
Flt Protected		0.98			1.00	
Satd. Flow (prot)		1695			1513	
Flt Permitted		0.98			1.00	
Satd. Flow (perm)		1695			1513	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	3	3	1	0	18
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	6	0	0	19	0
Confl. Peds. (#/hr)						3
Confl. Bikes (#/hr)	3					
Turn Type		Prot		Perm	Prot	
Protected Phases		7			3	
Permitted Phases				3		
Actuated Green, G (s)		0.7			1.0	
Effective Green, g (s)		0.7			1.0	
Actuated g/C Ratio		0.01			0.02	
Clearance Time (s)		5.0			5.0	
Vehicle Extension (s)		3.0			3.0	
Lane Grp Cap (vph)		18			23	
v/s Ratio Prot		c0.00				
v/s Ratio Perm					0.01	
v/c Ratio		0.33			0.83	
Uniform Delay, d1		32.2			32.2	
Progression Factor		1.00			1.00	
Incremental Delay, d2		10.6			110.0	
Delay (s)		42.8			142.2	
Level of Service		D			F	
Approach Delay (s)		42.8			142.2	
Approach LOS		D			F	

Intersection Summary

HCM 2010 methodology does not support more than 4 approaches.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1047	83	230	619	21	46	1	151	11	0	3
Future Volume (vph)	12	1047	83	230	619	21	46	1	151	11	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1768	3496		1770	5055			1763	1546		1767	1545
Flt Permitted	0.95	1.00		0.95	1.00			0.73	1.00		0.72	1.00
Satd. Flow (perm)	1768	3496		1770	5055			1346	1546		1344	1545
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	14	1190	94	261	703	24	52	1	172	12	0	3
RTOR Reduction (vph)	0	5	0	0	2	0	0	0	148	0	0	3
Lane Group Flow (vph)	14	1279	0	261	725	0	0	53	24	0	13	0
Confl. Peds. (#/hr)	1		3	3		1	7		2	2		7
Confl. Bikes (#/hr)			3			13			6			3
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	0.7	38.5		13.1	50.9			10.8	10.8		10.8	10.8
Effective Green, g (s)	0.7	38.5		13.1	50.9			10.8	10.8		10.8	10.8
Actuated g/C Ratio	0.01	0.49		0.17	0.65			0.14	0.14		0.14	0.14
Clearance Time (s)	6.0	6.0		6.0	6.0			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
Lane Grp Cap (vph)	15	1716		295	3281			185	212		185	212
v/s Ratio Prot	0.01	c0.37		c0.15	0.14							
v/s Ratio Perm								c0.04	0.02		0.01	0.00
v/c Ratio	0.93	0.75		0.88	0.22			0.29	0.11		0.07	0.00
Uniform Delay, d1	38.8	16.0		31.9	5.6			30.3	29.6		29.4	29.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	197.1	1.8		25.4	0.0			0.9	0.2		0.2	0.0
Delay (s)	235.9	17.8		57.3	5.7			31.2	29.8		29.6	29.2
Level of Service	F	B		E	A			C	C		C	C
Approach Delay (s)		20.2			19.3			30.2			29.5	
Approach LOS		C			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	78.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	67.9%	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												
Traffic Volume (veh/h)	12	1047	83	230	619	21	46	1	151	11	0	3
Future Volume (veh/h)	12	1047	83	230	619	21	46	1	151	11	0	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	14	1190	94	261	703	24	52	1	172	12	0	3
Adj No. of Lanes	1	2	0	1	3	0	0	1	1	0	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	1217	96	256	2512	85	80	1	481	81	0	482
Arrive On Green	0.01	0.37	0.37	0.14	0.50	0.50	0.31	0.31	0.31	0.31	0.00	0.31
Sat Flow, veh/h	1774	3319	262	1774	5044	172	3	3	1547	2	0	1551
Grp Volume(v), veh/h	14	634	650	261	472	255	53	0	172	12	0	3
Grp Sat Flow(s),veh/h/ln	1774	1770	1811	1774	1695	1826	5	0	1547	2	0	1551
Q Serve(g_s), s	0.7	31.8	31.9	13.0	7.3	7.3	0.1	0.0	7.8	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.7	31.8	31.9	13.0	7.3	7.3	28.0	0.0	7.8	28.0	0.0	0.1
Prop In Lane	1.00		0.14	1.00		0.09	0.98		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	23	649	664	256	1688	909	81	0	481	81	0	482
V/C Ratio(X)	0.60	0.98	0.98	1.02	0.28	0.28	0.66	0.00	0.36	0.15	0.00	0.01
Avail Cap(c_a), veh/h	79	649	664	256	1688	909	81	0	481	81	0	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.2	28.1	28.2	38.5	13.2	13.2	44.6	0.0	24.0	45.0	0.0	21.4
Incr Delay (d2), s/veh	22.5	29.4	29.6	61.0	0.1	0.2	17.4	0.0	0.4	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	28.3	28.9	19.2	6.2	6.7	3.1	0.0	6.0	0.6	0.0	0.1
LnGrp Delay(d),s/veh	66.6	57.5	57.8	99.6	13.3	13.3	62.0	0.0	24.5	45.8	0.0	21.4
LnGrp LOS	E	E	E	F	B	B	E		C	D		C
Approach Vol, veh/h		1298			988			225			15	
Approach Delay, s/veh		57.7			36.1			33.3			40.9	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.0	39.0		32.0	7.2	50.8		32.0
Change Period (Y+Rc), s	6.0	6.0		4.0	6.0	6.0		4.0
Max Green Setting (Gmax), s	13.0	33.0		28.0	4.0	42.0		28.0
Max Q Clear Time (g_c+I1), s	15.0	33.9		30.0	2.7	9.3		30.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	5.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	47.0	
HCM 2010 LOS	D	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	1189	87	143	591	34	335	26	500	5	2	10
Future Volume (vph)	18	1189	87	143	591	34	335	26	500	5	2	10
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	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	0.99	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	4986		1641	5035		1547	1563	1468	1681	1661	1553
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.75	1.00	0.25	0.62	1.00
Satd. Flow (perm)	1770	4986		1641	5035		1230	1229	1468	442	1055	1553
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	20	1336	98	161	664	38	376	29	562	6	2	11
RTOR Reduction (vph)	0	8	0	0	6	0	0	0	249	0	0	9
Lane Group Flow (vph)	20	1426	0	161	696	0	203	202	313	4	4	2
Confl. Peds. (#/hr)	1		5	5		1	4					4
Confl. Bikes (#/hr)			23			14						
Heavy Vehicles (%)	2%	2%	10%	10%	2%	2%	10%	10%	10%	2%	10%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	2.4	34.9		14.1	46.6		19.0	19.0	33.1	16.0	16.0	16.0
Effective Green, g (s)	2.4	34.9		14.1	46.6		19.0	19.0	33.1	16.0	16.0	16.0
Actuated g/C Ratio	0.02	0.35		0.14	0.47		0.19	0.19	0.33	0.16	0.16	0.16
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)	42	1740		231	2346		233	233	544	70	168	248
v/s Ratio Prot	0.01	c0.29		c0.10	0.14				0.08			
v/s Ratio Perm							c0.17	0.16	0.13	c0.01	0.00	0.00
v/c Ratio	0.48	0.82		0.70	0.30		0.87	0.87	0.58	0.06	0.02	0.01
Uniform Delay, d1	48.2	29.7		40.9	16.5		39.3	39.3	27.6	35.6	35.4	35.3
Progression Factor	1.00	1.00		1.37	0.49		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	4.5		7.3	0.3		33.2	32.6	1.5	1.6	0.3	0.1
Delay (s)	56.5	34.1		63.5	8.4		72.5	71.9	29.1	37.2	35.7	35.4
Level of Service	E	C		E	A		E	E	C	D	D	D
Approach Delay (s)		34.4			18.6			47.2			35.8	
Approach LOS		C			B			D			D	

Intersection Summary				
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	79.2%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	1189	87	143	591	34	335	26	500	5	2	10
Future Volume (veh/h)	18	1189	87	143	591	34	335	26	500	5	2	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1853	1900	1727	1863	1900	1727	1727	1727	1863	1792	1863
Adj Flow Rate, veh/h	20	1336	98	161	664	38	397	0	562	4	5	11
Adj No. of Lanes	1	3	0	1	3	0	2	0	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	10	2	2	10	10	10	2	10	2
Cap, veh/h	461	2759	202	188	2112	120	626	0	445	232	341	299
Arrive On Green	0.26	0.58	0.58	0.23	0.86	0.86	0.19	0.00	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1774	4794	352	1645	4911	279	2565	0	1459	842	1792	1573
Grp Volume(v), veh/h	20	940	494	161	457	245	397	0	562	4	5	11
Grp Sat Flow(s),veh/h/ln	1774	1686	1774	1645	1695	1801	1282	0	1459	842	1792	1573
Q Serve(g_s), s	0.8	16.4	16.4	9.4	2.6	2.6	14.9	0.0	19.0	0.4	0.2	0.6
Cycle Q Clear(g_c), s	0.8	16.4	16.4	9.4	2.6	2.6	15.1	0.0	19.0	0.4	0.2	0.6
Prop In Lane	1.00		0.20	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	1941	1021	188	1458	774	626	0	445	232	341	299
V/C Ratio(X)	0.04	0.48	0.48	0.85	0.31	0.32	0.63	0.00	1.26	0.02	0.01	0.04
Avail Cap(c_a), veh/h	461	1941	1021	263	1458	774	626	0	445	232	341	299
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	12.5	12.5	37.7	4.2	4.2	39.0	0.0	34.8	33.0	32.9	33.0
Incr Delay (d2), s/veh	0.0	0.9	1.6	13.8	0.4	0.8	4.9	0.0	134.9	0.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	12.4	13.2	8.1	2.2	2.5	9.6	0.0	52.2	0.2	0.2	0.5
LnGrp Delay(d),s/veh	27.7	13.4	14.1	51.6	4.6	5.0	43.9	0.0	169.7	33.1	33.0	33.3
LnGrp LOS	C	B	B	D	A	A	D		F	C	C	C
Approach Vol, veh/h		1454			863			959			20	
Approach Delay, s/veh		13.8			13.5			117.6			33.2	
Approach LOS		B			B			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	61.5		23.0	30.0	47.0		23.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	33.0		16.0	6.0	43.0		19.0
Max Q Clear Time (g_c+I1), s	11.4	18.4		2.6	2.8	4.6		21.0
Green Ext Time (p_c), s	0.2	8.2		0.0	0.0	5.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay	44.0		
HCM 2010 LOS	D		

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	529	1165	0	0	645	116	123	2	153	0	0	0
Future Volume (vph)	529	1165	0	0	645	116	123	2	153	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				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.85				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3183	3539			3407		1641	1471				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3183	3539			3407		1641	1471				
Peak-hour factor, PHF	0.84	0.84	0.92	0.92	0.84	0.84	0.84	0.84	0.84	0.92	0.92	0.92
Adj. Flow (vph)	630	1387	0	0	768	138	146	2	182	0	0	0
RTOR Reduction (vph)	0	0	0	0	13	0	0	72	0	0	0	0
Lane Group Flow (vph)	630	1387	0	0	893	0	146	112	0	0	0	0
Confl. Peds. (#/hr)	1		9	9		1						
Confl. Bikes (#/hr)			10			15						
Heavy Vehicles (%)	10%	2%	2%	2%	2%	10%	10%	10%	10%	2%	2%	2%
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	30.0	78.0			44.0		14.0	14.0				
Effective Green, g (s)	30.0	78.0			44.0		14.0	14.0				
Actuated g/C Ratio	0.30	0.78			0.44		0.14	0.14				
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	954	2760			1499		229	205				
v/s Ratio Prot	c0.20	0.39			c0.26		c0.09	0.08				
v/s Ratio Perm												
v/c Ratio	0.66	0.50			0.60		0.64	0.55				
Uniform Delay, d1	30.6	4.0			21.2		40.6	40.0				
Progression Factor	0.41	0.28			0.53		1.00	1.00				
Incremental Delay, d2	1.1	0.4			1.7		5.7	2.9				
Delay (s)	13.6	1.5			12.8		46.3	43.0				
Level of Service	B	A			B		D	D				
Approach Delay (s)		5.3			12.8			44.5			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.2%	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												
Traffic Volume (veh/h)	529	1165	0	0	645	116	123	2	153	0	0	0
Future Volume (veh/h)	529	1165	0	0	645	116	123	2	153	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1727	1863	0	0	1841	1900	1727	1727	1900			
Adj Flow Rate, veh/h	630	1387	0	0	768	138	146	2	182			
Adj No. of Lanes	2	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.84	0.84	0.92	0.92	0.84	0.84	0.84	0.84	0.84			
Percent Heavy Veh, %	10	2	0	0	2	2	10	10	10			
Cap, veh/h	1088	2728	0	0	1151	207	245	2	217			
Arrive On Green	0.68	1.00	0.00	0.00	0.13	0.13	0.15	0.15	0.15			
Sat Flow, veh/h	3191	3632	0	0	3044	530	1645	16	1455			
Grp Volume(v), veh/h	630	1387	0	0	455	451	146	0	184			
Grp Sat Flow(s),veh/h/ln	1596	1770	0	0	1749	1734	1645	0	1471			
Q Serve(g_s), s	10.4	0.0	0.0	0.0	24.8	24.8	8.3	0.0	12.2			
Cycle Q Clear(g_c), s	10.4	0.0	0.0	0.0	24.8	24.8	8.3	0.0	12.2			
Prop In Lane	1.00		0.00	0.00		0.31	1.00		0.99			
Lane Grp Cap(c), veh/h	1088	2728	0	0	682	676	245	0	219			
V/C Ratio(X)	0.58	0.51	0.00	0.00	0.67	0.67	0.59	0.00	0.84			
Avail Cap(c_a), veh/h	1088	2728	0	0	682	676	313	0	279			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.51	0.51	0.00	0.00	0.91	0.91	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.1	0.0	0.0	0.0	37.4	37.4	39.7	0.0	41.4			
Incr Delay (d2), s/veh	0.4	0.4	0.0	0.0	4.7	4.7	2.3	0.0	16.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	6.9	0.2	0.0	0.0	18.5	18.4	7.1	0.0	9.9			
LnGrp Delay(d),s/veh	12.5	0.4	0.0	0.0	42.0	42.1	42.0	0.0	57.6			
LnGrp LOS	B	A			D	D	D		E			
Approach Vol, veh/h		2017			906			330				
Approach Delay, s/veh		4.2			42.1			50.7				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		81.1			38.1	43.0		18.9
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		73.0			30.0	39.0		19.0
Max Q Clear Time (g_c+I1), s		2.0			12.4	26.8		14.2
Green Ext Time (p_c), s		15.7			2.8	4.5		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		19.4
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	705	33	552	10	13	10	168	315	10	10	450	560
Future Volume (vph)	705	33	552	10	13	10	168	315	10	10	450	560
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	0.95	0.95	1.00	1.00	1.00		1.00	0.95			0.95	0.88
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1693	1556	1770	1719		1770	3518			3535	2764
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.95	1.00			0.94	1.00
Satd. Flow (perm)	1681	1693	1556	1770	1719		1770	3518			3340	2764
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)	783	37	613	11	14	11	187	350	11	11	500	622
RTOR Reduction (vph)	0	0	194	0	11	0	0	2	0	0	0	0
Lane Group Flow (vph)	407	413	419	11	14	0	187	359	0	0	511	622
Confl. Peds. (#/hr)			6	6			5		6	6		
Confl. Bikes (#/hr)						3			9			9
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Perm	NA	pm+ov
Protected Phases	8	8	1	4	4		1	6			2	8
Permitted Phases			8							2		2
Actuated Green, G (s)	43.7	43.7	58.2	4.3	4.3		14.5	40.0			21.5	65.2
Effective Green, g (s)	43.7	43.7	58.2	4.3	4.3		14.5	40.0			21.5	65.2
Actuated g/C Ratio	0.44	0.44	0.58	0.04	0.04		0.14	0.40			0.22	0.65
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)	734	739	967	76	73		256	1407			718	1802
v/s Ratio Prot	0.24	c0.24	0.06	0.01	c0.01		c0.11	0.10				0.15
v/s Ratio Perm			0.21								c0.15	0.07
v/c Ratio	0.55	0.56	0.43	0.14	0.20		0.73	0.25			0.71	0.35
Uniform Delay, d1	20.9	21.0	11.7	46.1	46.2		40.9	20.0			36.4	7.8
Progression Factor	0.65	0.65	0.51	1.00	1.00		1.00	1.00			0.65	0.45
Incremental Delay, d2	2.6	2.7	0.3	0.9	1.3		10.2	0.4			5.5	0.5
Delay (s)	16.2	16.2	6.3	47.0	47.5		51.1	20.5			29.2	4.0
Level of Service	B	B	A	D	D		D	C			C	A
Approach Delay (s)		11.9			47.4			30.9			15.4	
Approach LOS		B			D			C			B	

Intersection Summary					
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.61				
Actuated Cycle Length (s)	100.0	Sum of lost time (s)		16.0	
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												
Traffic Volume (veh/h)	705	33	552	10	13	10	168	315	10	10	450	560
Future Volume (veh/h)	705	33	552	10	13	10	168	315	10	10	450	560
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.96	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	809	0	613	11	14	11	187	350	11	11	500	622
Adj No. of Lanes	2	0	1	1	1	0	1	2	0	0	2	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1135	0	701	284	153	120	221	1399	44	44	805	1518
Arrive On Green	0.32	0.00	0.32	0.16	0.16	0.16	0.12	0.40	0.40	0.08	0.08	0.08
Sat Flow, veh/h	3548	0	1574	1774	955	751	1774	3499	110	29	3420	2657
Grp Volume(v), veh/h	809	0	613	11	0	25	187	177	184	273	238	622
Grp Sat Flow(s),veh/h/ln	1774	0	1574	1774	0	1706	1774	1770	1839	1838	1610	1329
Q Serve(g_s), s	20.1	0.0	32.0	0.5	0.0	1.2	10.3	6.7	6.7	0.0	14.3	13.6
Cycle Q Clear(g_c), s	20.1	0.0	32.0	0.5	0.0	1.2	10.3	6.7	6.7	14.2	14.3	13.6
Prop In Lane	1.00		1.00	1.00		0.44	1.00		0.06	0.04		1.00
Lane Grp Cap(c), veh/h	1135	0	701	284	0	273	221	708	735	470	379	1518
V/C Ratio(X)	0.71	0.00	0.87	0.04	0.00	0.09	0.85	0.25	0.25	0.58	0.63	0.41
Avail Cap(c_a), veh/h	1135	0	701	284	0	273	284	708	735	470	379	1518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.86	0.00	0.86	1.00	0.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	29.9	0.0	25.3	35.5	0.0	35.8	42.8	20.0	20.0	41.8	41.9	15.6
Incr Delay (d2), s/veh	3.3	0.0	12.5	0.1	0.0	0.1	16.8	0.8	0.8	4.6	6.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.2	0.0	24.1	0.5	0.0	1.1	10.1	6.1	6.4	12.3	11.3	13.4
LnGrp Delay(d),s/veh	33.2	0.0	37.8	35.6	0.0	35.9	59.7	20.8	20.8	46.4	48.8	16.3
LnGrp LOS	C		D	D		D	E	C	C	D	D	B
Approach Vol, veh/h		1422			36			548			1133	
Approach Delay, s/veh		35.2			35.8			34.1			30.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	16.4	27.6		20.0		44.0		36.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	16.0	20.0		16.0		40.0		32.0
Max Q Clear Time (g_c+I1), s	12.3	16.3		3.2		8.7		34.0
Green Ext Time (p_c), s	0.2	2.2		0.1		2.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.3
HCM 2010 LOS	C

Notes

HCM 2010 Signalized Intersection Summary
7: Higuera & Madonna

Near Term Plus Project AM 2025
02/26/2018

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Central Coast Transportation Consulting

Synchro 10 Report

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	17	947	77	28	1000
Future Vol, veh/h	26	17	947	77	28	1000
Conflicting Peds, #/hr	0	0	0	8	8	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	175	-	50	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	18	1029	84	30	1087

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1641	523	0	0	1121	0
Stage 1	1037	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	91	499	-	-	619	-
Stage 1	303	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Platoon blocked, %				-		-
Mov Cap-1 Maneuver	86	495	-	-	614	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	286	-	-	-	-	-
Stage 2	508	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.8	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	199	495	614	-
HCM Lane V/C Ratio	-	-	0.142	0.037	0.05	-
HCM Control Delay (s)	-	-	26.1	12.6	11.2	-
HCM Lane LOS	-	-	D	B	B	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	2	51	56	3	22	47	941	71	37	998	20
Future Volume (vph)	12	2	51	56	3	22	47	941	71	37	998	20
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		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1754	1863	1583	1770	1585		1769	3539	1544	1769	3539	1553
Flt Permitted	0.74	1.00	1.00	0.76	1.00		0.23	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1366	1863	1583	1409	1585		420	3539	1544	459	3539	1553
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)	13	2	57	62	3	24	52	1046	79	41	1109	22
RTOR Reduction (vph)	0	0	51	0	22	0	0	0	25	0	0	7
Lane Group Flow (vph)	13	2	6	62	5	0	52	1046	54	41	1109	15
Confl. Peds. (#/hr)	6					6	4		2	2		4
Confl. Bikes (#/hr)												4
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6		6	2		2
Actuated Green, G (s)	7.8	7.8	7.8	7.8	7.8		57.8	54.2	54.2	56.6	53.6	53.6
Effective Green, g (s)	7.8	7.8	7.8	7.8	7.8		57.8	54.2	54.2	56.6	53.6	53.6
Actuated g/C Ratio	0.10	0.10	0.10	0.10	0.10		0.72	0.68	0.68	0.71	0.67	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	133	181	154	137	154		364	2397	1046	373	2371	1040
v/s Ratio Prot		0.00			0.00		c0.01	0.30		0.00	c0.31	
v/s Ratio Perm	0.01		0.00	c0.04			0.10		0.03	0.07		0.01
v/c Ratio	0.10	0.01	0.04	0.45	0.03		0.14	0.44	0.05	0.11	0.47	0.01
Uniform Delay, d1	32.9	32.6	32.7	34.1	32.7		5.8	5.9	4.3	5.6	6.3	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.1	2.4	0.1		0.2	0.6	0.1	0.1	0.7	0.0
Delay (s)	33.2	32.6	32.8	36.5	32.8		6.0	6.5	4.4	5.8	7.0	4.4
Level of Service	C	C	C	D	C		A	A	A	A	A	A
Approach Delay (s)		32.9			35.3			6.3			6.9	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	53.8%	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												
Traffic Volume (veh/h)	12	2	51	56	3	22	47	941	71	37	998	20
Future Volume (veh/h)	12	2	51	56	3	22	47	941	71	37	998	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		1.00	0.98		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	13	2	0	62	3	24	52	1046	79	41	1109	22
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	153	130	202	14	115	620	1858	828	610	1814	798
Arrive On Green	0.08	0.08	0.00	0.08	0.08	0.08	0.22	0.52	0.52	0.21	0.51	0.51
Sat Flow, veh/h	1352	1863	1583	1379	175	1403	1774	3539	1577	1774	3539	1558
Grp Volume(v), veh/h	13	2	0	62	0	27	52	1046	79	41	1109	22
Grp Sat Flow(s),veh/h/ln	1352	1863	1583	1379	0	1578	1774	1770	1577	1774	1770	1558
Q Serve(g_s), s	0.7	0.1	0.0	3.5	0.0	1.3	0.0	15.9	2.0	0.0	17.8	0.6
Cycle Q Clear(g_c), s	2.0	0.1	0.0	3.5	0.0	1.3	0.0	15.9	2.0	0.0	17.8	0.6
Prop In Lane	1.00		1.00	1.00		0.89	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	153	130	202	0	130	620	1858	828	610	1814	798
V/C Ratio(X)	0.07	0.01	0.00	0.31	0.00	0.21	0.08	0.56	0.10	0.07	0.61	0.03
Avail Cap(c_a), veh/h	372	419	356	399	0	355	620	1858	828	610	1814	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	33.7	0.0	35.4	0.0	34.3	10.8	12.8	9.5	10.1	13.8	9.6
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.9	0.0	0.8	0.0	1.0	0.2	0.0	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.1	0.0	2.5	0.0	1.1	1.1	12.2	1.6	0.9	13.9	0.5
LnGrp Delay(d),s/veh	35.4	33.8	0.0	36.2	0.0	35.1	10.9	13.8	9.7	10.1	15.4	9.7
LnGrp LOS	D	C		D		D	B	B	A	B	B	A
Approach Vol, veh/h		15			89			1177			1172	
Approach Delay, s/veh		35.2			35.9			13.4			15.1	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.4	47.0		10.6	21.4	48.0		10.6
Change Period (Y+Rc), s	5.0	6.0		4.0	5.0	6.0		4.0
Max Green Setting (Gmax), s	6.0	41.0		18.0	5.0	42.0		18.0
Max Q Clear Time (g_c+I1), s	2.0	19.8		5.5	2.0	17.9		4.0
Green Ext Time (p_c), s	0.0	7.9		0.2	0.0	8.7		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	15.2	
HCM 2010 LOS	B	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	433	210	122	536	1122	105
Future Volume (vph)	433	210	122	536	1122	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3083		1641	3539	3539	1445
Flt Permitted	0.97		0.95	1.00	1.00	1.00
Satd. Flow (perm)	3083		1641	3539	3539	1445
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	461	223	130	570	1194	112
RTOR Reduction (vph)	62	0	0	0	0	31
Lane Group Flow (vph)	622	0	130	570	1194	81
Confl. Bikes (#/hr)						5
Heavy Vehicles (%)	10%	10%	10%	2%	2%	10%
Turn Type	Prot		Prot	NA	NA	pm+ov
Protected Phases	3		1	6	2	3
Permitted Phases						2
Actuated Green, G (s)	21.6		10.9	61.7	47.3	68.9
Effective Green, g (s)	21.1		10.4	63.7	49.3	67.9
Actuated g/C Ratio	0.21		0.10	0.64	0.49	0.68
Clearance Time (s)	3.5		3.5	6.0	6.0	3.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	650		170	2254	1744	981
v/s Ratio Prot	c0.20		c0.08	0.16	c0.34	0.02
v/s Ratio Perm						0.04
v/c Ratio	0.96		0.76	0.25	0.68	0.08
Uniform Delay, d1	39.0		43.6	7.9	19.4	5.5
Progression Factor	1.00		1.00	1.00	0.39	0.38
Incremental Delay, d2	24.9		18.3	0.3	1.5	0.0
Delay (s)	64.0		61.9	8.1	9.1	2.1
Level of Service	E		E	A	A	A
Approach Delay (s)	64.0			18.1	8.5	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 methodology does not support exclusive ped or hold phases.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	158	84	1100	283	75	571
Future Volume (vph)	158	84	1100	283	75	571
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1545	3413		1769	3539
Flt Permitted	0.95	1.00	1.00		0.13	1.00
Satd. Flow (perm)	1770	1545	3413		243	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	91	1196	308	82	621
RTOR Reduction (vph)	0	66	20	0	0	0
Lane Group Flow (vph)	172	25	1484	0	82	621
Confl. Peds. (#/hr)		6		1	1	
Confl. Bikes (#/hr)		5		6		
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	12.9	12.9	51.9		51.9	51.9
Effective Green, g (s)	12.9	12.9	51.9		51.9	51.9
Actuated g/C Ratio	0.17	0.17	0.68		0.68	0.68
Clearance Time (s)	5.0	5.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	2.0	5.5		5.5	5.5
Lane Grp Cap (vph)	301	262	2336		166	2423
v/s Ratio Prot	c0.10		c0.43			0.18
v/s Ratio Perm		0.02			0.34	
v/c Ratio	0.57	0.09	0.64		0.49	0.26
Uniform Delay, d1	28.9	26.5	6.7		5.7	4.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.6	0.1	0.9		5.6	0.1
Delay (s)	30.5	26.6	7.5		11.3	4.7
Level of Service	C	C	A		B	A
Approach Delay (s)	29.2		7.5			5.5
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	158	84	1100	283	75	571
Future Volume (veh/h)	158	84	1100	283	75	571
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	172	91	1196	308	82	621
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	234	209	1940	492	273	2468
Arrive On Green	0.13	0.13	0.70	0.70	0.70	0.70
Sat Flow, veh/h	1774	1583	2875	706	347	3632
Grp Volume(v), veh/h	172	91	754	750	82	621
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1718	347	1770
Q Serve(g_s), s	6.0	3.4	14.5	15.1	10.7	4.1
Cycle Q Clear(g_c), s	6.0	3.4	14.5	15.1	25.8	4.1
Prop In Lane	1.00	1.00		0.41	1.00	
Lane Grp Cap(c), veh/h	234	209	1234	1198	273	2468
V/C Ratio(X)	0.74	0.44	0.61	0.63	0.30	0.25
Avail Cap(c_a), veh/h	661	590	1512	1468	327	3024
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	25.7	5.1	5.2	12.2	3.6
Incr Delay (d2), s/veh	1.7	0.5	1.4	1.5	1.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.4	2.7	11.8	11.8	2.0	3.7
LnGrp Delay(d),s/veh	28.6	26.3	6.5	6.7	13.8	3.7
LnGrp LOS	C	C	A	A	B	A
Approach Vol, veh/h	263		1504			703
Approach Delay, s/veh	27.8		6.6			4.9
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		50.9				50.9		13.5
Change Period (Y+Rc), s		6.0				6.0		5.0
Max Green Setting (Gmax), s		55.0				55.0		24.0
Max Q Clear Time (g_c+I1), s		17.1				27.8		8.0
Green Ext Time (p_c), s		27.8				11.4		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	10	30	377	10	262	20	530	733	250	355	10
Future Volume (vph)	30	10	30	377	10	262	20	530	733	250	355	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1796	1556	1681	1690	1556	1770	3539	1569	1770	3521	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1796	1556	1681	1690	1556	1770	3539	1569	1770	3521	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	11	32	405	11	282	22	570	788	269	382	11
RTOR Reduction (vph)	0	0	30	0	0	224	0	0	323	0	2	0
Lane Group Flow (vph)	0	43	2	207	209	58	22	570	465	269	391	0
Confl. Peds. (#/hr)			1	1			3		3	3		3
Confl. Bikes (#/hr)			1			5						10
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		4	4		5	2	4	1	6	
Permitted Phases			8			4			2			
Actuated Green, G (s)		5.5	5.5	19.0	19.0	19.0	1.7	26.1	45.1	19.3	43.7	
Effective Green, g (s)		5.5	5.5	19.0	19.0	19.0	1.7	26.1	45.1	19.3	43.7	
Actuated g/C Ratio		0.06	0.06	0.20	0.20	0.20	0.02	0.28	0.49	0.21	0.47	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		2.0	2.0	2.0	2.0	2.0	2.0	5.0	2.0	3.5	5.0	
Lane Grp Cap (vph)		106	92	343	345	318	32	994	863	367	1656	
v/s Ratio Prot		c0.02		0.12	0.12		0.01	0.16	c0.11	c0.15	0.11	
v/s Ratio Perm			0.00			0.04			0.19			
v/c Ratio		0.41	0.02	0.60	0.61	0.18	0.69	0.57	0.54	0.73	0.24	
Uniform Delay, d1		42.1	41.2	33.5	33.5	30.5	45.3	28.6	16.7	34.4	14.7	
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		0.9	0.0	2.1	2.1	0.1	39.1	1.3	0.3	7.6	0.2	
Delay (s)		43.0	41.2	35.6	35.6	30.6	84.5	29.9	17.0	42.0	14.8	
Level of Service		D	D	D	D	C	F	C	B	D	B	
Approach Delay (s)		42.3			33.6			23.4			25.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	10	30	377	10	262	20	530	733	250	355	10
Future Volume (veh/h)	30	10	30	377	10	262	20	530	733	250	355	10
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	32	11	32	413	0	0	22	570	788	269	382	11
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	25	83	533	0	238	43	1155	752	322	1698	49
Arrive On Green	0.08	0.05	0.05	0.15	0.00	0.00	0.02	0.33	0.33	0.18	0.48	0.48
Sat Flow, veh/h	1336	459	1551	3548	0	1583	1774	3539	1576	1774	3511	101
Grp Volume(v), veh/h	43	0	32	413	0	0	22	570	788	269	192	201
Grp Sat Flow(s),veh/h/ln	1796	0	1551	1774	0	1583	1774	1770	1576	1774	1770	1843
Q Serve(g_s), s	1.8	0.0	1.6	8.9	0.0	0.0	1.0	10.3	26.0	11.7	5.0	5.0
Cycle Q Clear(g_c), s	1.8	0.0	1.6	8.9	0.0	0.0	1.0	10.3	26.0	11.7	5.0	5.0
Prop In Lane	0.74		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	96	0	83	533	0	238	43	1155	752	322	856	891
V/C Ratio(X)	0.45	0.00	0.39	0.77	0.00	0.00	0.51	0.49	1.05	0.84	0.22	0.23
Avail Cap(c_a), veh/h	496	0	428	1158	0	517	111	1155	752	512	977	1018
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	0.0	36.4	32.5	0.0	0.0	38.4	21.5	17.7	31.5	11.9	11.9
Incr Delay (d2), s/veh	1.2	0.0	1.1	0.9	0.0	0.0	3.5	0.7	45.9	7.7	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	1.3	7.9	0.0	0.0	0.9	8.8	46.6	10.5	4.5	4.7
LnGrp Delay(d),s/veh	37.1	0.0	37.5	33.5	0.0	0.0	41.9	22.2	63.6	39.2	12.2	12.2
LnGrp LOS	D		D	C			D	C	F	D	B	B
Approach Vol, veh/h		75			413			1380			662	
Approach Delay, s/veh		37.3			33.5			46.2			23.2	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.4	32.0		18.0	6.9	44.5		10.3
Change Period (Y+Rc), s	5.0	6.0		6.0	5.0	6.0		6.0
Max Green Setting (Gmax), s	23.0	26.0		26.0	5.0	44.0		22.0
Max Q Clear Time (g_c+I1), s	13.7	28.0		10.9	3.0	7.0		3.8
Green Ext Time (p_c), s	0.8	0.0		0.9	0.0	4.6		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
16: Higuera & Tank Farm

Near Term Plus Project AM 2025
02/26/2018

User approved volume balancing among the lanes for turning movement.

Central Coast Transportation Consulting

Synchro 10 Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	102	60	326	120	464	90	1109	402	411	847	37
Future Volume (vph)	45	102	60	326	120	464	90	1109	402	411	847	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.91	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1740		3433	1590	1472	1770	5085	1552	3433	3509	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1740		3433	1590	1472	1770	5085	1552	3433	3509	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	105	62	336	124	478	93	1143	414	424	873	38
RTOR Reduction (vph)	0	17	0	0	45	236	0	0	196	0	3	0
Lane Group Flow (vph)	46	150	0	336	265	56	93	1143	218	424	908	0
Confl. Peds. (#/hr)	12		10	10			7		12	12		7
Confl. Bikes (#/hr)			3			8						7
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	2	2		6	6		3	8	6	7	4	
Permitted Phases						6			8			
Actuated Green, G (s)	25.1	25.1		22.5	22.5	22.5	12.1	31.3	53.8	16.6	35.8	
Effective Green, g (s)	25.1	25.1		22.5	22.5	22.5	12.1	31.3	53.8	16.6	35.8	
Actuated g/C Ratio	0.21	0.21		0.19	0.19	0.19	0.10	0.27	0.46	0.14	0.30	
Clearance Time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
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)	378	371		657	304	281	182	1354	710	485	1069	
v/s Ratio Prot	0.03	c0.09		0.10	c0.17		0.05	0.22	0.06	c0.12	c0.26	
v/s Ratio Perm						0.04			0.08			
v/c Ratio	0.12	0.40		0.51	0.87	0.20	0.51	0.84	0.31	0.87	0.85	
Uniform Delay, d1	37.3	39.8		42.6	46.1	39.9	49.9	40.8	20.1	49.4	38.3	
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	0.7	3.2		0.7	22.7	0.3	2.4	5.0	0.2	15.9	6.5	
Delay (s)	38.0	43.0		43.2	68.8	40.3	52.3	45.8	20.3	65.4	44.8	
Level of Service	D	D		D	E	D	D	D	C	E	D	
Approach Delay (s)		41.9			50.8			39.8			51.3	
Approach LOS		D			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	46.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	22.0	
Intersection Capacity Utilization	80.8%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	102	60	326	120	464	90	1109	402	411	847	37
Future Volume (veh/h)	45	102	60	326	120	464	90	1109	402	411	847	37
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	46	105	62	336	390	301	93	1143	414	424	873	38
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	230	136	707	371	304	200	1336	726	479	996	43
Arrive On Green	0.21	0.21	0.21	0.20	0.20	0.20	0.11	0.26	0.26	0.14	0.29	0.29
Sat Flow, veh/h	1774	1085	640	3548	1863	1527	1774	5085	1562	3442	3447	150
Grp Volume(v), veh/h	46	0	167	336	390	301	93	1143	414	424	448	463
Grp Sat Flow(s),veh/h/ln	1774	0	1725	1774	1863	1527	1774	1695	1562	1721	1770	1827
Q Serve(g_s), s	2.5	0.0	10.0	9.9	23.5	23.2	5.8	25.2	22.9	14.3	28.4	28.4
Cycle Q Clear(g_c), s	2.5	0.0	10.0	9.9	23.5	23.2	5.8	25.2	22.9	14.3	28.4	28.4
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	376	0	366	707	371	304	200	1336	726	479	511	528
V/C Ratio(X)	0.12	0.00	0.46	0.48	1.05	0.99	0.46	0.86	0.57	0.88	0.88	0.88
Avail Cap(c_a), veh/h	376	0	366	707	371	304	200	1402	746	496	593	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	0.0	40.5	41.7	47.2	47.1	48.9	41.3	23.2	49.8	39.9	39.9
Incr Delay (d2), s/veh	0.7	0.0	4.1	0.5	60.5	48.3	1.7	5.3	1.0	16.8	12.6	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	5.1	4.9	18.2	13.8	2.9	12.4	13.5	7.9	15.7	16.2
LnGrp Delay(d),s/veh	38.2	0.0	44.6	42.2	107.7	95.4	50.6	46.6	24.2	66.6	52.5	52.2
LnGrp LOS	D		D	D	F	F	D	D	C	E	D	D
Approach Vol, veh/h		213			1027			1650			1335	
Approach Delay, s/veh		43.2			82.7			41.2			56.9	
Approach LOS		D			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		30.0	18.3	40.6		29.0	21.4	37.5
Change Period (Y+Rc), s		5.0	5.0	6.5		5.5	5.0	6.5
Max Green Setting (Gmax), s		25.0	10.0	39.5		23.5	17.0	32.5
Max Q Clear Time (g_c+I1), s		12.0	7.8	30.4		25.5	16.3	27.2
Green Ext Time (p_c), s		0.9	0.0	3.6		0.0	0.2	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	56.3
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
1: LOVR & Madonna

Near Term Plus Project PM 2025
02/26/2018

Central Coast Transportation Consulting

Synchro 10 Report

Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	913	1	30	18	1047	8	164	4	0	38	113
Future Volume (vph)	15	913	1	30	18	1047	8	164	4	0	38	113
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	1.00	0.95			1.00	0.95	1.00			1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00	1.00	0.97			1.00	0.98	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00			1.00	1.00	
Frt	1.00	1.00			1.00	1.00	0.85			1.00	0.85	
Flt Protected	0.95	1.00			0.95	1.00	1.00			0.95	1.00	
Satd. Flow (prot)	1766	3539			1770	3539	1534			1761	1556	
Flt Permitted	0.95	1.00			0.95	1.00	1.00			0.76	1.00	
Satd. Flow (perm)	1766	3539			1770	3539	1534			1418	1556	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	992	1	33	20	1138	9	178	4	0	41	123
RTOR Reduction (vph)	0	0	0	0	0	0	97	0	0	0	35	0
Lane Group Flow (vph)	16	993	0	0	53	1138	90	0	0	4	6	0
Confl. Peds. (#/hr)	6		9				6		6		5	5
Turn Type	Prot	NA		Prot	Prot	NA	Perm		Perm	NA	Perm	Perm
Protected Phases	5	2		1	1	6				8		
Permitted Phases							6		8		8	4
Actuated Green, G (s)	0.5	25.4			2.2	27.1	27.1			8.8	8.8	
Effective Green, g (s)	0.5	25.4			2.2	27.1	27.1			8.8	8.8	
Actuated g/C Ratio	0.01	0.43			0.04	0.45	0.45			0.15	0.15	
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)	14	1505			65	1606	696			209	229	
v/s Ratio Prot	0.01	0.28			c0.03	c0.32						
v/s Ratio Perm							0.06			0.00	0.00	
v/c Ratio	1.14	0.66			0.82	0.71	0.13			0.02	0.03	
Uniform Delay, d1	29.6	13.7			28.5	13.1	9.5			21.8	21.8	
Progression Factor	1.00	1.00			1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2	291.3	1.1			52.3	1.5	0.1			0.0	0.0	
Delay (s)	320.9	14.8			80.8	14.6	9.5			21.8	21.8	
Level of Service	F	B			F	B	A			C	C	
Approach Delay (s)		19.6				16.4				21.8		
Approach LOS		B				B				C		

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Oceanaire & Madonna
Near Term Plus Project PM 2025
02/26/2018

Movement	SBT	SBR	SBR2	SEL	SER2	NEL2	NEL	NER
Lane Configurations								
Traffic Volume (vph)	0	2	16	1	4	1	2	23
Future Volume (vph)	0	2	16	1	4	1	2	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0			4.0	
Lane Util. Factor	1.00			1.00			1.00	
Frpb, ped/bikes	1.00			0.98			0.99	
Flpb, ped/bikes	1.00			1.00			1.00	
Frt	0.98			0.89			0.88	
Flt Protected	0.96			0.99			0.99	
Satd. Flow (prot)	1740			1603			1609	
Flt Permitted	0.75			0.99			0.99	
Satd. Flow (perm)	1365			1603			1609	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2	17	1	4	1	2	25
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	142	0	0	5	0	0	28	0
Confl. Peds. (#/hr)		1		5	6	6		1
Turn Type	NA			Prot		Perm	Prot	
Protected Phases	4			7			3	
Permitted Phases						3		
Actuated Green, G (s)	8.8			0.9			2.4	
Effective Green, g (s)	8.8			0.9			2.4	
Actuated g/C Ratio	0.15			0.02			0.04	
Clearance Time (s)	4.0			4.0			4.0	
Vehicle Extension (s)	3.0			3.0			3.0	
Lane Grp Cap (vph)	201			24			64	
v/s Ratio Prot				c0.00				
v/s Ratio Perm	c0.10						0.02	
v/c Ratio	0.71			0.21			0.44	
Uniform Delay, d1	24.2			29.0			28.0	
Progression Factor	1.00			1.00			1.00	
Incremental Delay, d2	10.8			4.3			4.7	
Delay (s)	35.0			33.3			32.7	
Level of Service	C			C			C	
Approach Delay (s)	35.0			33.3			32.7	
Approach LOS	C			C			C	

Intersection Summary

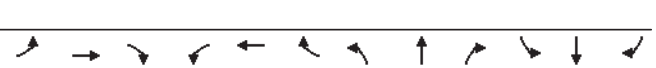
Central Coast Transportation Consulting
Synchro 10 Report

HCM 2010 methodology does not support more than 4 approaches.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	897	244	395	1040	25	223	1	376	29	9	22
Future Volume (vph)	35	897	244	395	1040	25	223	1	376	29	9	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99	1.00		1.00	1.00
Frt	1.00	0.97		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (prot)	1770	3404		1770	5063			1765	1549		1793	1548
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.75	1.00
Satd. Flow (perm)	1770	3404		1770	5063			1294	1549		1393	1548
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	36	925	252	407	1072	26	230	1	388	30	9	23
RTOR Reduction (vph)	0	27	0	0	2	0	0	0	148	0	0	17
Lane Group Flow (vph)	36	1150	0	407	1096	0	0	231	240	0	39	6
Confl. Peds. (#/hr)	1		5	5		1	5		1	1		5
Confl. Bikes (#/hr)			22			22			10			6
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	3.2	34.6		9.3	40.7			20.0	20.0		20.0	20.0
Effective Green, g (s)	3.2	34.6		9.3	40.7			20.0	20.0		20.0	20.0
Actuated g/C Ratio	0.04	0.43		0.12	0.51			0.25	0.25		0.25	0.25
Clearance Time (s)	6.0	6.0		6.0	6.0			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
Lane Grp Cap (vph)	70	1474		206	2579			323	387		348	387
v/s Ratio Prot	0.02	c0.34		c0.23	0.22							
v/s Ratio Perm								c0.18	0.16		0.03	0.00
v/c Ratio	0.51	0.78		1.98	0.42			0.72	0.62		0.11	0.01
Uniform Delay, d1	37.6	19.4		35.3	12.3			27.3	26.6		23.1	22.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	6.2	2.8		456.1	0.1			7.3	3.1		0.1	0.0
Delay (s)	43.8	22.2		491.4	12.4			34.7	29.7		23.2	22.6
Level of Service	D	C		F	B			C	C		C	C
Approach Delay (s)		22.8			141.9			31.5			23.0	
Approach LOS		C			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	77.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.1%	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												
Traffic Volume (veh/h)	35	897	244	395	1040	25	223	1	376	29	9	22
Future Volume (veh/h)	35	897	244	395	1040	25	223	1	376	29	9	22
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	36	925	252	407	1072	26	230	1	388	30	9	23
Adj No. of Lanes	1	2	0	1	3	0	0	1	1	0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	1059	288	185	2371	57	83	0	500	74	13	502
Arrive On Green	0.03	0.39	0.39	0.10	0.46	0.46	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1774	2733	743	1774	5101	124	0	0	1546	0	40	1551
Grp Volume(v), veh/h	36	598	579	407	712	386	231	0	388	39	0	23
Grp Sat Flow(s),veh/h/ln	1774	1770	1706	1774	1695	1834	0	0	1546	40	0	1551
Q Serve(g_s), s	1.7	27.1	27.2	9.0	12.3	12.3	0.0	0.0	19.6	0.0	0.0	0.9
Cycle Q Clear(g_c), s	1.7	27.1	27.2	9.0	12.3	12.3	28.0	0.0	19.6	28.0	0.0	0.9
Prop In Lane	1.00		0.44	1.00		0.07	1.00		1.00	0.77		1.00
Lane Grp Cap(c), veh/h	47	686	661	185	1575	852	83	0	500	87	0	502
V/C Ratio(X)	0.76	0.87	0.88	2.21	0.45	0.45	2.78	0.00	0.78	0.45	0.00	0.05
Avail Cap(c_a), veh/h	123	757	730	185	1575	852	83	0	500	87	0	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.8	24.5	24.6	38.8	15.7	15.7	43.3	0.0	26.4	34.1	0.0	20.1
Incr Delay (d2), s/veh	21.4	10.2	10.9	559.8	0.2	0.4	834.5	0.0	7.5	3.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	15.1	14.7	33.1	5.8	6.3	21.2	0.0	9.4	1.0	0.0	0.4
LnGrp Delay(d),s/veh	63.3	34.7	35.4	598.6	15.9	16.1	877.7	0.0	33.9	37.7	0.0	20.1
LnGrp LOS	E	C	D	F	B	B	F		C	D		C
Approach Vol, veh/h		1213			1505			619			62	
Approach Delay, s/veh		35.9			173.5			348.8			31.2	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	39.5		32.0	8.3	46.2		32.0
Change Period (Y+Rc), s	6.0	6.0		4.0	6.0	6.0		4.0
Max Green Setting (Gmax), s	9.0	37.0		28.0	6.0	40.0		28.0
Max Q Clear Time (g_c+I1), s	11.0	29.2		30.0	3.7	14.3		30.0
Green Ext Time (p_c), s	0.0	4.3		0.0	0.0	7.9		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	153.7	
HCM 2010 LOS	F	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	1255	212	185	999	17	584	10	300	20	12	19
Future Volume (vph)	24	1255	212	185	999	17	584	10	300	20	12	19
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	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	0.99	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	4910		1770	5068		1545	1551	1456	1681	1749	1548
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.72	1.00	0.22	0.58	1.00
Satd. Flow (perm)	1770	4910		1770	5068		1212	1171	1456	393	1033	1548
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	25	1307	221	193	1041	18	608	10	312	21	12	20
RTOR Reduction (vph)	0	23	0	0	2	0	0	0	197	0	0	16
Lane Group Flow (vph)	25	1505	0	193	1057	0	310	308	116	17	17	4
Confl. Peds. (#/hr)	2		12	12		2	5					5
Confl. Bikes (#/hr)			27			23			1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	10%	10%	10%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	2.0	29.0		12.0	39.0		25.0	25.0	37.0	18.0	18.0	18.0
Effective Green, g (s)	2.0	29.0		12.0	39.0		25.0	25.0	37.0	18.0	18.0	18.0
Actuated g/C Ratio	0.02	0.29		0.12	0.39		0.25	0.25	0.37	0.18	0.18	0.18
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)	35	1423		212	1976		303	292	596	70	185	278
v/s Ratio Prot	0.01	c0.31		c0.11	0.21				0.02			
v/s Ratio Perm							0.26	c0.26	0.06	c0.04	0.02	0.00
v/c Ratio	0.71	1.06		0.91	0.54		1.02	1.05	0.19	0.24	0.09	0.01
Uniform Delay, d1	48.7	35.5		43.5	23.5		37.5	37.5	21.4	35.2	34.2	33.7
Progression Factor	1.00	1.00		1.06	0.37		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	51.0	40.6		28.6	0.7		57.8	67.8	0.2	8.1	1.0	0.1
Delay (s)	99.7	76.1		74.7	9.5		95.3	105.3	21.5	43.2	35.2	33.8
Level of Service	F	E		E	A		F	F	C	D	D	C
Approach Delay (s)		76.5			19.5			73.8			37.2	
Approach LOS		E			B			E			D	

Intersection Summary				
HCM 2000 Control Delay	56.5	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	72.5%	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												
Traffic Volume (veh/h)	24	1255	212	185	999	17	584	10	300	20	12	19
Future Volume (veh/h)	24	1255	212	185	999	17	584	10	300	20	12	19
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.94	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1727	1727	1727	1863	1863	1863
Adj Flow Rate, veh/h	25	1307	221	193	1041	18	615	0	312	16	18	20
Adj No. of Lanes	1	3	0	1	3	0	2	0	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	10	10	10	2	2	2
Cap, veh/h	479	2215	374	213	1851	32	755	0	536	337	466	388
Arrive On Green	0.27	0.51	0.51	0.24	0.72	0.72	0.25	0.00	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1774	4343	734	1774	5142	89	2516	0	1441	1059	1863	1554
Grp Volume(v), veh/h	25	1020	508	193	686	373	615	0	312	16	18	20
Grp Sat Flow(s),veh/h/ln	1774	1695	1687	1774	1695	1840	1258	0	1441	1059	1863	1554
Q Serve(g_s), s	1.0	21.1	21.1	10.6	9.5	9.5	24.3	0.0	17.4	1.2	0.7	1.0
Cycle Q Clear(g_c), s	1.0	21.1	21.1	10.6	9.5	9.5	25.0	0.0	17.4	1.2	0.7	1.0
Prop In Lane	1.00		0.44	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	479	1729	860	213	1220	663	755	0	536	337	466	388
V/C Ratio(X)	0.05	0.59	0.59	0.91	0.56	0.56	0.82	0.00	0.58	0.05	0.04	0.05
Avail Cap(c_a), veh/h	479	1729	860	213	1220	663	755	0	536	337	466	388
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.57	0.57	0.57	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	17.2	17.2	37.5	10.3	10.3	38.0	0.0	25.3	28.6	28.4	28.5
Incr Delay (d2), s/veh	0.0	1.5	3.0	25.0	1.1	2.0	9.4	0.0	4.6	0.3	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	10.1	10.4	6.6	4.4	4.9	9.4	0.0	7.6	0.4	0.4	0.4
LnGrp Delay(d),s/veh	27.1	18.7	20.1	62.4	11.4	12.3	47.4	0.0	29.9	28.8	28.6	28.7
LnGrp LOS	C	B	C	E	B	B	D		C	C	C	C
Approach Vol, veh/h		1553			1252			927			54	
Approach Delay, s/veh		19.3			19.5			41.5			28.7	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	55.0		29.0	31.0	40.0		29.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	29.0		18.0	5.0	36.0		25.0
Max Q Clear Time (g_c+I1), s	12.6	23.1		3.2	3.0	11.5		27.0
Green Ext Time (p_c), s	0.0	4.3		0.1	0.0	7.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.9
HCM 2010 LOS	C

Notes

HCM 2010 Signalized Intersection Summary
5: Hwy 101 SB/Madonna Inn & Madonna

Near Term Plus Project PM 2025
02/26/2018

User approved volume balancing among the lanes for turning movement.

Central Coast Transportation Consulting

Synchro 10 Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	640	935	0	0	1057	175	144	3	126	0	0	0
Future Volume (vph)	640	935	0	0	1057	175	144	3	126	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				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frpb, ped/bikes	1.00	1.00			1.00		1.00	0.98				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.85				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3453		1641	1451				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3453		1641	1451				
Peak-hour factor, PHF	0.97	0.97	0.92	0.92	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92
Adj. Flow (vph)	660	964	0	0	1090	180	148	3	130	0	0	0
RTOR Reduction (vph)	0	0	0	0	13	0	0	113	0	0	0	0
Lane Group Flow (vph)	660	964	0	0	1257	0	148	20	0	0	0	0
Confl. Peds. (#/hr)			11	11					2	2		
Confl. Bikes (#/hr)			25			23						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	10%	10%	10%	10%	10%	10%
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	27.0	78.6			47.6		13.4	13.4				
Effective Green, g (s)	27.0	78.6			47.6		13.4	13.4				
Actuated g/C Ratio	0.27	0.79			0.48		0.13	0.13				
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	926	2781			1643		219	194				
v/s Ratio Prot	c0.19	0.27			c0.36		c0.09	0.01				
v/s Ratio Perm												
v/c Ratio	0.71	0.35			0.77		0.68	0.11				
Uniform Delay, d1	33.0	3.1			21.6		41.2	38.0				
Progression Factor	0.51	1.07			0.66		1.00	1.00				
Incremental Delay, d2	1.0	0.1			2.3		8.0	0.2				
Delay (s)	17.8	3.5			16.6		49.2	38.3				
Level of Service	B	A			B		D	D				
Approach Delay (s)		9.3			16.6			44.0			0.0	
Approach LOS		A			B			D			A	

Intersection Summary				
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	71.6%	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												
Traffic Volume (veh/h)	640	935	0	0	1057	175	144	3	126	0	0	0
Future Volume (veh/h)	640	935	0	0	1057	175	144	3	126	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1727	1727	1900			
Adj Flow Rate, veh/h	660	964	0	0	1090	180	148	3	130			
Adj No. of Lanes	2	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.97	0.97	0.92	0.92	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	10	10	10			
Cap, veh/h	1082	2846	0	0	1364	225	190	4	166			
Arrive On Green	0.63	1.00	0.00	0.00	0.30	0.30	0.12	0.12	0.12			
Sat Flow, veh/h	3442	3632	0	0	3124	499	1645	33	1433			
Grp Volume(v), veh/h	660	964	0	0	635	635	148	0	133			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1761	1645	0	1466			
Q Serve(g_s), s	11.6	0.0	0.0	0.0	33.0	33.2	8.7	0.0	8.8			
Cycle Q Clear(g_c), s	11.6	0.0	0.0	0.0	33.0	33.2	8.7	0.0	8.8			
Prop In Lane	1.00		0.00	0.00		0.28	1.00		0.98			
Lane Grp Cap(c), veh/h	1082	2846	0	0	796	792	190	0	170			
V/C Ratio(X)	0.61	0.34	0.00	0.00	0.80	0.80	0.78	0.00	0.78			
Avail Cap(c_a), veh/h	1082	2846	0	0	796	792	263	0	235			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00			
Upstream Filter(I)	0.22	0.22	0.00	0.00	0.60	0.60	1.00	0.00	1.00			
Uniform Delay (d), s/veh	14.9	0.0	0.0	0.0	30.7	30.8	43.0	0.0	43.0			
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.0	5.0	5.2	9.5	0.0	11.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.0	0.0	17.2	17.2	4.5	0.0	4.1			
LnGrp Delay(d),s/veh	15.1	0.1	0.0	0.0	35.8	36.0	52.4	0.0	54.1			
LnGrp LOS	B	A			D	D	D		D			
Approach Vol, veh/h		1624			1270			281				
Approach Delay, s/veh		6.2			35.9			53.2				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		84.4			35.4	49.0		15.6
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		76.0			27.0	45.0		16.0
Max Q Clear Time (g_c+I1), s		2.0			13.6	35.2		10.8
Green Ext Time (p_c), s		8.5			2.7	5.6		0.6

Intersection Summary			
HCM 2010 Ctrl Delay	22.2		
HCM 2010 LOS	C		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	624	20	382	10	94	10	427	609	13	10	537	749
Future Volume (vph)	624	20	382	10	94	10	427	609	13	10	537	749
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	0.95	0.95	1.00	1.00	1.00		1.00	0.95			0.95	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1690	1573	1770	1830		1770	3523			3535	2749
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.95	1.00			0.94	1.00
Satd. Flow (perm)	1681	1690	1573	1770	1830		1770	3523			3319	2749
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	671	22	411	11	101	11	459	655	14	11	577	805
RTOR Reduction (vph)	0	0	198	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	349	344	213	11	108	0	459	668	0	0	588	805
Confl. Peds. (#/hr)			1	1			4		10	10		
Confl. Bikes (#/hr)						8			21			12
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Perm	NA	pm+ov
Protected Phases	8	8	1	4	4		1	6			2	8
Permitted Phases			8							2		2
Actuated Green, G (s)	24.9	24.9	51.9	11.1	11.1		27.0	52.0			21.0	45.9
Effective Green, g (s)	24.9	24.9	51.9	11.1	11.1		27.0	52.0			21.0	45.9
Actuated g/C Ratio	0.25	0.25	0.52	0.11	0.11		0.27	0.52			0.21	0.46
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)	418	420	879	196	203		477	1831			696	1261
v/s Ratio Prot	c0.21	0.20	0.07	0.01	c0.06		c0.26	0.19				0.16
v/s Ratio Perm			0.07								c0.18	0.13
v/c Ratio	0.83	0.82	0.24	0.06	0.53		0.96	0.36			0.84	0.64
Uniform Delay, d1	35.6	35.4	13.2	39.8	42.0		36.0	14.2			37.9	20.7
Progression Factor	1.25	1.25	1.80	1.00	1.00		1.00	1.00			0.77	0.77
Incremental Delay, d2	16.9	15.5	0.1	0.1	2.5		31.5	0.1			8.1	0.9
Delay (s)	61.6	60.0	23.9	39.9	44.5		67.5	14.3			37.5	16.8
Level of Service	E	E	C	D	D		E	B			D	B
Approach Delay (s)		47.1			44.1			36.0			25.6	
Approach LOS		D			D			D			C	

Intersection Summary				
HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	73.3%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	624	20	382	10	94	10	427	609	13	10	537	749
Future Volume (veh/h)	624	20	382	10	94	10	427	609	13	10	537	749
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.96	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	687	0	0	11	101	11	459	655	14	11	577	805
Adj No. of Lanes	2	0	1	1	1	0	1	2	0	0	2	2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	710	0	744	284	263	29	479	1840	39	43	716	1105
Arrive On Green	0.20	0.00	0.00	0.16	0.16	0.16	0.27	0.52	0.52	0.07	0.07	0.07
Sat Flow, veh/h	3548	0	1583	1774	1646	179	1774	3539	76	25	3411	2608
Grp Volume(v), veh/h	687	0	0	11	0	112	459	327	342	313	275	805
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1826	1774	1770	1845	1826	1610	1304
Q Serve(g_s), s	19.2	0.0	0.0	0.5	0.0	5.5	25.5	10.9	10.9	4.4	16.8	21.0
Cycle Q Clear(g_c), s	19.2	0.0	0.0	0.5	0.0	5.5	25.5	10.9	10.9	16.8	16.8	21.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.04	0.04		1.00
Lane Grp Cap(c), veh/h	710	0	744	284	0	292	479	920	960	421	338	1105
V/C Ratio(X)	0.97	0.00	0.00	0.04	0.00	0.38	0.96	0.36	0.36	0.75	0.81	0.73
Avail Cap(c_a), veh/h	710	0	744	284	0	292	479	920	960	421	338	1105
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.95	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	39.7	0.0	0.0	35.5	0.0	37.6	35.9	14.1	14.1	44.5	44.6	27.8
Incr Delay (d2), s/veh	26.0	0.0	0.0	0.1	0.0	0.8	30.6	0.2	0.2	6.0	12.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	0.0	0.3	0.0	2.8	16.6	5.3	5.6	9.3	8.6	11.5
LnGrp Delay(d),s/veh	65.6	0.0	0.0	35.6	0.0	38.4	66.6	14.4	14.4	50.5	56.5	29.9
LnGrp LOS	E			D		D	E	B	B	D	E	C
Approach Vol, veh/h		687			123			1128			1393	
Approach Delay, s/veh		65.6			38.2			35.6			39.8	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	31.0	25.0		20.0		56.0		24.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	27.0	21.0		16.0		52.0		20.0
Max Q Clear Time (g_c+I1), s	27.5	23.0		7.5		12.9		21.2
Green Ext Time (p_c), s	0.0	0.0		0.3		4.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.6
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	43	1721	38	27	1502
Future Vol, veh/h	40	43	1721	38	27	1502
Conflicting Peds, #/hr	0	0	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	175	-	50	60	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	47	1871	41	29	1633

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2756	946	0	0	1922	0
Stage 1	1881	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 16	262	-	-	304	-
Stage 1	106	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 14	260	-	-	301	-
Mov Cap-2 Maneuver	72	-	-	-	-	-
Stage 1	95	-	-	-	-	-
Stage 2	368	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	65.6	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	72	260	301	-
HCM Lane V/C Ratio	-	-	0.604	0.18	0.098	-
HCM Control Delay (s)	-	-	112.6	21.9	18.2	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	2.6	0.6	0.3	-

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	4	46	120	10	69	44	1616	62	46	1417	27
Future Volume (vph)	20	4	46	120	10	69	44	1616	62	46	1417	27
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	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1765	1863	1583	1770	1597		1770	3539	1524	1770	3539	1564
Flt Permitted	0.70	1.00	1.00	0.76	1.00		0.11	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1309	1863	1583	1407	1597		211	3539	1524	206	3539	1564
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	21	4	47	124	10	71	45	1666	64	47	1461	28
RTOR Reduction (vph)	0	0	41	0	62	0	0	0	20	0	0	9
Lane Group Flow (vph)	21	4	6	124	19	0	45	1666	44	47	1461	19
Confl. Peds. (#/hr)	2					2			5	5		
Confl. Bikes (#/hr)									10			1
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6		6	2		2
Actuated Green, G (s)	10.6	10.6	10.6	10.6	10.6		54.9	54.9	54.9	54.2	54.2	54.2
Effective Green, g (s)	10.6	10.6	10.6	10.6	10.6		54.9	54.9	54.9	54.2	54.2	54.2
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13		0.69	0.69	0.69	0.68	0.68	0.68
Clearance Time (s)	4.0	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	3.0
Lane Grp Cap (vph)	173	246	209	186	211		207	2428	1045	188	2397	1059
v/s Ratio Prot		0.00			0.01		0.01	c0.47		0.01	c0.41	
v/s Ratio Perm	0.02		0.00	c0.09			0.14		0.03	0.16		0.01
v/c Ratio	0.12	0.02	0.03	0.67	0.09		0.22	0.69	0.04	0.25	0.61	0.02
Uniform Delay, d1	30.6	30.2	30.2	33.0	30.5		6.7	7.4	4.1	11.2	7.1	4.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.1	8.7	0.2		0.5	1.6	0.1	0.7	1.2	0.0
Delay (s)	30.9	30.2	30.3	41.7	30.7		7.2	9.0	4.1	11.9	8.3	4.2
Level of Service	C	C	C	D	C		A	A	A	B	A	A
Approach Delay (s)		30.5			37.4			8.8			8.3	
Approach LOS		C			D			A			A	

Intersection Summary				
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	64.7%	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												
Traffic Volume (veh/h)	20	4	46	120	10	69	44	1616	62	46	1417	27
Future Volume (veh/h)	20	4	46	120	10	69	44	1616	62	46	1417	27
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	21	4	0	124	10	71	45	1666	64	47	1461	28
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	227	193	258	24	171	254	2124	921	379	2466	1087
Arrive On Green	0.12	0.12	0.00	0.12	0.12	0.12	0.03	0.60	0.60	0.13	0.70	0.70
Sat Flow, veh/h	1307	1863	1583	1400	198	1408	1774	3539	1535	1774	3539	1560
Grp Volume(v), veh/h	21	4	0	124	0	81	45	1666	64	47	1461	28
Grp Sat Flow(s),veh/h/ln	1307	1863	1583	1400	0	1606	1774	1770	1535	1774	1770	1560
Q Serve(g_s), s	1.2	0.2	0.0	6.8	0.0	3.7	0.9	28.5	1.4	0.0	17.1	0.4
Cycle Q Clear(g_c), s	4.9	0.2	0.0	7.0	0.0	3.7	0.9	28.5	1.4	0.0	17.1	0.4
Prop In Lane	1.00		1.00	1.00		0.88	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	227	193	258	0	196	254	2124	921	379	2466	1087
V/C Ratio(X)	0.11	0.02	0.00	0.48	0.00	0.41	0.18	0.78	0.07	0.12	0.59	0.03
Avail Cap(c_a), veh/h	290	373	317	367	0	321	286	2124	921	379	2466	1087
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	30.9	0.0	34.0	0.0	32.5	10.0	12.1	6.7	20.5	6.3	3.7
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.4	0.0	1.4	0.2	2.2	0.1	0.1	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.0	2.8	0.0	1.7	0.4	14.3	0.6	0.8	8.5	0.2
LnGrp Delay(d),s/veh	35.0	31.0	0.0	35.4	0.0	33.9	10.3	14.2	6.8	20.6	7.3	3.8
LnGrp LOS	D	C		D		C	B	B	A	C	A	A
Approach Vol, veh/h		25			205			1775			1536	
Approach Delay, s/veh		34.4			34.8			13.9			7.7	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	59.7		13.7	14.3	52.0		13.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	4.0	48.0		16.0
Max Q Clear Time (g_c+I1), s	2.9	19.1		9.0	2.0	30.5		6.9
Green Ext Time (p_c), s	0.0	13.0		0.5	0.0	12.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	512	108	190	942	777	312
Future Volume (vph)	512	108	190	942	777	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5	6.0	6.0	3.5
Lane Util. Factor	0.97		1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3134		1770	3539	3539	1558
Flt Permitted	0.96		0.95	1.00	1.00	1.00
Satd. Flow (perm)	3134		1770	3539	3539	1558
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	545	115	202	1002	827	332
RTOR Reduction (vph)	18	0	0	0	0	99
Lane Group Flow (vph)	642	0	202	1002	827	233
Confl. Peds. (#/hr)	3					
Confl. Bikes (#/hr)						8
Heavy Vehicles (%)	10%	10%	2%	2%	2%	2%
Turn Type	Prot		Prot	NA	NA	pm+ov
Protected Phases	3		1	6	2	3
Permitted Phases						2
Actuated Green, G (s)	23.6		16.7	66.9	46.7	70.3
Effective Green, g (s)	23.6		16.7	66.9	46.7	70.3
Actuated g/C Ratio	0.24		0.17	0.67	0.47	0.70
Clearance Time (s)	3.5		3.5	6.0	6.0	3.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	739		295	2367	1652	1095
v/s Ratio Prot	c0.20		c0.11	0.28	c0.23	0.05
v/s Ratio Perm						0.10
v/c Ratio	0.87		0.68	0.42	0.50	0.21
Uniform Delay, d1	36.7		39.2	7.6	18.5	5.2
Progression Factor	1.00		1.00	1.00	0.82	5.42
Incremental Delay, d2	10.6		6.4	0.6	1.0	0.1
Delay (s)	47.3		45.6	8.2	16.2	28.2
Level of Service	D		D	A	B	C
Approach Delay (s)	47.3			14.5	19.7	
Approach LOS	D			B	B	

Intersection Summary				
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	61.7%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

HCM 2010 methodology does not support exclusive ped or hold phases.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	504	165	848	200	155	1199
Future Volume (vph)	504	165	848	200	155	1199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	0.98	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1549	3421		1770	3539
Flt Permitted	0.95	1.00	1.00		0.19	1.00
Satd. Flow (perm)	1770	1549	3421		347	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	531	174	893	211	163	1262
RTOR Reduction (vph)	0	80	28	0	0	0
Lane Group Flow (vph)	531	94	1076	0	163	1262
Confl. Peds. (#/hr)		9				
Confl. Bikes (#/hr)		3		8		
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	23.1	23.1	36.8		36.8	36.8
Effective Green, g (s)	23.1	23.1	36.8		36.8	36.8
Actuated g/C Ratio	0.33	0.33	0.52		0.52	0.52
Clearance Time (s)	5.0	5.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	576	504	1775		180	1836
v/s Ratio Prot	c0.30		0.31			0.36
v/s Ratio Perm		0.06			c0.47	
v/c Ratio	0.92	0.19	0.61		0.91	0.69
Uniform Delay, d1	23.0	17.2	12.0		15.5	12.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	20.4	0.2	0.6		41.0	1.1
Delay (s)	43.4	17.3	12.6		56.5	13.8
Level of Service	D	B	B		E	B
Approach Delay (s)	37.0		12.6			18.7
Approach LOS	D		B			B

Intersection Summary				
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.91			
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	80.5%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	504	165	848	200	155	1199
Future Volume (veh/h)	504	165	848	200	155	1199
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	531	174	893	211	163	1262
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	566	505	1510	357	258	1891
Arrive On Green	0.32	0.32	0.53	0.53	0.53	0.53
Sat Flow, veh/h	1774	1583	2920	667	509	3632
Grp Volume(v), veh/h	531	174	559	545	163	1262
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1724	509	1770
Q Serve(g_s), s	21.8	6.3	16.1	16.1	23.9	19.3
Cycle Q Clear(g_c), s	21.8	6.3	16.1	16.1	40.0	19.3
Prop In Lane	1.00	1.00		0.39	1.00	
Lane Grp Cap(c), veh/h	566	505	945	921	258	1891
V/C Ratio(X)	0.94	0.34	0.59	0.59	0.63	0.67
Avail Cap(c_a), veh/h	569	508	945	921	258	1891
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	19.5	11.9	11.9	25.6	12.6
Incr Delay (d2), s/veh	23.6	0.4	1.0	1.0	4.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	2.8	8.0	7.8	3.7	9.5
LnGrp Delay(d),s/veh	48.3	19.9	12.9	12.9	30.4	13.5
LnGrp LOS	D	B	B	B	C	B
Approach Vol, veh/h	705		1104			1425
Approach Delay, s/veh	41.3		12.9			15.5
Approach LOS	D		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		46.0				46.0		28.9
Change Period (Y+Rc), s		6.0				6.0		5.0
Max Green Setting (Gmax), s		40.0				40.0		24.0
Max Q Clear Time (g_c+I1), s		18.1				42.0		23.8
Green Ext Time (p_c), s		7.3				0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	10	20	714	20	331	40	595	473	282	690	30
Future Volume (vph)	10	10	20	714	20	331	40	595	473	282	690	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	3.5	4.5	4.5	3.5	4.5	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1542	1681	1690	1560	1770	3539	1570	1770	3511	
Flt Permitted		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1817	1542	1681	1690	1560	1770	3539	1570	1770	3511	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	21	744	21	345	42	620	493	294	719	31
RTOR Reduction (vph)	0	0	20	0	0	248	0	0	194	0	2	0
Lane Group Flow (vph)	0	20	1	379	386	97	42	620	299	294	748	0
Confl. Peds. (#/hr)	1		7	7		1	9		1	1		9
Confl. Bikes (#/hr)			2			2			12			12
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		6.3	6.3	27.0	27.0	27.0	3.7	24.5	51.5	21.0	41.8	
Effective Green, g (s)		6.3	6.3	27.0	27.0	27.0	3.7	24.5	51.5	21.0	41.8	
Actuated g/C Ratio		0.07	0.07	0.28	0.28	0.28	0.04	0.26	0.54	0.22	0.44	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	3.5	4.5	4.5	3.5	4.5	
Vehicle Extension (s)		2.0	2.0	2.0	2.0	2.0	2.0	5.0	2.0	3.5	5.0	
Lane Grp Cap (vph)		119	101	473	476	439	68	905	843	387	1531	
v/s Ratio Prot		c0.01		0.23	c0.23		0.02	c0.18	0.10	c0.17	0.21	
v/s Ratio Perm			0.00			0.06			0.09			
v/c Ratio		0.17	0.01	0.80	0.81	0.22	0.62	0.69	0.35	0.76	0.49	
Uniform Delay, d1		42.3	41.8	31.9	32.0	26.3	45.4	32.2	12.7	35.0	19.3	
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		0.2	0.0	8.9	9.6	0.1	11.2	2.8	0.1	8.6	0.5	
Delay (s)		42.5	41.9	40.8	41.6	26.4	56.5	35.0	12.7	43.6	19.9	
Level of Service		D	D	D	D	C	E	C	B	D	B	
Approach Delay (s)		42.2			36.6			26.3			26.5	
Approach LOS		D			D			C			C	

Intersection Summary				
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	95.8	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	70.0%	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												
Traffic Volume (veh/h)	10	10	20	714	20	331	40	595	473	282	690	30
Future Volume (veh/h)	10	10	20	714	20	331	40	595	473	282	690	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	10	21	759	0	0	42	620	493	294	719	31
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	48	79	895	0	399	52	1029	846	343	1568	68
Arrive On Green	0.05	0.05	0.05	0.25	0.00	0.00	0.03	0.29	0.29	0.19	0.45	0.45
Sat Flow, veh/h	909	909	1491	3548	0	1583	1774	3539	1536	1774	3450	149
Grp Volume(v), veh/h	20	0	21	759	0	0	42	620	493	294	369	381
Grp Sat Flow(s),veh/h/ln	1817	0	1491	1774	0	1583	1774	1770	1536	1774	1770	1829
Q Serve(g_s), s	0.9	0.0	1.1	16.4	0.0	0.0	1.9	12.2	17.4	12.9	11.6	11.6
Cycle Q Clear(g_c), s	0.9	0.0	1.1	16.4	0.0	0.0	1.9	12.2	17.4	12.9	11.6	11.6
Prop In Lane	0.50		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	97	0	79	895	0	399	52	1029	846	343	804	831
V/C Ratio(X)	0.21	0.00	0.26	0.85	0.00	0.00	0.80	0.60	0.58	0.86	0.46	0.46
Avail Cap(c_a), veh/h	608	0	499	1341	0	598	156	1083	869	457	842	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	36.7	28.7	0.0	0.0	38.9	24.6	12.4	31.5	15.2	15.2
Incr Delay (d2), s/veh	0.4	0.0	0.7	2.2	0.0	0.0	10.0	1.4	1.6	12.5	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.5	8.3	0.0	0.0	1.1	6.1	11.2	7.5	5.8	6.0
LnGrp Delay(d),s/veh	37.0	0.0	37.3	30.9	0.0	0.0	48.9	26.0	14.0	44.0	16.0	16.0
LnGrp LOS	D		D	C			D	C	B	D	B	B
Approach Vol, veh/h		41			759			1155			1044	
Approach Delay, s/veh		37.1			30.9			21.7			23.9	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.1	28.0		8.8	5.9	41.2		24.8
Change Period (Y+Rc), s	3.5	4.5		4.5	3.5	4.5		4.5
Max Green Setting (Gmax), s	20.8	24.7		27.0	7.1	38.4		30.5
Max Q Clear Time (g_c+I1), s	14.9	19.4		3.1	3.9	13.6		18.4
Green Ext Time (p_c), s	0.7	3.9		0.1	0.0	8.8		1.8

Intersection Summary			
HCM 2010 Ctrl Delay	25.0		
HCM 2010 LOS	C		

Notes

User approved volume balancing among the lanes for turning movement.

Mitigated

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	138	30	158	69	130	55	542	134	472	744	39
Future Volume (vph)	95	138	30	158	69	130	55	542	134	472	744	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.94	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1804		3433	1649	1467	1770	5085	1554	3433	3504	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1804		3433	1649	1467	1770	5085	1554	3433	3504	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	102	148	32	170	74	140	59	583	144	508	800	42
RTOR Reduction (vph)	0	7	0	0	21	79	0	0	96	0	3	0
Lane Group Flow (vph)	102	173	0	170	101	13	59	583	48	508	839	0
Confl. Peds. (#/hr)	26		8	8			7		19	19		7
Confl. Bikes (#/hr)			5			8						10
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	2	2		6	6		3	8	6	7	4	
Permitted Phases						6			8			
Actuated Green, G (s)	14.1	14.1		11.6	11.6	11.6	6.3	16.3	27.9	20.4	30.4	
Effective Green, g (s)	14.1	14.1		11.6	11.6	11.6	6.3	16.3	27.9	20.4	30.4	
Actuated g/C Ratio	0.17	0.17		0.14	0.14	0.14	0.07	0.19	0.33	0.24	0.36	
Clearance Time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
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)	295	301		471	226	201	132	982	614	829	1262	
v/s Ratio Prot	0.06	c0.10		0.05	c0.06		0.03	0.11	0.01	c0.15	c0.24	
v/s Ratio Perm						0.01			0.02			
v/c Ratio	0.35	0.58		0.36	0.45	0.06	0.45	0.59	0.08	0.61	0.66	
Uniform Delay, d1	31.1	32.4		33.0	33.5	31.7	37.4	31.0	19.4	28.5	22.7	
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	0.7	2.7		0.5	1.4	0.1	2.4	1.0	0.1	1.4	1.3	
Delay (s)	31.8	35.1		33.5	34.9	31.8	39.8	32.0	19.5	29.8	24.0	
Level of Service	C	D		C	C	C	D	C	B	C	C	
Approach Delay (s)		33.9			33.5			30.3			26.2	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	84.4	Sum of lost time (s)	22.0	
Intersection Capacity Utilization	61.0%	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												
Traffic Volume (veh/h)	95	138	30	158	69	130	55	542	134	472	744	39
Future Volume (veh/h)	95	138	30	158	69	130	55	542	134	472	744	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	102	148	32	170	124	107	59	583	144	508	800	42
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	263	57	466	245	199	157	1050	526	653	1049	55
Arrive On Green	0.18	0.18	0.18	0.13	0.13	0.13	0.09	0.21	0.21	0.19	0.31	0.31
Sat Flow, veh/h	1774	1466	317	3548	1863	1515	1774	5085	1540	3442	3408	179
Grp Volume(v), veh/h	102	0	180	170	124	107	59	583	144	508	415	427
Grp Sat Flow(s),veh/h/ln	1774	0	1783	1774	1863	1515	1774	1695	1540	1721	1770	1817
Q Serve(g_s), s	3.8	0.0	6.9	3.3	4.7	5.0	2.4	7.7	5.1	10.5	16.0	16.0
Cycle Q Clear(g_c), s	3.8	0.0	6.9	3.3	4.7	5.0	2.4	7.7	5.1	10.5	16.0	16.0
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	319	0	320	466	245	199	157	1050	526	653	544	559
V/C Ratio(X)	0.32	0.00	0.56	0.36	0.51	0.54	0.38	0.56	0.27	0.78	0.76	0.76
Avail Cap(c_a), veh/h	567	0	569	1133	595	484	213	1827	761	1054	966	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	28.1	29.8	30.4	30.5	32.3	26.7	18.2	28.9	23.5	23.5
Incr Delay (d2), s/veh	0.6	0.0	1.5	0.5	1.6	2.2	1.5	0.5	0.3	2.0	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	0.0	6.4	2.9	4.5	3.9	2.2	6.6	4.8	8.9	12.7	13.0
LnGrp Delay(d),s/veh	27.4	0.0	29.7	30.3	32.0	32.8	33.8	27.2	18.4	31.0	25.8	25.7
LnGrp LOS	C		C	C	C	C	C	C	B	C	C	C
Approach Vol, veh/h		282			401			786			1350	
Approach Delay, s/veh		28.9			31.5			26.1			27.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		18.5	11.7	29.6		15.4	19.3	22.0
Change Period (Y+Rc), s		5.0	5.0	6.5		5.5	5.0	6.5
Max Green Setting (Gmax), s		24.0	9.0	41.0		24.0	23.0	27.0
Max Q Clear Time (g_c+I1), s		8.9	4.4	18.0		7.0	12.5	9.7
Green Ext Time (p_c), s		1.3	0.0	5.2		1.7	1.7	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	691	5	3	530	0	41	8	14	34	144	12
Future Volume (vph)	9	691	5	3	530	0	41	8	14	34	144	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		5.0	6.0	6.0			5.0	5.0		5.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00			1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97			1.00	0.97		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00		1.00	1.00	0.85			1.00	0.85		0.99
Flt Protected	0.95	1.00		0.95	1.00	1.00			0.98	1.00		0.96
Satd. Flow (prot)	1762	3539		1770	3539	1536			1828	1533		1763
Flt Permitted	0.95	1.00		0.95	1.00	1.00			0.88	1.00		0.74
Satd. Flow (perm)	1762	3539		1770	3539	1536			1632	1533		1361
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	751	5	3	576	0	45	9	15	37	157	13
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	0	29	0	0
Lane Group Flow (vph)	10	751	0	8	576	16	0	0	24	8	0	184
Confl. Peds. (#/hr)	6						6			3	3	
Confl. Bikes (#/hr)										16		
Turn Type	Prot	NA	Prot	Prot	NA	Perm		Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	1	6				8			4
Permitted Phases						6		8		8	4	
Actuated Green, G (s)	0.5	24.1		0.5	23.1	23.1			13.3	13.3		13.3
Effective Green, g (s)	0.5	24.1		0.5	23.1	23.1			13.3	13.3		13.3
Actuated g/C Ratio	0.01	0.37		0.01	0.35	0.35			0.20	0.20		0.20
Clearance Time (s)	6.0	6.0		5.0	6.0	6.0			5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)	13	1300		13	1246	540			330	310		275
v/s Ratio Prot	c0.01	c0.21		0.00	0.16							
v/s Ratio Perm						0.01			0.01	0.00		c0.14
v/c Ratio	0.77	0.58		0.62	0.46	0.03			0.07	0.02		0.67
Uniform Delay, d1	32.5	16.7		32.5	16.4	13.9			21.2	21.0		24.1
Progression Factor	1.00	1.00		1.00	1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	128.6	0.6		64.0	0.3	0.0			0.1	0.0		6.1
Delay (s)	161.1	17.3		96.5	16.7	13.9			21.3	21.0		30.2
Level of Service	F	B		F	B	B			C	C		C
Approach Delay (s)		19.2			17.5				21.1			30.2
Approach LOS		B			B				C			C

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	27.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR2	SEL	SER2	NEL2	NEL	NER
Lane Configurations						
Traffic Volume (vph)	13	3	3	1	0	17
Future Volume (vph)	13	3	3	1	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	
Lane Util. Factor		1.00			1.00	
Frpb, ped/bikes		1.00			0.93	
Flpb, ped/bikes		1.00			1.00	
Frt		0.93			0.87	
Flt Protected		0.98			1.00	
Satd. Flow (prot)		1695			1513	
Flt Permitted		0.98			1.00	
Satd. Flow (perm)		1695			1513	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	3	3	1	0	18
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	6	0	0	19	0
Confl. Peds. (#/hr)						3
Confl. Bikes (#/hr)	3					
Turn Type		Prot		Perm	Prot	
Protected Phases		7			3	
Permitted Phases				3		
Actuated Green, G (s)		0.7			1.0	
Effective Green, g (s)		0.7			1.0	
Actuated g/C Ratio		0.01			0.02	
Clearance Time (s)		5.0			5.0	
Vehicle Extension (s)		3.0			3.0	
Lane Grp Cap (vph)		18			23	
v/s Ratio Prot		c0.00				
v/s Ratio Perm					0.01	
v/c Ratio		0.33			0.83	
Uniform Delay, d1		32.2			32.2	
Progression Factor		1.00			1.00	
Incremental Delay, d2		10.6			110.0	
Delay (s)		42.8			142.2	
Level of Service		D			F	
Approach Delay (s)		42.8			142.2	
Approach LOS		D			F	

Intersection Summary

HCM 2010 methodology does not support more than 4 approaches.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1047	83	230	619	21	46	1	151	11	0	3
Future Volume (vph)	12	1047	83	230	619	21	46	1	151	11	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0			4.0	6.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00			1.00	0.99		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1768	3539	1556	3433	3518			1776	1569		1770	1530
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (perm)	1768	3539	1556	3433	3518			1776	1569		1770	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	14	1190	94	261	703	24	52	1	172	12	0	3
RTOR Reduction (vph)	0	0	44	0	1	0	0	0	140	0	0	3
Lane Group Flow (vph)	14	1190	50	261	726	0	0	53	32	0	13	0
Confl. Peds. (#/hr)	1		3	3		1	7		2	2		7
Confl. Bikes (#/hr)			3			13			6			3
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	0.5	44.9	44.9	8.6	53.0			6.9	15.5		4.1	4.1
Effective Green, g (s)	0.5	44.9	44.9	8.6	53.0			6.9	15.5		4.1	4.1
Actuated g/C Ratio	0.01	0.53	0.53	0.10	0.63			0.08	0.18		0.05	0.05
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			4.0	6.0		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)	10	1880	826	349	2206			145	287		85	74
v/s Ratio Prot	0.01	c0.34		c0.08	0.21			c0.03	0.01		c0.01	
v/s Ratio Perm			0.03						0.01			0.00
v/c Ratio	1.40	0.63	0.06	0.75	0.33			0.37	0.11		0.15	0.00
Uniform Delay, d1	42.0	14.0	9.6	36.9	7.4			36.7	28.8		38.5	38.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	438.6	0.7	0.0	8.5	0.1			1.6	0.2		0.8	0.0
Delay (s)	480.6	14.7	9.6	45.4	7.5			38.3	28.9		39.4	38.3
Level of Service	F	B	A	D	A			D	C		D	D
Approach Delay (s)		19.3			17.5			31.1			39.2	
Approach LOS		B			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	59.0%	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												
Traffic Volume (veh/h)	12	1047	83	230	619	21	46	1	151	11	0	3
Future Volume (veh/h)	12	1047	83	230	619	21	46	1	151	11	0	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	14	1190	94	261	703	24	52	1	172	12	0	3
Adj No. of Lanes	1	2	1	2	2	0	0	1	1	0	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	1502	661	354	1791	61	267	5	397	61	0	51
Arrive On Green	0.01	0.42	0.42	0.10	0.51	0.51	0.15	0.15	0.15	0.03	0.00	0.03
Sat Flow, veh/h	1774	3539	1559	3442	3488	119	1742	34	1530	1774	0	1490
Grp Volume(v), veh/h	14	1190	94	261	357	370	53	0	172	12	0	3
Grp Sat Flow(s),veh/h/ln	1774	1770	1559	1721	1770	1837	1776	0	1530	1774	0	1490
Q Serve(g_s), s	0.6	20.5	2.6	5.2	8.6	8.6	1.8	0.0	6.6	0.5	0.0	0.1
Cycle Q Clear(g_c), s	0.6	20.5	2.6	5.2	8.6	8.6	1.8	0.0	6.6	0.5	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.06	0.98		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	24	1502	661	354	909	943	272	0	397	61	0	51
V/C Ratio(X)	0.58	0.79	0.14	0.74	0.39	0.39	0.19	0.00	0.43	0.20	0.00	0.06
Avail Cap(c_a), veh/h	101	1865	821	392	1033	1073	708	0	773	556	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.4	17.5	12.4	30.6	10.4	10.4	25.9	0.0	21.9	32.9	0.0	32.8
Incr Delay (d2), s/veh	20.1	1.9	0.1	6.4	0.3	0.3	0.3	0.0	0.7	1.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	15.6	2.1	5.0	7.6	7.8	1.7	0.0	5.2	0.5	0.0	0.1
LnGrp Delay(d),s/veh	54.5	19.5	12.5	37.0	10.7	10.7	26.3	0.0	22.6	34.5	0.0	33.3
LnGrp LOS	D	B	B	D	B	B	C		C	C		C
Approach Vol, veh/h		1298			988			225			15	
Approach Delay, s/veh		19.3			17.6			23.5			34.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	35.8		6.4	7.0	42.1		14.8
Change Period (Y+Rc), s	6.0	6.0		4.0	6.0	6.0		4.0
Max Green Setting (Gmax), s	8.0	37.0		22.0	4.0	41.0		28.0
Max Q Clear Time (g_c+I1), s	7.2	22.5		2.5	2.6	10.6		8.6
Green Ext Time (p_c), s	0.1	7.3		0.0	0.0	4.7		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	1189	87	143	591	34	335	26	500	5	2	10
Future Volume (vph)	18	1189	87	143	591	34	335	26	500	5	2	10
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	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		0.99	0.99	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5085	1381	1641	5035		1547	1563	1468	1681	1661	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.76	0.75	1.00	0.25	0.62	1.00
Satd. Flow (perm)	1770	5085	1381	1641	5035		1230	1229	1468	442	1055	1553
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	20	1336	98	161	664	38	376	29	562	6	2	11
RTOR Reduction (vph)	0	0	64	0	6	0	0	0	249	0	0	9
Lane Group Flow (vph)	20	1336	34	161	696	0	203	202	313	4	4	2
Confl. Peds. (#/hr)	1		5	5		1	4					4
Confl. Bikes (#/hr)			23			14						
Heavy Vehicles (%)	2%	2%	10%	10%	2%	2%	10%	10%	10%	2%	10%	2%
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases			2				8		8	4		4
Actuated Green, G (s)	2.4	34.9	34.9	14.1	46.6		19.0	19.0	33.1	16.0	16.0	16.0
Effective Green, g (s)	2.4	34.9	34.9	14.1	46.6		19.0	19.0	33.1	16.0	16.0	16.0
Actuated g/C Ratio	0.02	0.35	0.35	0.14	0.47		0.19	0.19	0.33	0.16	0.16	0.16
Clearance Time (s)	4.0	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	3.0
Lane Grp Cap (vph)	42	1774	481	231	2346		233	233	544	70	168	248
v/s Ratio Prot	0.01	c0.26		c0.10	0.14				0.08			
v/s Ratio Perm			0.02				c0.17	0.16	0.13	c0.01	0.00	0.00
v/c Ratio	0.48	0.75	0.07	0.70	0.30		0.87	0.87	0.58	0.06	0.02	0.01
Uniform Delay, d1	48.2	28.7	21.7	40.9	16.5		39.3	39.3	27.6	35.6	35.4	35.3
Progression Factor	1.00	1.00	1.00	1.38	0.45		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	3.0	0.3	7.3	0.3		33.2	32.6	1.5	1.6	0.3	0.1
Delay (s)	56.5	31.8	22.0	63.8	7.7		72.5	71.9	29.1	37.2	35.7	35.4
Level of Service	E	C	C	E	A		E	E	C	D	D	D
Approach Delay (s)		31.4			18.1			47.2			35.8	
Approach LOS		C			B			D			D	

Intersection Summary				
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	77.3%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	1189	87	143	591	34	335	26	500	5	2	10
Future Volume (veh/h)	18	1189	87	143	591	34	335	26	500	5	2	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1863	1900	1727	1727	1727	1863	1792	1863
Adj Flow Rate, veh/h	20	1336	98	161	664	38	397	0	562	4	5	11
Adj No. of Lanes	1	3	1	1	3	0	2	0	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	10	10	2	2	10	10	10	2	10	2
Cap, veh/h	461	2926	812	188	2112	120	626	0	445	232	341	299
Arrive On Green	0.26	0.58	0.58	0.23	0.86	0.86	0.19	0.00	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1774	5085	1411	1645	4911	279	2565	0	1459	842	1792	1573
Grp Volume(v), veh/h	20	1336	98	161	457	245	397	0	562	4	5	11
Grp Sat Flow(s),veh/h/ln	1774	1695	1411	1645	1695	1801	1282	0	1459	842	1792	1573
Q Serve(g_s), s	0.8	15.1	3.2	9.4	2.6	2.6	14.9	0.0	19.0	0.4	0.2	0.6
Cycle Q Clear(g_c), s	0.8	15.1	3.2	9.4	2.6	2.6	15.1	0.0	19.0	0.4	0.2	0.6
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	2926	812	188	1458	774	626	0	445	232	341	299
V/C Ratio(X)	0.04	0.46	0.12	0.85	0.31	0.32	0.63	0.00	1.26	0.02	0.01	0.04
Avail Cap(c_a), veh/h	461	2926	812	263	1458	774	626	0	445	232	341	299
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	12.2	9.7	37.7	4.2	4.2	39.0	0.0	34.8	33.0	32.9	33.0
Incr Delay (d2), s/veh	0.0	0.5	0.3	13.8	0.4	0.8	4.9	0.0	134.9	0.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	11.6	2.3	8.1	2.2	2.5	9.6	0.0	52.2	0.2	0.2	0.5
LnGrp Delay(d),s/veh	27.7	12.7	10.0	51.6	4.6	5.0	43.9	0.0	169.7	33.1	33.0	33.3
LnGrp LOS	C	B	A	D	A	A	D		F	C	C	C
Approach Vol, veh/h		1454			863			959			20	
Approach Delay, s/veh		12.8			13.5			117.6			33.2	
Approach LOS		B			B			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	61.5		23.0	30.0	47.0		23.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	33.0		16.0	6.0	43.0		19.0
Max Q Clear Time (g_c+I1), s	11.4	17.1		2.6	2.8	4.6		21.0
Green Ext Time (p_c), s	0.2	8.7		0.0	0.0	5.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay	43.6		
HCM 2010 LOS	D		

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	529	1165	0	0	645	116	123	2	153	0	0	0
Future Volume (vph)	529	1165	0	0	645	116	123	2	153	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				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.85				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3183	3539			3407		1641	1471				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3183	3539			3407		1641	1471				
Peak-hour factor, PHF	0.84	0.84	0.92	0.92	0.84	0.84	0.84	0.84	0.84	0.92	0.92	0.92
Adj. Flow (vph)	630	1387	0	0	768	138	146	2	182	0	0	0
RTOR Reduction (vph)	0	0	0	0	13	0	0	72	0	0	0	0
Lane Group Flow (vph)	630	1387	0	0	893	0	146	112	0	0	0	0
Confl. Peds. (#/hr)	1		9	9		1						
Confl. Bikes (#/hr)			10			15						
Heavy Vehicles (%)	10%	2%	2%	2%	2%	10%	10%	10%	10%	2%	2%	2%
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	30.0	78.0			44.0		14.0	14.0				
Effective Green, g (s)	30.0	78.0			44.0		14.0	14.0				
Actuated g/C Ratio	0.30	0.78			0.44		0.14	0.14				
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	954	2760			1499		229	205				
v/s Ratio Prot	c0.20	0.39			c0.26		c0.09	0.08				
v/s Ratio Perm												
v/c Ratio	0.66	0.50			0.60		0.64	0.55				
Uniform Delay, d1	30.6	4.0			21.2		40.6	40.0				
Progression Factor	0.40	0.41			0.54		1.00	1.00				
Incremental Delay, d2	1.2	0.5			1.7		5.7	2.9				
Delay (s)	13.6	2.1			13.3		46.3	43.0				
Level of Service	B	A			B		D	D				
Approach Delay (s)		5.7			13.3			44.5			0.0	
Approach LOS		A			B			D			A	

Intersection Summary					
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.62				
Actuated Cycle Length (s)	100.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	56.2%	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												
Traffic Volume (veh/h)	529	1165	0	0	645	116	123	2	153	0	0	0
Future Volume (veh/h)	529	1165	0	0	645	116	123	2	153	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1727	1863	0	0	1841	1900	1727	1727	1900			
Adj Flow Rate, veh/h	630	1387	0	0	768	138	146	2	182			
Adj No. of Lanes	2	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.84	0.84	0.92	0.92	0.84	0.84	0.84	0.84	0.84			
Percent Heavy Veh, %	10	2	0	0	2	2	10	10	10			
Cap, veh/h	1088	2728	0	0	1151	207	245	2	217			
Arrive On Green	0.68	1.00	0.00	0.00	0.13	0.13	0.15	0.15	0.15			
Sat Flow, veh/h	3191	3632	0	0	3044	530	1645	16	1455			
Grp Volume(v), veh/h	630	1387	0	0	455	451	146	0	184			
Grp Sat Flow(s),veh/h/ln	1596	1770	0	0	1749	1734	1645	0	1471			
Q Serve(g_s), s	10.4	0.0	0.0	0.0	24.8	24.8	8.3	0.0	12.2			
Cycle Q Clear(g_c), s	10.4	0.0	0.0	0.0	24.8	24.8	8.3	0.0	12.2			
Prop In Lane	1.00		0.00	0.00		0.31	1.00		0.99			
Lane Grp Cap(c), veh/h	1088	2728	0	0	682	676	245	0	219			
V/C Ratio(X)	0.58	0.51	0.00	0.00	0.67	0.67	0.59	0.00	0.84			
Avail Cap(c_a), veh/h	1088	2728	0	0	682	676	313	0	279			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.59	0.59	0.00	0.00	0.95	0.95	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.1	0.0	0.0	0.0	37.4	37.4	39.7	0.0	41.4			
Incr Delay (d2), s/veh	0.5	0.4	0.0	0.0	4.8	4.9	2.3	0.0	16.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	7.1	0.3	0.0	0.0	18.7	18.5	7.1	0.0	9.9			
LnGrp Delay(d),s/veh	12.6	0.4	0.0	0.0	42.2	42.3	42.0	0.0	57.6			
LnGrp LOS	B	A			D	D	D		E			
Approach Vol, veh/h		2017			906			330				
Approach Delay, s/veh		4.2			42.2			50.7				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		81.1			38.1	43.0		18.9
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		73.0			30.0	39.0		19.0
Max Q Clear Time (g_c+I1), s		2.0			12.4	26.8		14.2
Green Ext Time (p_c), s		15.7			2.8	4.5		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		19.5
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	705	33	552	10	13	10	168	315	10	10	450	560
Future Volume (vph)	705	33	552	10	13	10	168	315	10	10	450	560
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	0.95	0.95	1.00	1.00	1.00		0.97	1.00			0.95	0.88
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1693	1555	1770	1719		3433	1852			3535	2762
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.95	1.00			0.94	1.00
Satd. Flow (perm)	1681	1693	1555	1770	1719		3433	1852			3343	2762
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)	783	37	613	11	14	11	187	350	11	11	500	622
RTOR Reduction (vph)	0	0	206	0	11	0	0	1	0	0	0	0
Lane Group Flow (vph)	407	413	407	11	14	0	187	360	0	0	511	622
Confl. Peds. (#/hr)			6	6			5		6	6		
Confl. Bikes (#/hr)						3			9			9
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Perm	NA	pm+ov
Protected Phases	8	8	1	4	4		1	6			2	8
Permitted Phases			8							2		2
Actuated Green, G (s)	43.7	43.7	55.7	4.3	4.3		12.0	40.0			24.0	67.7
Effective Green, g (s)	43.7	43.7	55.7	4.3	4.3		12.0	40.0			24.0	67.7
Actuated g/C Ratio	0.44	0.44	0.56	0.04	0.04		0.12	0.40			0.24	0.68
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)	734	739	928	76	73		411	740			802	1869
v/s Ratio Prot	0.24	c0.24	0.05	0.01	c0.01		0.05	c0.19				0.15
v/s Ratio Perm			0.21								c0.15	0.08
v/c Ratio	0.55	0.56	0.44	0.14	0.20		0.45	0.49			0.64	0.33
Uniform Delay, d1	20.9	21.0	13.0	46.1	46.2		41.0	22.3			34.1	6.7
Progression Factor	0.65	0.65	0.47	1.00	1.00		1.00	1.00			0.64	0.42
Incremental Delay, d2	2.6	2.7	0.3	0.9	1.3		0.8	2.3			3.6	0.4
Delay (s)	16.2	16.3	6.4	47.0	47.5		41.8	24.6			25.3	3.3
Level of Service	B	B	A	D	D		D	C			C	A
Approach Delay (s)		12.0			47.4			30.5			13.2	
Approach LOS		B			D			C			B	

Intersection Summary				
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	67.0%	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												
Traffic Volume (veh/h)	705	33	552	10	13	10	168	315	10	10	450	560
Future Volume (veh/h)	705	33	552	10	13	10	168	315	10	10	450	560
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	809	0	613	11	14	11	187	350	11	11	500	622
Adj No. of Lanes	2	0	1	1	1	0	2	1	0	0	2	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1135	0	626	284	153	120	265	718	23	45	968	1647
Arrive On Green	0.32	0.00	0.32	0.16	0.16	0.16	0.08	0.40	0.40	0.09	0.09	0.09
Sat Flow, veh/h	3548	0	1574	1774	955	751	3442	1794	56	28	3422	2670
Grp Volume(v), veh/h	809	0	613	11	0	25	187	0	361	273	238	622
Grp Sat Flow(s),veh/h/ln	1774	0	1574	1774	0	1706	1721	0	1850	1839	1610	1335
Q Serve(g_s), s	20.1	0.0	32.0	0.5	0.0	1.2	5.3	0.0	14.5	0.0	14.1	12.7
Cycle Q Clear(g_c), s	20.1	0.0	32.0	0.5	0.0	1.2	5.3	0.0	14.5	14.0	14.1	12.7
Prop In Lane	1.00		1.00	1.00		0.44	1.00		0.03	0.04		1.00
Lane Grp Cap(c), veh/h	1135	0	626	284	0	273	265	0	740	558	456	1647
V/C Ratio(X)	0.71	0.00	0.98	0.04	0.00	0.09	0.71	0.00	0.49	0.49	0.52	0.38
Avail Cap(c_a), veh/h	1135	0	626	284	0	273	551	0	740	558	456	1647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.86	0.00	0.86	1.00	0.00	1.00	1.00	0.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	29.9	0.0	29.8	35.5	0.0	35.8	45.0	0.0	22.4	38.8	38.9	13.1
Incr Delay (d2), s/veh	3.3	0.0	28.7	0.1	0.0	0.1	3.4	0.0	2.3	2.7	3.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.2	0.0	28.6	0.5	0.0	1.1	4.8	0.0	12.5	11.9	10.8	13.2
LnGrp Delay(d),s/veh	33.2	0.0	58.4	35.6	0.0	35.9	48.5	0.0	24.7	41.6	42.7	13.7
LnGrp LOS	C		E	D		D	D		C	D	D	B
Approach Vol, veh/h		1422			36			548			1133	
Approach Delay, s/veh		44.1			35.8			32.8			26.5	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.7	32.3		20.0		44.0		36.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	16.0	20.0		16.0		40.0		32.0
Max Q Clear Time (g_c+I1), s	7.3	16.1		3.2		16.5		34.0
Green Ext Time (p_c), s	0.4	2.3		0.1		2.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.7
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
7: Higuera & Madonna

Mitigated Near Term Plus Project AM 2025
04/11/2018

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Central Coast Transportation Consulting

Synchro 10 Report

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	26	17	947	77	28	1000
Future Volume (vph)	26	17	947	77	28	1000
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	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1536	1766	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.27	1.00
Satd. Flow (perm)	1770	1583	3539	1536	509	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	18	1029	84	30	1087
RTOR Reduction (vph)	0	17	0	19	0	0
Lane Group Flow (vph)	28	1	1029	65	30	1087
Confl. Peds. (#/hr)				8	8	
Confl. Bikes (#/hr)				2		
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	2.3	2.3	26.9	26.9	26.9	26.9
Effective Green, g (s)	2.3	2.3	26.9	26.9	26.9	26.9
Actuated g/C Ratio	0.06	0.06	0.72	0.72	0.72	0.72
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)	109	97	2559	1110	368	2559
v/s Ratio Prot	c0.02		0.29			c0.31
v/s Ratio Perm		0.00		0.04	0.06	
v/c Ratio	0.26	0.01	0.40	0.06	0.08	0.42
Uniform Delay, d1	16.6	16.4	2.0	1.5	1.5	2.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	0.1	0.0	0.1	0.1
Delay (s)	17.9	16.4	2.1	1.5	1.6	2.2
Level of Service	B	B	A	A	A	A
Approach Delay (s)	17.3		2.1			2.2
Approach LOS	B		A			A

Intersection Summary				
HCM 2000 Control Delay	2.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	26	17	947	77	28	1000
Future Volume (veh/h)	26	17	947	77	28	1000
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	28	18	1029	84	30	1087
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	80	71	2007	873	545	2007
Arrive On Green	0.04	0.04	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1774	1583	3632	1539	504	3632
Grp Volume(v), veh/h	28	18	1029	84	30	1087
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1539	504	1770
Q Serve(g_s), s	0.3	0.2	3.7	0.5	0.8	4.0
Cycle Q Clear(g_c), s	0.3	0.2	3.7	0.5	4.5	4.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	80	71	2007	873	545	2007
V/C Ratio(X)	0.35	0.25	0.51	0.10	0.06	0.54
Avail Cap(c_a), veh/h	1376	1228	2746	1194	650	2746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	9.5	2.7	2.0	4.1	2.8
Incr Delay (d2), s/veh	2.6	1.8	0.2	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.2	3.2	0.4	0.2	3.4
LnGrp Delay(d),s/veh	12.2	11.4	2.9	2.1	4.1	3.0
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	46		1113			1117
Approach Delay, s/veh	11.9		2.9			3.0
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		15.7				15.7		4.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		16.0				16.0		16.0
Max Q Clear Time (g_c+I1), s		5.7				6.5		2.3
Green Ext Time (p_c), s		5.0				5.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	3.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	2	51	56	3	22	47	941	71	37	998	20
Future Volume (vph)	12	2	51	56	3	22	47	941	71	37	998	20
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		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1754	1863	1583	1770	1585		1769	3539	1544	1769	3539	1553
Flt Permitted	0.74	1.00	1.00	0.76	1.00		0.23	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1366	1863	1583	1409	1585		420	3539	1544	459	3539	1553
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)	13	2	57	62	3	24	52	1046	79	41	1109	22
RTOR Reduction (vph)	0	0	51	0	22	0	0	0	25	0	0	7
Lane Group Flow (vph)	13	2	6	62	5	0	52	1046	54	41	1109	15
Confl. Peds. (#/hr)	6					6	4		2	2		4
Confl. Bikes (#/hr)												4
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6		6	2		2
Actuated Green, G (s)	7.8	7.8	7.8	7.8	7.8		57.8	54.2	54.2	56.6	53.6	53.6
Effective Green, g (s)	7.8	7.8	7.8	7.8	7.8		57.8	54.2	54.2	56.6	53.6	53.6
Actuated g/C Ratio	0.10	0.10	0.10	0.10	0.10		0.72	0.68	0.68	0.71	0.67	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	133	181	154	137	154		364	2397	1046	373	2371	1040
v/s Ratio Prot		0.00			0.00		c0.01	0.30		0.00	c0.31	
v/s Ratio Perm	0.01		0.00	c0.04			0.10		0.03	0.07		0.01
v/c Ratio	0.10	0.01	0.04	0.45	0.03		0.14	0.44	0.05	0.11	0.47	0.01
Uniform Delay, d1	32.9	32.6	32.7	34.1	32.7		5.8	5.9	4.3	5.6	6.3	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.1	2.4	0.1		0.2	0.6	0.1	0.1	0.7	0.0
Delay (s)	33.2	32.6	32.8	36.5	32.8		6.0	6.5	4.4	5.8	7.0	4.4
Level of Service	C	C	C	D	C		A	A	A	A	A	A
Approach Delay (s)		32.9			35.3			6.3			6.9	
Approach LOS		C			D			A			A	

Intersection Summary				
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	53.8%	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												
Traffic Volume (veh/h)	12	2	51	56	3	22	47	941	71	37	998	20
Future Volume (veh/h)	12	2	51	56	3	22	47	941	71	37	998	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		1.00	0.98		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	13	2	0	62	3	24	52	1046	79	41	1109	22
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	153	130	202	14	115	620	1858	828	610	1814	798
Arrive On Green	0.08	0.08	0.00	0.08	0.08	0.08	0.22	0.52	0.52	0.21	0.51	0.51
Sat Flow, veh/h	1352	1863	1583	1379	175	1403	1774	3539	1577	1774	3539	1558
Grp Volume(v), veh/h	13	2	0	62	0	27	52	1046	79	41	1109	22
Grp Sat Flow(s),veh/h/ln	1352	1863	1583	1379	0	1578	1774	1770	1577	1774	1770	1558
Q Serve(g_s), s	0.7	0.1	0.0	3.5	0.0	1.3	0.0	15.9	2.0	0.0	17.8	0.6
Cycle Q Clear(g_c), s	2.0	0.1	0.0	3.5	0.0	1.3	0.0	15.9	2.0	0.0	17.8	0.6
Prop In Lane	1.00		1.00	1.00		0.89	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	153	130	202	0	130	620	1858	828	610	1814	798
V/C Ratio(X)	0.07	0.01	0.00	0.31	0.00	0.21	0.08	0.56	0.10	0.07	0.61	0.03
Avail Cap(c_a), veh/h	372	419	356	399	0	355	620	1858	828	610	1814	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	33.7	0.0	35.4	0.0	34.3	10.8	12.8	9.5	10.1	13.8	9.6
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.9	0.0	0.8	0.0	1.0	0.2	0.0	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.1	0.0	2.5	0.0	1.1	1.1	12.2	1.6	0.9	13.9	0.5
LnGrp Delay(d),s/veh	35.4	33.8	0.0	36.2	0.0	35.1	10.9	13.8	9.7	10.1	15.4	9.7
LnGrp LOS	D	C		D		D	B	B	A	B	B	A
Approach Vol, veh/h		15			89			1177			1172	
Approach Delay, s/veh		35.2			35.9			13.4			15.1	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.4	47.0		10.6	21.4	48.0		10.6
Change Period (Y+Rc), s	5.0	6.0		4.0	5.0	6.0		4.0
Max Green Setting (Gmax), s	6.0	41.0		18.0	5.0	42.0		18.0
Max Q Clear Time (g_c+I1), s	2.0	19.8		5.5	2.0	17.9		4.0
Green Ext Time (p_c), s	0.0	7.9		0.2	0.0	8.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	433	210	122	536	1122	105
Future Volume (vph)	433	210	122	536	1122	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97		1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3083		1641	3539	3539	1445
Flt Permitted	0.97		0.95	1.00	1.00	1.00
Satd. Flow (perm)	3083		1641	3539	3539	1445
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	461	223	130	570	1194	112
RTOR Reduction (vph)	62	0	0	0	0	36
Lane Group Flow (vph)	622	0	130	570	1194	76
Confl. Bikes (#/hr)						5
Heavy Vehicles (%)	10%	10%	10%	2%	2%	10%
Turn Type	Prot		Prot	NA	NA	pm+ov
Protected Phases	3		1	6	2	3
Permitted Phases						2
Actuated Green, G (s)	21.6		10.9	61.7	47.3	68.9
Effective Green, g (s)	21.1		10.4	63.7	49.3	67.9
Actuated g/C Ratio	0.21		0.10	0.64	0.49	0.68
Clearance Time (s)	3.5		3.5	6.0	6.0	3.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	650		170	2254	1744	981
v/s Ratio Prot	c0.20		c0.08	0.16	c0.34	0.02
v/s Ratio Perm						0.04
v/c Ratio	0.96		0.76	0.25	0.68	0.08
Uniform Delay, d1	39.0		43.6	7.9	19.4	5.4
Progression Factor	1.00		1.00	1.00	0.39	0.38
Incremental Delay, d2	24.9		18.3	0.3	1.5	0.0
Delay (s)	64.0		61.9	8.1	9.1	2.1
Level of Service	E		E	A	A	A
Approach Delay (s)	64.0			18.1	8.5	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 methodology does not support exclusive ped or hold phases.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	158	84	1100	283	75	571
Future Volume (vph)	158	84	1100	283	75	571
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		6.0		6.0	6.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frpb, ped/bikes	0.99		0.99		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.95		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	3270		3413		1769	3539
Flt Permitted	0.97		1.00		0.13	1.00
Satd. Flow (perm)	3270		3413		251	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	91	1196	308	82	621
RTOR Reduction (vph)	68	0	20	0	0	0
Lane Group Flow (vph)	195	0	1484	0	82	621
Confl. Peds. (#/hr)		6		1	1	
Confl. Bikes (#/hr)		5		6		
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	10.4		49.2		49.2	49.2
Effective Green, g (s)	10.4		49.2		49.2	49.2
Actuated g/C Ratio	0.15		0.70		0.70	0.70
Clearance Time (s)	5.0		6.0		6.0	6.0
Vehicle Extension (s)	2.0		5.5		5.5	5.5
Lane Grp Cap (vph)	481		2378		174	2466
v/s Ratio Prot	c0.06		c0.43			0.18
v/s Ratio Perm					0.33	
v/c Ratio	0.40		0.62		0.47	0.25
Uniform Delay, d1	27.3		5.7		4.8	3.9
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.2		0.8		4.9	0.1
Delay (s)	27.5		6.5		9.7	4.1
Level of Service	C		A		A	A
Approach Delay (s)	27.5		6.5			4.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	11.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	158	84	1100	283	75	571
Future Volume (veh/h)	158	84	1100	283	75	571
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1863	1863
Adj Flow Rate, veh/h	132	134	1196	308	82	621
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	212	193	1964	498	280	2499
Arrive On Green	0.12	0.12	0.71	0.71	0.71	0.71
Sat Flow, veh/h	1774	1615	2875	706	347	3632
Grp Volume(v), veh/h	132	134	754	750	82	621
Grp Sat Flow(s),veh/h/ln	1774	1615	1770	1718	347	1770
Q Serve(g_s), s	4.5	5.0	13.8	14.4	10.2	3.9
Cycle Q Clear(g_c), s	4.5	5.0	13.8	14.4	24.5	3.9
Prop In Lane	1.00	1.00		0.41	1.00	
Lane Grp Cap(c), veh/h	212	193	1249	1213	280	2499
V/C Ratio(X)	0.62	0.69	0.60	0.62	0.29	0.25
Avail Cap(c_a), veh/h	675	614	1542	1497	338	3084
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	26.7	4.8	4.8	11.2	3.3
Incr Delay (d2), s/veh	1.1	1.7	1.3	1.4	1.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	4.2	11.3	11.5	1.9	3.5
LnGrp Delay(d),s/veh	27.5	28.3	6.1	6.3	12.8	3.4
LnGrp LOS	C	C	A	A	B	A
Approach Vol, veh/h	266		1504			703
Approach Delay, s/veh	27.9		6.2			4.5
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		50.6				50.6		12.6
Change Period (Y+Rc), s		6.0				6.0		5.0
Max Green Setting (Gmax), s		55.0				55.0		24.0
Max Q Clear Time (g_c+I1), s		16.4				26.5		7.0
Green Ext Time (p_c), s		28.2				11.7		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	10	30	377	10	262	20	530	733	250	355	10
Future Volume (vph)	30	10	30	377	10	262	20	530	733	250	355	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1796	1556	1681	1690	1556	1770	3539	1569	1770	3521	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1796	1556	1681	1690	1556	1770	3539	1569	1770	3521	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	11	32	405	11	282	22	570	788	269	382	11
RTOR Reduction (vph)	0	0	30	0	0	224	0	0	323	0	2	0
Lane Group Flow (vph)	0	43	2	207	209	58	22	570	465	269	391	0
Confl. Peds. (#/hr)			1	1			3		3	3		3
Confl. Bikes (#/hr)			1			5						10
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	8	8		4	4		5	2	4	1	6	
Permitted Phases			8			4			2			
Actuated Green, G (s)		5.5	5.5	19.0	19.0	19.0	1.7	26.1	45.1	19.3	43.7	
Effective Green, g (s)		5.5	5.5	19.0	19.0	19.0	1.7	26.1	45.1	19.3	43.7	
Actuated g/C Ratio		0.06	0.06	0.20	0.20	0.20	0.02	0.28	0.49	0.21	0.47	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		2.0	2.0	2.0	2.0	2.0	2.0	5.0	2.0	3.5	5.0	
Lane Grp Cap (vph)		106	92	343	345	318	32	994	863	367	1656	
v/s Ratio Prot		c0.02		0.12	0.12		0.01	0.16	c0.11	c0.15	0.11	
v/s Ratio Perm			0.00			0.04			0.19			
v/c Ratio		0.41	0.02	0.60	0.61	0.18	0.69	0.57	0.54	0.73	0.24	
Uniform Delay, d1		42.1	41.2	33.5	33.5	30.5	45.3	28.6	16.7	34.4	14.7	
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		0.9	0.0	2.1	2.1	0.1	39.1	1.3	0.3	7.6	0.2	
Delay (s)		43.0	41.2	35.6	35.6	30.6	84.5	29.9	17.0	42.0	14.8	
Level of Service		D	D	D	D	C	F	C	B	D	B	
Approach Delay (s)		42.3			33.6			23.4			25.9	
Approach LOS		D			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	23.0	
Intersection Capacity Utilization	78.4%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	10	30	377	10	262	20	530	733	250	355	10
Future Volume (veh/h)	30	10	30	377	10	262	20	530	733	250	355	10
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	32	11	32	413	0	0	22	570	788	269	382	11
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	25	83	533	0	238	43	1155	752	322	1698	49
Arrive On Green	0.08	0.05	0.05	0.15	0.00	0.00	0.02	0.33	0.33	0.18	0.48	0.48
Sat Flow, veh/h	1336	459	1551	3548	0	1583	1774	3539	1576	1774	3511	101
Grp Volume(v), veh/h	43	0	32	413	0	0	22	570	788	269	192	201
Grp Sat Flow(s),veh/h/ln	1796	0	1551	1774	0	1583	1774	1770	1576	1774	1770	1843
Q Serve(g_s), s	1.8	0.0	1.6	8.9	0.0	0.0	1.0	10.3	26.0	11.7	5.0	5.0
Cycle Q Clear(g_c), s	1.8	0.0	1.6	8.9	0.0	0.0	1.0	10.3	26.0	11.7	5.0	5.0
Prop In Lane	0.74		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	96	0	83	533	0	238	43	1155	752	322	856	891
V/C Ratio(X)	0.45	0.00	0.39	0.77	0.00	0.00	0.51	0.49	1.05	0.84	0.22	0.23
Avail Cap(c_a), veh/h	496	0	428	1158	0	517	111	1155	752	512	977	1018
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	0.0	36.4	32.5	0.0	0.0	38.4	21.5	17.7	31.5	11.9	11.9
Incr Delay (d2), s/veh	1.2	0.0	1.1	0.9	0.0	0.0	3.5	0.7	45.9	7.7	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	1.3	7.9	0.0	0.0	0.9	8.8	46.6	10.5	4.5	4.7
LnGrp Delay(d),s/veh	37.1	0.0	37.5	33.5	0.0	0.0	41.9	22.2	63.6	39.2	12.2	12.2
LnGrp LOS	D		D	C			D	C	F	D	B	B
Approach Vol, veh/h		75			413			1380			662	
Approach Delay, s/veh		37.3			33.5			46.2			23.2	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.4	32.0		18.0	6.9	44.5		10.3
Change Period (Y+Rc), s	5.0	6.0		6.0	5.0	6.0		6.0
Max Green Setting (Gmax), s	23.0	26.0		26.0	5.0	44.0		22.0
Max Q Clear Time (g_c+I1), s	13.7	28.0		10.9	3.0	7.0		3.8
Green Ext Time (p_c), s	0.8	0.0		0.9	0.0	4.6		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
16: Higuera & Tank Farm
Mitigated Near Term Plus Project AM 2025
04/11/2018

User approved volume balancing among the lanes for turning movement.

Central Coast Transportation Consulting
Synchro 10 Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	102	60	326	120	464	90	1109	402	411	847	37
Future Volume (vph)	45	102	60	326	120	464	90	1109	402	411	847	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.91	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.91	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1740		3433	1590	1472	1770	5085	1552	3433	3509	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1740		3433	1590	1472	1770	5085	1552	3433	3509	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	105	62	336	124	478	93	1143	414	424	873	38
RTOR Reduction (vph)	0	17	0	0	45	236	0	0	196	0	3	0
Lane Group Flow (vph)	46	150	0	336	265	56	93	1143	218	424	908	0
Confl. Peds. (#/hr)	12		10	10			7		12	12		7
Confl. Bikes (#/hr)			3			8						7
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	2	2		6	6		3	8	6	7	4	
Permitted Phases						6			8			
Actuated Green, G (s)	25.1	25.1		22.5	22.5	22.5	12.1	31.3	53.8	16.6	35.8	
Effective Green, g (s)	25.1	25.1		22.5	22.5	22.5	12.1	31.3	53.8	16.6	35.8	
Actuated g/C Ratio	0.21	0.21		0.19	0.19	0.19	0.10	0.27	0.46	0.14	0.30	
Clearance Time (s)	5.0	5.0		5.5	5.5	5.5	5.0	6.5	5.5	5.0	6.5	
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)	378	371		657	304	281	182	1354	710	485	1069	
v/s Ratio Prot	0.03	c0.09		0.10	c0.17		0.05	0.22	0.06	c0.12	c0.26	
v/s Ratio Perm						0.04			0.08			
v/c Ratio	0.12	0.40		0.51	0.87	0.20	0.51	0.84	0.31	0.87	0.85	
Uniform Delay, d1	37.3	39.8		42.6	46.1	39.9	49.9	40.8	20.1	49.4	38.3	
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	0.7	3.2		0.7	22.7	0.3	2.4	5.0	0.2	15.9	6.5	
Delay (s)	38.0	43.0		43.2	68.8	40.3	52.3	45.8	20.3	65.4	44.8	
Level of Service	D	D		D	E	D	D	D	C	E	D	
Approach Delay (s)		41.9			50.8			39.8			51.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	102	60	326	120	464	90	1109	402	411	847	37
Future Volume (veh/h)	45	102	60	326	120	464	90	1109	402	411	847	37
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	46	105	62	336	390	301	93	1143	414	424	873	38
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	230	136	707	371	304	200	1336	726	479	996	43
Arrive On Green	0.21	0.21	0.21	0.20	0.20	0.20	0.11	0.26	0.26	0.14	0.29	0.29
Sat Flow, veh/h	1774	1085	640	3548	1863	1527	1774	5085	1562	3442	3447	150
Grp Volume(v), veh/h	46	0	167	336	390	301	93	1143	414	424	448	463
Grp Sat Flow(s),veh/h/ln	1774	0	1725	1774	1863	1527	1774	1695	1562	1721	1770	1827
Q Serve(g_s), s	2.5	0.0	10.0	9.9	23.5	23.2	5.8	25.2	22.9	14.3	28.4	28.4
Cycle Q Clear(g_c), s	2.5	0.0	10.0	9.9	23.5	23.2	5.8	25.2	22.9	14.3	28.4	28.4
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	376	0	366	707	371	304	200	1336	726	479	511	528
V/C Ratio(X)	0.12	0.00	0.46	0.48	1.05	0.99	0.46	0.86	0.57	0.88	0.88	0.88
Avail Cap(c_a), veh/h	376	0	366	707	371	304	200	1402	746	496	593	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	0.0	40.5	41.7	47.2	47.1	48.9	41.3	23.2	49.8	39.9	39.9
Incr Delay (d2), s/veh	0.7	0.0	4.1	0.5	60.5	48.3	1.7	5.3	1.0	16.8	12.6	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	5.1	4.9	18.2	13.8	2.9	12.4	13.5	7.9	15.7	16.2
LnGrp Delay(d),s/veh	38.2	0.0	44.6	42.2	107.7	95.4	50.6	46.6	24.2	66.6	52.5	52.2
LnGrp LOS	D		D	D	F	F	D	D	C	E	D	D
Approach Vol, veh/h		213			1027			1650			1335	
Approach Delay, s/veh		43.2			82.7			41.2			56.9	
Approach LOS		D			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		30.0	18.3	40.6		29.0	21.4	37.5
Change Period (Y+Rc), s		5.0	5.0	6.5		5.5	5.0	6.5
Max Green Setting (Gmax), s		25.0	10.0	39.5		23.5	17.0	32.5
Max Q Clear Time (g_c+I1), s		12.0	7.8	30.4		25.5	16.3	27.2
Green Ext Time (p_c), s		0.9	0.0	3.6		0.0	0.2	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	56.3
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
1: LOVR & Madonna

Mitigated Near Term Plus Project PM 2025
04/11/2018

Central Coast Transportation Consulting

Synchro 10 Report

Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	913	1	30	18	1047	8	164	4	0	38	113
Future Volume (vph)	15	913	1	30	18	1047	8	164	4	0	38	113
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	1.00	0.95			1.00	0.95	1.00			1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00	1.00	0.97			1.00	0.98	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00			1.00	1.00	
Frt	1.00	1.00			1.00	1.00	0.85			1.00	0.85	
Flt Protected	0.95	1.00			0.95	1.00	1.00			0.95	1.00	
Satd. Flow (prot)	1766	3539			1770	3539	1534			1761	1556	
Flt Permitted	0.95	1.00			0.95	1.00	1.00			0.76	1.00	
Satd. Flow (perm)	1766	3539			1770	3539	1534			1418	1556	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	992	1	33	20	1138	9	178	4	0	41	123
RTOR Reduction (vph)	0	0	0	0	0	0	97	0	0	0	35	0
Lane Group Flow (vph)	16	993	0	0	53	1138	90	0	0	4	6	0
Confl. Peds. (#/hr)	6		9				6		6		5	5
Turn Type	Prot	NA		Prot	Prot	NA	Perm		Perm	NA	Perm	Perm
Protected Phases	5	2		1	1	6				8		
Permitted Phases							6		8		8	4
Actuated Green, G (s)	0.5	25.4			2.2	27.1	27.1			8.8	8.8	
Effective Green, g (s)	0.5	25.4			2.2	27.1	27.1			8.8	8.8	
Actuated g/C Ratio	0.01	0.43			0.04	0.45	0.45			0.15	0.15	
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)	14	1505			65	1606	696			209	229	
v/s Ratio Prot	0.01	0.28			c0.03	c0.32						
v/s Ratio Perm							0.06			0.00	0.00	
v/c Ratio	1.14	0.66			0.82	0.71	0.13			0.02	0.03	
Uniform Delay, d1	29.6	13.7			28.5	13.1	9.5			21.8	21.8	
Progression Factor	1.00	1.00			1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2	291.3	1.1			52.3	1.5	0.1			0.0	0.0	
Delay (s)	320.9	14.8			80.8	14.6	9.5			21.8	21.8	
Level of Service	F	B			F	B	A			C	C	
Approach Delay (s)		19.6				16.4				21.8		
Approach LOS		B				B				C		

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis Mitigated Near Term Plus Project PM 2025
2: Oceanaire & Madonna 04/11/2018

Movement	SBT	SBR	SBR2	SEL	SER2	NEL2	NEL	NER
Lane Configurations								
Traffic Volume (vph)	0	2	16	1	4	1	2	23
Future Volume (vph)	0	2	16	1	4	1	2	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0			4.0	
Lane Util. Factor	1.00			1.00			1.00	
Frpb, ped/bikes	1.00			0.98			0.99	
Flpb, ped/bikes	1.00			1.00			1.00	
Frt	0.98			0.89			0.88	
Flt Protected	0.96			0.99			0.99	
Satd. Flow (prot)	1740			1603			1609	
Flt Permitted	0.75			0.99			0.99	
Satd. Flow (perm)	1365			1603			1609	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2	17	1	4	1	2	25
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	142	0	0	5	0	0	28	0
Confl. Peds. (#/hr)		1		5	6	6		1
Turn Type	NA			Prot		Perm	Prot	
Protected Phases	4			7			3	
Permitted Phases						3		
Actuated Green, G (s)	8.8			0.9			2.4	
Effective Green, g (s)	8.8			0.9			2.4	
Actuated g/C Ratio	0.15			0.02			0.04	
Clearance Time (s)	4.0			4.0			4.0	
Vehicle Extension (s)	3.0			3.0			3.0	
Lane Grp Cap (vph)	201			24			64	
v/s Ratio Prot				c0.00				
v/s Ratio Perm	c0.10						0.02	
v/c Ratio	0.71			0.21			0.44	
Uniform Delay, d1	24.2			29.0			28.0	
Progression Factor	1.00			1.00			1.00	
Incremental Delay, d2	10.8			4.3			4.7	
Delay (s)	35.0			33.3			32.7	
Level of Service	C			C			C	
Approach Delay (s)	35.0			33.3			32.7	
Approach LOS	C			C			C	

Intersection Summary

HCM 2010 methodology does not support more than 4 approaches.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	897	244	395	1040	25	223	1	376	29	9	22
Future Volume (vph)	35	897	244	395	1040	25	223	1	376	29	9	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0			4.0	6.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.99		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	1533	3433	3523			1774	1564		1794	1528
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	1533	3433	3523			1774	1564		1794	1528
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	36	925	252	407	1072	26	230	1	388	30	9	23
RTOR Reduction (vph)	0	0	75	0	1	0	0	0	263	0	0	21
Lane Group Flow (vph)	36	925	177	407	1097	0	0	231	125	0	39	2
Confl. Peds. (#/hr)	1		5	5		1	5		1	1		5
Confl. Bikes (#/hr)			22			22			10			6
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	2.2	29.1	29.1	10.4	37.3			15.8	26.2		6.2	6.2
Effective Green, g (s)	2.2	29.1	29.1	10.4	37.3			15.8	26.2		6.2	6.2
Actuated g/C Ratio	0.03	0.36	0.36	0.13	0.46			0.19	0.32		0.08	0.08
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			4.0	6.0		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)	47	1263	547	438	1612			343	502		136	116
v/s Ratio Prot	0.02	0.26		c0.12	c0.31			c0.13	0.03		c0.02	
v/s Ratio Perm			0.12						0.05			0.00
v/c Ratio	0.77	0.73	0.32	0.93	0.68			0.67	0.25		0.29	0.02
Uniform Delay, d1	39.4	22.8	19.1	35.2	17.4			30.5	20.4		35.6	34.8
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	52.3	2.2	0.3	25.9	1.2			5.1	0.3		1.2	0.1
Delay (s)	91.7	25.0	19.4	61.1	18.6			35.6	20.7		36.7	34.9
Level of Service	F	C	B	E	B			D	C		D	C
Approach Delay (s)		25.8			30.1			26.2			36.0	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.6%	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												
Traffic Volume (veh/h)	35	897	244	395	1040	25	223	1	376	29	9	22
Future Volume (veh/h)	35	897	244	395	1040	25	223	1	376	29	9	22
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.97	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	36	925	252	407	1072	26	230	1	388	30	9	23
Adj No. of Lanes	1	2	1	2	2	0	0	1	1	0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	1065	461	438	1412	34	471	2	613	70	21	75
Arrive On Green	0.03	0.30	0.30	0.13	0.40	0.40	0.27	0.27	0.27	0.05	0.05	0.05
Sat Flow, veh/h	1774	3539	1531	3442	3527	86	1767	8	1543	1380	414	1479
Grp Volume(v), veh/h	36	925	252	407	538	560	231	0	388	39	0	23
Grp Sat Flow(s),veh/h/ln	1774	1770	1531	1721	1770	1843	1774	0	1543	1794	0	1479
Q Serve(g_s), s	1.6	19.5	10.8	9.2	20.6	20.6	8.6	0.0	16.0	1.7	0.0	1.2
Cycle Q Clear(g_c), s	1.6	19.5	10.8	9.2	20.6	20.6	8.6	0.0	16.0	1.7	0.0	1.2
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	0.77		1.00
Lane Grp Cap(c), veh/h	49	1065	461	438	708	738	474	0	613	91	0	75
V/C Ratio(X)	0.73	0.87	0.55	0.93	0.76	0.76	0.49	0.00	0.63	0.43	0.00	0.31
Avail Cap(c_a), veh/h	90	1125	487	438	708	738	632	0	750	502	0	414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.0	26.0	23.0	34.0	20.3	20.3	24.3	0.0	19.3	36.2	0.0	36.0
Incr Delay (d2), s/veh	18.8	7.2	1.1	26.5	4.8	4.6	0.8	0.0	1.2	3.1	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	10.6	4.7	6.0	10.9	11.4	4.3	0.0	7.0	0.9	0.0	0.5
LnGrp Delay(d),s/veh	56.7	33.2	24.2	60.5	25.1	24.9	25.1	0.0	20.5	39.4	0.0	38.3
LnGrp LOS	E	C	C	E	C	C	C		C	D		D
Approach Vol, veh/h		1213			1505			619			62	
Approach Delay, s/veh		32.0			34.6			22.2			39.0	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	29.7		8.0	8.2	37.5		25.0
Change Period (Y+Rc), s	6.0	6.0		4.0	6.0	6.0		4.0
Max Green Setting (Gmax), s	10.0	25.0		22.0	4.0	31.0		28.0
Max Q Clear Time (g_c+I1), s	11.2	21.5		3.7	3.6	22.6		18.0
Green Ext Time (p_c), s	0.0	2.2		0.2	0.0	4.3		2.6

Intersection Summary			
HCM 2010 Ctrl Delay		31.5	
HCM 2010 LOS		C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	1255	212	185	999	17	584	10	300	20	12	19
Future Volume (vph)	24	1255	212	185	999	17	584	10	300	20	12	19
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	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		0.99	0.99	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	5085	1441	1770	5068		1545	1551	1456	1681	1749	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.75	0.72	1.00	0.22	0.58	1.00
Satd. Flow (perm)	1770	5085	1441	1770	5068		1212	1171	1456	393	1033	1548
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	25	1307	221	193	1041	18	608	10	312	21	12	20
RTOR Reduction (vph)	0	0	83	0	2	0	0	0	197	0	0	16
Lane Group Flow (vph)	25	1307	138	193	1057	0	310	308	116	17	17	4
Confl. Peds. (#/hr)	2		12	12		2	5					5
Confl. Bikes (#/hr)			27			23			1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	10%	10%	10%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases			2				8		8	4		4
Actuated Green, G (s)	2.0	29.0	29.0	12.0	39.0		25.0	25.0	37.0	18.0	18.0	18.0
Effective Green, g (s)	2.0	29.0	29.0	12.0	39.0		25.0	25.0	37.0	18.0	18.0	18.0
Actuated g/C Ratio	0.02	0.29	0.29	0.12	0.39		0.25	0.25	0.37	0.18	0.18	0.18
Clearance Time (s)	4.0	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	3.0
Lane Grp Cap (vph)	35	1474	417	212	1976		303	292	596	70	185	278
v/s Ratio Prot	0.01	c0.26		c0.11	0.21				0.02			
v/s Ratio Perm			0.10				0.26	c0.26	0.06	c0.04	0.02	0.00
v/c Ratio	0.71	0.89	0.33	0.91	0.54		1.02	1.05	0.19	0.24	0.09	0.01
Uniform Delay, d1	48.7	33.9	27.9	43.5	23.5		37.5	37.5	21.4	35.2	34.2	33.7
Progression Factor	1.00	1.00	1.00	1.07	0.34		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	51.0	8.2	2.1	28.6	0.7		57.8	67.8	0.2	8.1	1.0	0.1
Delay (s)	99.7	42.2	30.0	75.0	8.8		95.3	105.3	21.5	43.2	35.2	33.8
Level of Service	F	D	C	E	A		F	F	C	D	D	C
Approach Delay (s)		41.4			19.0			73.8			37.2	
Approach LOS		D			B			E			D	

Intersection Summary					
HCM 2000 Control Delay		41.9	HCM 2000 Level of Service		D
HCM 2000 Volume to Capacity ratio		0.80			
Actuated Cycle Length (s)		100.0	Sum of lost time (s)		16.0
Intersection Capacity Utilization		67.6%	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												
Traffic Volume (veh/h)	24	1255	212	185	999	17	584	10	300	20	12	19
Future Volume (veh/h)	24	1255	212	185	999	17	584	10	300	20	12	19
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.94	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1727	1727	1727	1863	1863	1863
Adj Flow Rate, veh/h	25	1307	221	193	1041	18	615	0	312	16	18	20
Adj No. of Lanes	1	3	1	1	3	0	2	0	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	10	10	10	2	2	2
Cap, veh/h	479	2594	766	213	1851	32	755	0	536	337	466	388
Arrive On Green	0.27	0.51	0.51	0.24	0.72	0.72	0.25	0.00	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1774	5085	1503	1774	5142	89	2516	0	1441	1059	1863	1554
Grp Volume(v), veh/h	25	1307	221	193	686	373	615	0	312	16	18	20
Grp Sat Flow(s),veh/h/ln	1774	1695	1503	1774	1695	1840	1258	0	1441	1059	1863	1554
Q Serve(g_s), s	1.0	17.0	8.4	10.6	9.5	9.5	24.3	0.0	17.4	1.2	0.7	1.0
Cycle Q Clear(g_c), s	1.0	17.0	8.4	10.6	9.5	9.5	25.0	0.0	17.4	1.2	0.7	1.0
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	479	2594	766	213	1220	663	755	0	536	337	466	388
V/C Ratio(X)	0.05	0.50	0.29	0.91	0.56	0.56	0.82	0.00	0.58	0.05	0.04	0.05
Avail Cap(c_a), veh/h	479	2594	766	213	1220	663	755	0	536	337	466	388
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.57	0.57	0.57	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	16.2	14.1	37.5	10.3	10.3	38.0	0.0	25.3	28.6	28.4	28.5
Incr Delay (d2), s/veh	0.0	0.7	0.9	25.0	1.1	2.0	9.4	0.0	4.6	0.3	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	8.0	3.7	6.6	4.4	4.9	9.4	0.0	7.6	0.4	0.4	0.4
LnGrp Delay(d),s/veh	27.1	16.9	15.0	62.4	11.4	12.3	47.4	0.0	29.9	28.8	28.6	28.7
LnGrp LOS	C	B	B	E	B	B	D		C	C	C	C
Approach Vol, veh/h		1553			1252			927			54	
Approach Delay, s/veh		16.8			19.5			41.5			28.7	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	55.0		29.0	31.0	40.0		29.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	29.0		18.0	5.0	36.0		25.0
Max Q Clear Time (g_c+I1), s	12.6	19.0		3.2	3.0	11.5		27.0
Green Ext Time (p_c), s	0.0	6.5		0.1	0.0	7.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
5: Hwy 101 SB/Madonna Inn & Madonna

Mitigated Near Term Plus Project PM 2025
04/11/2018

Central Coast Transportation Consulting

Synchro 10 Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	640	935	0	0	1057	175	144	3	126	0	0	0
Future Volume (vph)	640	935	0	0	1057	175	144	3	126	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				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frpb, ped/bikes	1.00	1.00			1.00		1.00	0.98				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.85				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3453		1641	1451				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3453		1641	1451				
Peak-hour factor, PHF	0.97	0.97	0.92	0.92	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92
Adj. Flow (vph)	660	964	0	0	1090	180	148	3	130	0	0	0
RTOR Reduction (vph)	0	0	0	0	13	0	0	113	0	0	0	0
Lane Group Flow (vph)	660	964	0	0	1257	0	148	20	0	0	0	0
Confl. Peds. (#/hr)			11	11					2	2		
Confl. Bikes (#/hr)			25			23						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	10%	10%	10%	10%	10%	10%
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	27.0	78.6			47.6		13.4	13.4				
Effective Green, g (s)	27.0	78.6			47.6		13.4	13.4				
Actuated g/C Ratio	0.27	0.79			0.48		0.13	0.13				
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	926	2781			1643		219	194				
v/s Ratio Prot	c0.19	0.27			c0.36		c0.09	0.01				
v/s Ratio Perm												
v/c Ratio	0.71	0.35			0.77		0.68	0.11				
Uniform Delay, d1	33.0	3.1			21.6		41.2	38.0				
Progression Factor	0.41	0.82			0.73		1.00	1.00				
Incremental Delay, d2	1.6	0.2			3.0		8.0	0.2				
Delay (s)	15.2	2.8			18.8		49.2	38.3				
Level of Service	B	A			B		D	D				
Approach Delay (s)		7.8			18.8			44.0			0.0	
Approach LOS		A			B			D			A	

Intersection Summary				
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	71.6%	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												
Traffic Volume (veh/h)	640	935	0	0	1057	175	144	3	126	0	0	0
Future Volume (veh/h)	640	935	0	0	1057	175	144	3	126	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1727	1727	1900			
Adj Flow Rate, veh/h	660	964	0	0	1090	180	148	3	130			
Adj No. of Lanes	2	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.97	0.97	0.92	0.92	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	10	10	10			
Cap, veh/h	1082	2846	0	0	1364	225	190	4	166			
Arrive On Green	0.63	1.00	0.00	0.00	0.30	0.30	0.12	0.12	0.12			
Sat Flow, veh/h	3442	3632	0	0	3124	499	1645	33	1433			
Grp Volume(v), veh/h	660	964	0	0	635	635	148	0	133			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1761	1645	0	1466			
Q Serve(g_s), s	11.6	0.0	0.0	0.0	33.0	33.2	8.7	0.0	8.8			
Cycle Q Clear(g_c), s	11.6	0.0	0.0	0.0	33.0	33.2	8.7	0.0	8.8			
Prop In Lane	1.00		0.00	0.00		0.28	1.00		0.98			
Lane Grp Cap(c), veh/h	1082	2846	0	0	796	792	190	0	170			
V/C Ratio(X)	0.61	0.34	0.00	0.00	0.80	0.80	0.78	0.00	0.78			
Avail Cap(c_a), veh/h	1082	2846	0	0	796	792	263	0	235			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00			
Upstream Filter(I)	0.51	0.51	0.00	0.00	0.78	0.78	1.00	0.00	1.00			
Uniform Delay (d), s/veh	14.9	0.0	0.0	0.0	30.7	30.8	43.0	0.0	43.0			
Incr Delay (d2), s/veh	0.5	0.2	0.0	0.0	6.4	6.6	9.5	0.0	11.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.4	0.1	0.0	0.0	17.5	17.6	4.5	0.0	4.1			
LnGrp Delay(d),s/veh	15.4	0.2	0.0	0.0	37.2	37.4	52.4	0.0	54.1			
LnGrp LOS	B	A			D	D	D		D			
Approach Vol, veh/h		1624			1270			281				
Approach Delay, s/veh		6.4			37.3			53.2				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		84.4			35.4	49.0		15.6
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		76.0			27.0	45.0		16.0
Max Q Clear Time (g_c+I1), s		2.0			13.6	35.2		10.8
Green Ext Time (p_c), s		8.5			2.7	5.6		0.6

Intersection Summary			
HCM 2010 Ctrl Delay	22.9		
HCM 2010 LOS	C		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	624	20	382	10	94	10	427	609	13	10	537	749
Future Volume (vph)	624	20	382	10	94	10	427	609	13	10	537	749
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	0.95	0.95	1.00	1.00	1.00		0.97	1.00			0.95	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1690	1571	1770	1830		3433	1854			3535	2749
Flt Permitted	0.95	0.96	1.00	0.95	1.00		0.95	1.00			0.94	1.00
Satd. Flow (perm)	1681	1690	1571	1770	1830		3433	1854			3325	2749
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	671	22	411	11	101	11	459	655	14	11	577	805
RTOR Reduction (vph)	0	0	215	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	349	344	196	11	108	0	459	668	0	0	588	805
Confl. Peds. (#/hr)			1	1			4		10	10		
Confl. Bikes (#/hr)						8			21			12
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Perm	NA	pm+ov
Protected Phases	8	8	1	4	4		1	6			2	8
Permitted Phases			8							2		2
Actuated Green, G (s)	27.8	27.8	47.6	11.1	11.1		19.8	49.1			25.3	53.1
Effective Green, g (s)	27.8	27.8	47.6	11.1	11.1		19.8	49.1			25.3	53.1
Actuated g/C Ratio	0.28	0.28	0.48	0.11	0.11		0.20	0.49			0.25	0.53
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)	467	469	810	196	203		679	910			841	1459
v/s Ratio Prot	c0.21	0.20	0.05	0.01	c0.06		0.13	c0.36				0.15
v/s Ratio Perm			0.08								0.18	0.14
v/c Ratio	0.75	0.73	0.24	0.06	0.53		0.68	0.73			0.70	0.55
Uniform Delay, d1	32.9	32.7	15.5	39.8	42.0		37.1	20.3			33.9	15.6
Progression Factor	1.27	1.27	1.38	1.00	1.00		1.00	1.00			0.80	0.83
Incremental Delay, d2	10.0	9.3	0.1	0.1	2.5		2.7	3.1			2.2	0.4
Delay (s)	51.9	51.1	21.5	39.9	44.5		39.8	23.4			29.4	13.3
Level of Service	D	D	C	D	D		D	C			C	B
Approach Delay (s)		40.3			44.1			30.0			20.1	
Approach LOS		D			D			C			C	

Intersection Summary				
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	82.5%	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												
Traffic Volume (veh/h)	624	20	382	10	94	10	427	609	13	10	537	749
Future Volume (veh/h)	624	20	382	10	94	10	427	609	13	10	537	749
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.95	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	687	0	0	11	101	11	459	655	14	11	577	805
Adj No. of Lanes	2	0	1	1	1	0	2	1	0	0	2	2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	710	0	578	470	437	48	567	753	16	43	714	1105
Arrive On Green	0.20	0.00	0.00	0.27	0.27	0.27	0.16	0.41	0.41	0.07	0.07	0.07
Sat Flow, veh/h	3548	0	1583	1774	1647	179	3442	1815	39	25	3398	2608
Grp Volume(v), veh/h	687	0	0	11	0	112	459	0	669	312	276	805
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1827	1721	0	1853	1813	1610	1304
Q Serve(g_s), s	19.2	0.0	0.0	0.5	0.0	4.8	12.9	0.0	33.0	4.4	16.9	21.0
Cycle Q Clear(g_c), s	19.2	0.0	0.0	0.5	0.0	4.8	12.9	0.0	33.0	16.9	16.9	21.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.02	0.04		1.00
Lane Grp Cap(c), veh/h	710	0	578	470	0	484	567	0	769	418	338	1105
V/C Ratio(X)	0.97	0.00	0.00	0.02	0.00	0.23	0.81	0.00	0.87	0.75	0.81	0.73
Avail Cap(c_a), veh/h	710	0	578	470	0	484	929	0	964	418	338	1105
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.95	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	39.7	0.0	0.0	27.2	0.0	28.8	40.2	0.0	26.8	44.5	44.6	27.8
Incr Delay (d2), s/veh	26.0	0.0	0.0	0.0	0.0	0.2	2.8	0.0	7.3	6.2	12.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	0.0	0.2	0.0	2.5	6.3	0.0	18.5	9.2	8.7	11.5
LnGrp Delay(d),s/veh	65.6	0.0	0.0	27.2	0.0	29.0	43.0	0.0	34.0	50.7	56.8	29.9
LnGrp LOS	E			C		C	D		C	D	E	C
Approach Vol, veh/h		687			123			1128			1393	
Approach Delay, s/veh		65.6			28.8			37.7			39.9	
Approach LOS		E			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	20.5	25.0		30.5		45.5		24.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	27.0	21.0		16.0		52.0		20.0
Max Q Clear Time (g_c+I1), s	14.9	23.0		6.8		35.0		21.2
Green Ext Time (p_c), s	1.6	0.0		0.4		4.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay	44.1		
HCM 2010 LOS	D		

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	43	1721	38	27	1502
Future Volume (vph)	40	43	1721	38	27	1502
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	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1524	1768	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.09	1.00
Satd. Flow (perm)	1770	1583	3539	1524	176	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	47	1871	41	29	1633
RTOR Reduction (vph)	0	14	0	4	0	0
Lane Group Flow (vph)	43	33	1871	37	29	1633
Confl. Peds. (#/hr)				10	10	
Confl. Bikes (#/hr)				2		
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	4.1	4.1	42.3	42.3	42.3	42.3
Effective Green, g (s)	4.1	4.1	42.3	42.3	42.3	42.3
Actuated g/C Ratio	0.08	0.08	0.78	0.78	0.78	0.78
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)	133	119	2751	1185	136	2751
v/s Ratio Prot	c0.02		c0.53			0.46
v/s Ratio Perm		0.02		0.02	0.16	
v/c Ratio	0.32	0.28	0.68	0.03	0.21	0.59
Uniform Delay, d1	23.8	23.8	2.9	1.4	1.6	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	1.3	0.7	0.0	0.8	0.3
Delay (s)	25.3	25.0	3.6	1.4	2.4	2.8
Level of Service	C	C	A	A	A	A
Approach Delay (s)	25.1		3.5			2.8
Approach LOS	C		A			A

Intersection Summary				
HCM 2000 Control Delay	3.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	40	43	1721	38	27	1502		
Future Volume (veh/h)	40	43	1721	38	27	1502		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	43	47	1871	41	29	1633		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	112	100	2603	1132	284	2603		
Arrive On Green	0.06	0.06	0.74	0.74	0.74	0.74		
Sat Flow, veh/h	1774	1583	3632	1540	234	3632		
Grp Volume(v), veh/h	43	47	1871	41	29	1633		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1540	234	1770		
Q Serve(g_s), s	0.9	1.1	11.8	0.3	3.2	9.0		
Cycle Q Clear(g_c), s	0.9	1.1	11.8	0.3	15.0	9.0		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	112	100	2603	1132	284	2603		
V/C Ratio(X)	0.38	0.47	0.72	0.04	0.10	0.63		
Avail Cap(c_a), veh/h	713	637	3202	1393	323	3202		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.9	18.0	3.0	1.4	7.1	2.6		
Incr Delay (d2), s/veh	2.1	3.4	0.6	0.0	0.2	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	0.6	5.7	0.1	0.2	4.2		
LnGrp Delay(d),s/veh	20.0	21.4	3.6	1.4	7.3	2.9		
LnGrp LOS	C	C	A	A	A	A		
Approach Vol, veh/h	90		1912			1662		
Approach Delay, s/veh	20.7		3.5			2.9		
Approach LOS	C		A			A		

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		33.3				33.3		6.5
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		36.0				36.0		16.0
Max Q Clear Time (g_c+I1), s		13.8				17.0		3.1
Green Ext Time (p_c), s		15.1				12.3		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		3.7
HCM 2010 LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	4	46	120	10	69	44	1616	62	46	1417	27
Future Volume (vph)	20	4	46	120	10	69	44	1616	62	46	1417	27
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	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1765	1863	1583	1770	1597		1770	3539	1524	1770	3539	1564
Flt Permitted	0.70	1.00	1.00	0.76	1.00		0.11	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1309	1863	1583	1407	1597		211	3539	1524	206	3539	1564
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	21	4	47	124	10	71	45	1666	64	47	1461	28
RTOR Reduction (vph)	0	0	41	0	62	0	0	0	20	0	0	9
Lane Group Flow (vph)	21	4	6	124	19	0	45	1666	44	47	1461	19
Confl. Peds. (#/hr)	2					2			5	5		
Confl. Bikes (#/hr)									10			1
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6		6	2		2
Actuated Green, G (s)	10.6	10.6	10.6	10.6	10.6		54.9	54.9	54.9	54.2	54.2	54.2
Effective Green, g (s)	10.6	10.6	10.6	10.6	10.6		54.9	54.9	54.9	54.2	54.2	54.2
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13		0.69	0.69	0.69	0.68	0.68	0.68
Clearance Time (s)	4.0	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	3.0
Lane Grp Cap (vph)	173	246	209	186	211		207	2428	1045	188	2397	1059
v/s Ratio Prot		0.00			0.01		0.01	c0.47		0.01	c0.41	
v/s Ratio Perm	0.02		0.00	c0.09			0.14		0.03	0.16		0.01
v/c Ratio	0.12	0.02	0.03	0.67	0.09		0.22	0.69	0.04	0.25	0.61	0.02
Uniform Delay, d1	30.6	30.2	30.2	33.0	30.5		6.7	7.4	4.1	11.2	7.1	4.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.1	8.7	0.2		0.5	1.6	0.1	0.7	1.2	0.0
Delay (s)	30.9	30.2	30.3	41.7	30.7		7.2	9.0	4.1	11.9	8.3	4.2
Level of Service	C	C	C	D	C		A	A	A	B	A	A
Approach Delay (s)		30.5			37.4			8.8			8.3	
Approach LOS		C			D			A			A	

Intersection Summary				
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	64.7%	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												
Traffic Volume (veh/h)	20	4	46	120	10	69	44	1616	62	46	1417	27
Future Volume (veh/h)	20	4	46	120	10	69	44	1616	62	46	1417	27
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	21	4	0	124	10	71	45	1666	64	47	1461	28
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	227	193	258	24	171	254	2124	921	379	2466	1087
Arrive On Green	0.12	0.12	0.00	0.12	0.12	0.12	0.03	0.60	0.60	0.13	0.70	0.70
Sat Flow, veh/h	1307	1863	1583	1400	198	1408	1774	3539	1535	1774	3539	1560
Grp Volume(v), veh/h	21	4	0	124	0	81	45	1666	64	47	1461	28
Grp Sat Flow(s),veh/h/ln	1307	1863	1583	1400	0	1606	1774	1770	1535	1774	1770	1560
Q Serve(g_s), s	1.2	0.2	0.0	6.8	0.0	3.7	0.9	28.5	1.4	0.0	17.1	0.4
Cycle Q Clear(g_c), s	4.9	0.2	0.0	7.0	0.0	3.7	0.9	28.5	1.4	0.0	17.1	0.4
Prop In Lane	1.00		1.00	1.00		0.88	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	227	193	258	0	196	254	2124	921	379	2466	1087
V/C Ratio(X)	0.11	0.02	0.00	0.48	0.00	0.41	0.18	0.78	0.07	0.12	0.59	0.03
Avail Cap(c_a), veh/h	290	373	317	367	0	321	286	2124	921	379	2466	1087
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	30.9	0.0	34.0	0.0	32.5	10.0	12.1	6.7	20.5	6.3	3.7
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.4	0.0	1.4	0.2	2.2	0.1	0.1	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.0	2.8	0.0	1.7	0.4	14.3	0.6	0.8	8.5	0.2
LnGrp Delay(d),s/veh	35.0	31.0	0.0	35.4	0.0	33.9	10.3	14.2	6.8	20.6	7.3	3.8
LnGrp LOS	D	C		D		C	B	B	A	C	A	A
Approach Vol, veh/h		25			205			1775			1536	
Approach Delay, s/veh		34.4			34.8			13.9			7.7	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	59.7		13.7	14.3	52.0		13.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	4.0	48.0		16.0
Max Q Clear Time (g_c+I1), s	2.9	19.1		9.0	2.0	30.5		6.9
Green Ext Time (p_c), s	0.0	13.0		0.5	0.0	12.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	12.5	
HCM 2010 LOS	B	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	512	108	190	942	777	312
Future Volume (vph)	512	108	190	942	777	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5	6.0	6.0	3.5
Lane Util. Factor	0.97		1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	3134		1770	3539	3539	1558
Flt Permitted	0.96		0.95	1.00	1.00	1.00
Satd. Flow (perm)	3134		1770	3539	3539	1558
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	545	115	202	1002	827	332
RTOR Reduction (vph)	18	0	0	0	0	99
Lane Group Flow (vph)	642	0	202	1002	827	233
Confl. Peds. (#/hr)	3					
Confl. Bikes (#/hr)						8
Heavy Vehicles (%)	10%	10%	2%	2%	2%	2%
Turn Type	Prot		Prot	NA	NA	pm+ov
Protected Phases	3		1	6	2	3
Permitted Phases						2
Actuated Green, G (s)	23.6		16.7	66.9	46.7	70.3
Effective Green, g (s)	23.6		16.7	66.9	46.7	70.3
Actuated g/C Ratio	0.24		0.17	0.67	0.47	0.70
Clearance Time (s)	3.5		3.5	6.0	6.0	3.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	739		295	2367	1652	1095
v/s Ratio Prot	c0.20		c0.11	0.28	c0.23	0.05
v/s Ratio Perm						0.10
v/c Ratio	0.87		0.68	0.42	0.50	0.21
Uniform Delay, d1	36.7		39.2	7.6	18.5	5.2
Progression Factor	1.00		1.00	1.00	0.82	5.42
Incremental Delay, d2	10.6		6.4	0.6	1.0	0.1
Delay (s)	47.3		45.6	8.2	16.2	28.2
Level of Service	D		D	A	B	C
Approach Delay (s)	47.3			14.5	19.7	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 methodology does not support exclusive ped or hold phases.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	504	165	848	200	155	1199
Future Volume (vph)	504	165	848	200	155	1199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		6.0		6.0	6.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frpb, ped/bikes	0.99		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.96		0.97		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3324		3421		1770	3539
Flt Permitted	0.96		1.00		0.20	1.00
Satd. Flow (perm)	3324		3421		374	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	531	174	893	211	163	1262
RTOR Reduction (vph)	47	0	26	0	0	0
Lane Group Flow (vph)	658	0	1078	0	163	1262
Confl. Peds. (#/hr)		9				
Confl. Bikes (#/hr)		3		8		
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	18.7		36.5		36.5	36.5
Effective Green, g (s)	18.7		36.5		36.5	36.5
Actuated g/C Ratio	0.28		0.55		0.55	0.55
Clearance Time (s)	5.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	938		1886		206	1951
v/s Ratio Prot	c0.20		0.31			0.36
v/s Ratio Perm					c0.44	
v/c Ratio	0.70		0.57		0.79	0.65
Uniform Delay, d1	21.3		9.7		11.8	10.4
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	2.4		0.4		18.4	0.7
Delay (s)	23.7		10.1		30.3	11.1
Level of Service	C		B		C	B
Approach Delay (s)	23.7		10.1			13.3
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	66.2	Sum of lost time (s)	11.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	504	165	848	200	155	1199
Future Volume (veh/h)	504	165	848	200	155	1199
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1863	1863
Adj Flow Rate, veh/h	352	365	893	211	163	1262
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	483	440	1606	379	292	2011
Arrive On Green	0.27	0.27	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1774	1615	2920	667	509	3632
Grp Volume(v), veh/h	352	365	559	545	163	1262
Grp Sat Flow(s),veh/h/ln	1774	1615	1770	1725	509	1770
Q Serve(g_s), s	12.4	14.6	13.7	13.8	20.5	16.5
Cycle Q Clear(g_c), s	12.4	14.6	13.7	13.8	34.3	16.5
Prop In Lane	1.00	1.00		0.39	1.00	
Lane Grp Cap(c), veh/h	483	440	1005	980	292	2011
V/C Ratio(X)	0.73	0.83	0.56	0.56	0.56	0.63
Avail Cap(c_a), veh/h	618	562	1027	1001	298	2054
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	23.6	9.4	9.4	20.2	10.0
Incr Delay (d2), s/veh	3.2	8.1	0.6	0.7	2.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	7.5	6.9	6.7	3.0	8.1
LnGrp Delay(d),s/veh	25.9	31.7	10.0	10.1	22.5	10.6
LnGrp LOS	C	C	B	B	C	B
Approach Vol, veh/h	717		1104			1425
Approach Delay, s/veh	28.9		10.0			11.9
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		45.2				45.2		23.8
Change Period (Y+Rc), s		6.0				6.0		5.0
Max Green Setting (Gmax), s		40.0				40.0		24.0
Max Q Clear Time (g_c+I1), s		15.8				36.3		16.6
Green Ext Time (p_c), s		7.6				2.9		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
15: Higuera & Suburban

Mitigated Near Term Plus Project PM 2025
04/11/2018

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	10	20	714	20	331	40	595	473	282	690	30
Future Volume (vph)	10	10	20	714	20	331	40	595	473	282	690	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5	4.5	3.5	4.5	4.5	3.5	4.5	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1542	1681	1690	1560	1770	3539	1570	1770	3511	
Flt Permitted		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1817	1542	1681	1690	1560	1770	3539	1570	1770	3511	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	21	744	21	345	42	620	493	294	719	31
RTOR Reduction (vph)	0	0	20	0	0	248	0	0	228	0	2	0
Lane Group Flow (vph)	0	20	1	379	386	97	42	620	265	294	748	0
Confl. Peds. (#/hr)	1		7	7		1	9		1	1		9
Confl. Bikes (#/hr)			2			2			12			12
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		6.3	6.3	27.0	27.0	27.0	3.7	24.5	51.5	21.0	41.8	
Effective Green, g (s)		6.3	6.3	27.0	27.0	27.0	3.7	24.5	51.5	21.0	41.8	
Actuated g/C Ratio		0.07	0.07	0.28	0.28	0.28	0.04	0.26	0.54	0.22	0.44	
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5	3.5	4.5	4.5	3.5	4.5	
Vehicle Extension (s)		2.0	2.0	2.0	2.0	2.0	2.0	5.0	2.0	3.5	5.0	
Lane Grp Cap (vph)		119	101	473	476	439	68	905	843	387	1531	
v/s Ratio Prot		c0.01		0.23	c0.23		0.02	c0.18	0.09	c0.17	0.21	
v/s Ratio Perm			0.00			0.06			0.08			
v/c Ratio		0.17	0.01	0.80	0.81	0.22	0.62	0.69	0.31	0.76	0.49	
Uniform Delay, d1		42.3	41.8	31.9	32.0	26.3	45.4	32.2	12.3	35.0	19.3	
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		0.2	0.0	8.9	9.6	0.1	11.2	2.8	0.1	8.6	0.5	
Delay (s)		42.5	41.9	40.8	41.6	26.4	56.5	35.0	12.4	43.6	19.9	
Level of Service		D	D	D	D	C	E	C	B	D	B	
Approach Delay (s)		42.2			36.6			26.1			26.5	
Approach LOS		D			D			C			C	

Intersection Summary				
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	95.8	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	70.0%	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												
Traffic Volume (veh/h)	10	10	20	714	20	331	40	595	473	282	690	30
Future Volume (veh/h)	10	10	20	714	20	331	40	595	473	282	690	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	10	21	759	0	0	42	620	493	294	719	31
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	48	79	895	0	399	52	1029	846	343	1568	68
Arrive On Green	0.05	0.05	0.05	0.25	0.00	0.00	0.03	0.29	0.29	0.19	0.45	0.45
Sat Flow, veh/h	909	909	1491	3548	0	1583	1774	3539	1536	1774	3450	149
Grp Volume(v), veh/h	20	0	21	759	0	0	42	620	493	294	369	381
Grp Sat Flow(s),veh/h/ln	1817	0	1491	1774	0	1583	1774	1770	1536	1774	1770	1829
Q Serve(g_s), s	0.9	0.0	1.1	16.4	0.0	0.0	1.9	12.2	17.4	12.9	11.6	11.6
Cycle Q Clear(g_c), s	0.9	0.0	1.1	16.4	0.0	0.0	1.9	12.2	17.4	12.9	11.6	11.6
Prop In Lane	0.50		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	97	0	79	895	0	399	52	1029	846	343	804	831
V/C Ratio(X)	0.21	0.00	0.26	0.85	0.00	0.00	0.80	0.60	0.58	0.86	0.46	0.46
Avail Cap(c_a), veh/h	608	0	499	1341	0	598	156	1083	869	457	842	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	36.7	28.7	0.0	0.0	38.9	24.6	12.4	31.5	15.2	15.2
Incr Delay (d2), s/veh	0.4	0.0	0.7	2.2	0.0	0.0	10.0	1.4	1.6	12.5	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.5	8.3	0.0	0.0	1.1	6.1	11.2	7.5	5.8	6.0
LnGrp Delay(d),s/veh	37.0	0.0	37.3	30.9	0.0	0.0	48.9	26.0	14.0	44.0	16.0	16.0
LnGrp LOS	D		D	C			D	C	B	D	B	B
Approach Vol, veh/h		41			759			1155			1044	
Approach Delay, s/veh		37.1			30.9			21.7			23.9	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.1	28.0		8.8	5.9	41.2		24.8
Change Period (Y+Rc), s	3.5	4.5		4.5	3.5	4.5		4.5
Max Green Setting (Gmax), s	20.8	24.7		27.0	7.1	38.4		30.5
Max Q Clear Time (g_c+I1), s	14.9	19.4		3.1	3.9	13.6		18.4
Green Ext Time (p_c), s	0.7	3.9		0.1	0.0	8.8		1.8

Intersection Summary		
HCM 2010 Ctrl Delay	25.0	
HCM 2010 LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.

Appendix B: SimTraffic Output Sheets

Near Term

Intersection: 1: LOVR & Madonna

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	TR	L	L	TR	R	L	T	T	T	R	L
Maximum Queue (ft)	147	199	95	118	112	93	100	168	188	200	155	163
Average Queue (ft)	62	89	36	49	49	26	32	73	97	105	42	79
95th Queue (ft)	122	165	75	98	91	62	79	138	160	174	105	144
Link Distance (ft)		317	320	320				373	373	373		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	230				170	170	200				175	350
Storage Blk Time (%)		0		0				0		1	0	
Queuing Penalty (veh)		0		0				0		1	0	

Intersection: 1: LOVR & Madonna

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	186	252	244
Average Queue (ft)	110	145	151
95th Queue (ft)	165	223	237
Link Distance (ft)		843	843
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	350		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Oceanaire & Madonna

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SE	NE
Directions Served	<L	T	TR	<L	T	T	R>	<LT	R	LTR>	<LR>	<LR
Maximum Queue (ft)	28	114	160	31	132	162	72	39	39	150	40	30
Average Queue (ft)	3	51	83	5	41	68	12	11	14	61	6	6
95th Queue (ft)	16	105	142	22	98	125	45	35	36	111	27	21
Link Distance (ft)		1699	1699		580	580		228		246	154	152
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	115			115			100		50			
Storage Blk Time (%)		0			0	2		1	0			
Queuing Penalty (veh)		0			0	1		0	0			

Intersection: 3: Dalidio & Madonna

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	TR	LT	R	LT	R
Maximum Queue (ft)	27	146	194	76	70	107	13	36	56	38	22
Average Queue (ft)	6	55	82	20	13	25	1	11	23	11	2
95th Queue (ft)	22	123	167	51	47	74	7	34	50	35	13
Link Distance (ft)		242	242		581	581	581	249		131	
Upstream Blk Time (%)			0								
Queuing Penalty (veh)			0								
Storage Bay Dist (ft)	112			275					150		50
Storage Blk Time (%)		1								0	
Queuing Penalty (veh)		0								0	

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	EB	EB	EB	EB	B305	B305	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	TR	T	T	L	T	T	TR	L	LT
Maximum Queue (ft)	157	326	360	401	18	56	207	65	82	62	144	147
Average Queue (ft)	20	176	194	263	1	3	96	7	17	11	108	88
95th Queue (ft)	80	281	316	387	13	26	164	34	56	41	142	147
Link Distance (ft)		355	355	355	632	632			976	976		
Upstream Blk Time (%)		0	0	3								
Queuing Penalty (veh)		1	1	12								
Storage Bay Dist (ft)	100						260	260				
Storage Blk Time (%)	0	27					0					
Queuing Penalty (veh)	0	4					0					

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	NB	SB	SB	SB
Directions Served	R	L	LT	R
Maximum Queue (ft)	154	13	20	14
Average Queue (ft)	122	1	2	2
95th Queue (ft)	154	7	11	9
Link Distance (ft)		222		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	275		100	100
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Hwy 101 NB & Madonna

Movement	EB	EB	EB	EB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	TR	L	TR
Maximum Queue (ft)	152	182	131	259	177	196	188	145
Average Queue (ft)	56	84	19	107	100	108	76	56
95th Queue (ft)	130	155	78	214	164	173	147	117
Link Distance (ft)		976	976	976	875	875		908
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	435						185	
Storage Blk Time (%)							0	0
Queuing Penalty (veh)							0	0

Intersection: 7: Higuera & Madonna/Shopping Center

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	TR	LT	T
Maximum Queue (ft)	140	290	255	47	65	181	143	173	182	194
Average Queue (ft)	65	154	60	11	15	84	51	70	98	98
95th Queue (ft)	124	256	221	38	44	155	106	134	157	163
Link Distance (ft)	875	875		85	85		302	302		
Upstream Blk Time (%)					0					
Queuing Penalty (veh)					0					
Storage Bay Dist (ft)			150			160			250	250
Storage Blk Time (%)		9	3			1	0			0
Queuing Penalty (veh)		48	10			2	0			0

Intersection: 10: LOVR & Autopark

Movement	WB	WB	NB	SB	B44	B44
Directions Served	L	R	R	L	T	T
Maximum Queue (ft)	66	24	15	50	134	304
Average Queue (ft)	17	9	1	13	4	15
95th Queue (ft)	47	25	8	40	95	186
Link Distance (ft)	259				717	717
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)		175	50	60		
Storage Blk Time (%)				0		
Queuing Penalty (veh)				1		

Queuing and Blocking Report
Near Term AM 2025
02/27/2018

Intersection: 11: LOVR & Calle Joaquin

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	24	17	50	108	33	92	210	205	64	63	181	246
Average Queue (ft)	6	1	4	37	9	23	47	55	6	20	66	112
95th Queue (ft)	21	7	28	81	29	61	143	152	47	48	157	231
Link Distance (ft)	325	325		395			224	224			194	194
Upstream Blk Time (%)							0	0			0	3
Queuing Penalty (veh)							1	0			0	13
Storage Bay Dist (ft)			260		150	115			105	115		
Storage Blk Time (%)				0			1	2			2	9
Queuing Penalty (veh)				0			1	1			1	2

Intersection: 11: LOVR & Calle Joaquin

Movement	SB	B25
Directions Served	R	T
Maximum Queue (ft)	88	66
Average Queue (ft)	4	4
95th Queue (ft)	39	36
Link Distance (ft)		967
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)	115	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: LOVR & 101 NB

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	L	T	T	T	T	R
Maximum Queue (ft)	400	449	182	119	127	426	459	195
Average Queue (ft)	212	274	93	53	62	159	197	54
95th Queue (ft)	370	426	161	103	114	318	367	181
Link Distance (ft)		1251		698	698	943	943	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	625		395					135
Storage Blk Time (%)							19	0
Queuing Penalty (veh)							19	0

Intersection: 15: Higuera & Suburban

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	138	88	220	330	161	123	148
Average Queue (ft)	75	35	81	208	73	40	53
95th Queue (ft)	126	68	186	346	141	99	114
Link Distance (ft)	760		271	271		1010	1010
Upstream Blk Time (%)			0	12			
Queuing Penalty (veh)			0	81			
Storage Bay Dist (ft)		170			200		
Storage Blk Time (%)	0				0		
Queuing Penalty (veh)	0				0		

Intersection: 16: Higuera & Tank Farm

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	68	67	203	167	75	96	264	380	160	211	188	141
Average Queue (ft)	29	21	113	82	4	18	131	152	123	122	55	55
95th Queue (ft)	64	51	179	155	45	60	210	300	192	197	132	109
Link Distance (ft)	140	140	727	727			1010	1010			1734	1734
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					250	140			100	165		
Storage Blk Time (%)						0	6	12	9	4	0	
Queuing Penalty (veh)						0	1	85	24	7	0	

Zone Summary

Zone wide Queuing Penalty: 318

Intersection: 1: LOVR & Madonna

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	B50
Directions Served	L	TR	L	L	TR	R	L	T	T	T	R	T
Maximum Queue (ft)	84	208	218	188	342	331	300	374	388	372	210	121
Average Queue (ft)	27	88	107	98	228	162	97	282	298	267	138	13
95th Queue (ft)	66	165	178	166	346	312	263	396	403	391	246	75
Link Distance (ft)		322	332	332	332			315	315	315		1294
Upstream Blk Time (%)		0			1	0	0	8	10	5		
Queuing Penalty (veh)		0			5	0	0	48	60	26		
Storage Bay Dist (ft)	230					170	200				175	
Storage Blk Time (%)		0			36	5		31		12	1	
Queuing Penalty (veh)		0			80	15		28		50	3	

Intersection: 1: LOVR & Madonna

Movement	B50	B50	SB	SB	SB	SB
Directions Served	T	T	L	L	T	TR
Maximum Queue (ft)	135	78	282	350	406	398
Average Queue (ft)	19	7	135	168	261	234
95th Queue (ft)	88	61	218	282	365	341
Link Distance (ft)	1294	1294			977	977
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			350	350		
Storage Blk Time (%)				0	1	
Queuing Penalty (veh)				0	3	

Intersection: 2: Oceanaire & Madonna

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SE	NE
Directions Served	<L	T	TR	<L	T	T	R>	<LT	R	LTR>	<LR>	<LR
Maximum Queue (ft)	32	207	255	65	256	340	170	41	50	102	34	36
Average Queue (ft)	6	68	103	27	83	146	63	2	14	50	5	10
95th Queue (ft)	20	150	200	59	196	276	163	16	39	88	25	29
Link Distance (ft)		1668	1668		560	560		228		246	156	149
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	115			115			100		50			
Storage Blk Time (%)		1			2	13	0	0	0			
Queuing Penalty (veh)		0			1	21	0	0	0			

Queuing and Blocking Report
Near Term PM 2025
02/27/2018

Intersection: 3: Dalidio & Madonna

Movement	EB	EB	EB	B62	B62	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	T	T	L	T	T	TR	LT	R	LT
Maximum Queue (ft)	86	258	290	30	61	155	319	375	69	144	74	77
Average Queue (ft)	22	121	176	1	4	64	102	156	9	68	37	25
95th Queue (ft)	59	216	280	17	30	127	232	309	38	120	64	58
Link Distance (ft)		230	230	470	470		581	581	581	269		131
Upstream Blk Time (%)		0	3									0
Queuing Penalty (veh)		2	17									0
Storage Bay Dist (ft)	112					275					150	
Storage Blk Time (%)		7					0			0		3
Queuing Penalty (veh)		2					0			0		1

Intersection: 3: Dalidio & Madonna

Movement	SB
Directions Served	R
Maximum Queue (ft)	45
Average Queue (ft)	14
95th Queue (ft)	40
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	50
Storage Blk Time (%)	
Queuing Penalty (veh)	

Central Coast Transportation Consulting
SimTraffic Report

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	LT	R	L
Maximum Queue (ft)	142	454	677	724	364	392	305	206	215	199	188	42
Average Queue (ft)	29	234	338	427	203	102	69	37	174	133	87	7
95th Queue (ft)	96	422	644	737	389	340	250	124	222	213	161	29
Link Distance (ft)		1024	1024	1024			970	970				194
Upstream Blk Time (%)				0								
Queuing Penalty (veh)				0								
Storage Bay Dist (ft)	100				260	260					275	
Storage Blk Time (%)		36			22	0						
Queuing Penalty (veh)		7			60	0						

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	57	42
Average Queue (ft)	19	13
95th Queue (ft)	48	39
Link Distance (ft)		
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Hwy 101 NB & Madonna

Movement	EB	EB	EB	EB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	TR	L	TR
Maximum Queue (ft)	216	252	154	259	556	547	197	141
Average Queue (ft)	126	156	51	140	161	157	88	37
95th Queue (ft)	197	225	117	230	367	370	164	100
Link Distance (ft)		970	970	970	877	877		908
Upstream Blk Time (%)					0			
Queuing Penalty (veh)					0			
Storage Bay Dist (ft)	435						185	
Storage Blk Time (%)							1	0
Queuing Penalty (veh)							1	0

Intersection: 7: Higuera & Madonna/Shopping Center

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	TR	LT	T	R	R
Maximum Queue (ft)	234	334	247	42	129	319	510	322	236	245	76	30
Average Queue (ft)	131	182	43	7	67	244	165	108	137	149	4	1
95th Queue (ft)	205	285	186	29	120	349	410	230	209	221	46	21
Link Distance (ft)	877	877		114	114		1511	1511			386	386
Upstream Blk Time (%)					3							
Queuing Penalty (veh)					0							
Storage Bay Dist (ft)			150			160			250	250		
Storage Blk Time (%)		16	1			35	1		0	0		
Queuing Penalty (veh)		58	3			107	4		0	1		

Intersection: 10: LOVR & Autopark

Movement	WB	WB	NB	NB	SB	SB	SB	B44	B44	B44
Directions Served	L	R	T	R	L	T	T	T	T	
Maximum Queue (ft)	127	59	4	5	60	14	7	130	441	139
Average Queue (ft)	45	19	0	1	18	0	0	4	19	5
95th Queue (ft)	103	42	3	7	48	10	5	92	208	98
Link Distance (ft)	260		1031			271	271	829	829	829
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		175		50	60					
Storage Blk Time (%)					1	0				
Queuing Penalty (veh)					5	0				

Intersection: 11: LOVR & Calle Joaquin

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	40	30	158	103	157	260	266	173	95	216	268	175
Average Queue (ft)	10	4	76	37	38	139	141	24	30	102	205	30
95th Queue (ft)	33	20	131	76	96	256	258	99	67	215	301	134
Link Distance (ft)	344	344	390			248	248			176	176	
Upstream Blk Time (%)						0	0			1	22	0
Queuing Penalty (veh)						3	4			11	167	0
Storage Bay Dist (ft)				150	115			105	115			115
Storage Blk Time (%)			0	0	0	6	8			3	28	
Queuing Penalty (veh)			0	0	0	3	5			1	6	

Intersection: 11: LOVR & Calle Joaquin

Movement	B60	B60
Directions Served	T	T
Maximum Queue (ft)	216	390
Average Queue (ft)	19	100
95th Queue (ft)	125	295
Link Distance (ft)	1031	1031
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: LOVR & 101 NB

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	L	T	T	T	T	R
Maximum Queue (ft)	290	326	264	269	210	299	388	195
Average Queue (ft)	162	204	132	117	122	96	127	69
95th Queue (ft)	261	305	216	197	193	211	279	179
Link Distance (ft)		1056		667	667	929	929	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	625		395					135
Storage Blk Time (%)				0			5	0
Queuing Penalty (veh)				0			14	1

Queuing and Blocking Report
Near Term PM 2025
02/27/2018

Intersection: 15: Higuera & Suburban

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	619	230	241	351	259	610	589
Average Queue (ft)	301	126	102	172	166	245	251
95th Queue (ft)	563	274	199	311	288	572	569
Link Distance (ft)	711		359	359		1033	1033
Upstream Blk Time (%)	0			0		1	1
Queuing Penalty (veh)	0			1		5	4
Storage Bay Dist (ft)		170			200		
Storage Blk Time (%)	31	0			22	4	
Queuing Penalty (veh)	52	0			133	6	

Intersection: 16: Higuera & Tank Farm

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	57	48	307	278	163	150	252	256	160	224	385	302
Average Queue (ft)	18	17	182	162	12	32	134	113	84	146	132	121
95th Queue (ft)	47	43	263	250	78	92	222	217	173	231	300	246
Link Distance (ft)	149	149	687	687			1033	1033			1682	1682
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					250	140			100	165		
Storage Blk Time (%)				1		0	9	12	2	9	3	
Queuing Penalty (veh)				3		0	4	55	6	31	8	

Zone Summary

Zone wide Queuing Penalty: 1133

Near Term Plus Project

Intersection: 1: LOVR & Madonna

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	TR	L	L	TR	R	L	T	T	T	R	L
Maximum Queue (ft)	157	203	101	100	140	95	71	168	199	238	150	238
Average Queue (ft)	62	94	48	40	52	29	27	78	99	113	47	125
95th Queue (ft)	121	171	90	83	101	63	60	142	167	185	106	198
Link Distance (ft)		311	313	313				361	361	361		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	230				170	170	200				175	350
Storage Blk Time (%)		0			0			0		1		
Queuing Penalty (veh)		0			0			0		2		

Intersection: 1: LOVR & Madonna

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	277	298	281
Average Queue (ft)	151	171	146
95th Queue (ft)	226	262	238
Link Distance (ft)		830	830
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	350		
Storage Blk Time (%)	0	0	
Queuing Penalty (veh)	0	0	

Intersection: 2: Oceanaire & Madonna

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SE	NE
Directions Served	<L	T	TR	<L	T	T	R>	<LT	R	LTR>	<LR>	<LR
Maximum Queue (ft)	19	143	170	32	128	177	92	47	47	125	39	28
Average Queue (ft)	3	59	91	6	50	81	18	12	14	60	7	6
95th Queue (ft)	14	118	159	24	106	148	62	36	36	102	28	20
Link Distance (ft)		1704	1704		591	591		222		241	150	140
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	115			115			100		50			
Storage Blk Time (%)		1			0	4		1	0			
Queuing Penalty (veh)		0			0	2		0	0			

Intersection: 3: Dalidio & Madonna

Movement	EB	EB	EB	B76	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	L	T	T	TR	LT	R	LT	R
Maximum Queue (ft)	57	252	300	4	205	120	157	15	80	114	33	28
Average Queue (ft)	13	137	183	0	105	33	58	1	29	50	9	3
95th Queue (ft)	43	232	278	3	177	90	132	8	63	89	31	17
Link Distance (ft)		248	248	338		568	568	568	237	237	125	
Upstream Blk Time (%)		0	2									
Queuing Penalty (veh)		1	9									
Storage Bay Dist (ft)	112				275							50
Storage Blk Time (%)		11									0	
Queuing Penalty (veh)		1									0	

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	EB	EB	EB	EB	B305	B305	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	TR	T	T	L	T	T	TR	L	LT
Maximum Queue (ft)	139	338	364	425	16	68	203	72	75	67	190	186
Average Queue (ft)	24	196	222	291	1	5	100	14	16	9	150	128
95th Queue (ft)	84	317	351	422	13	33	173	46	52	38	200	195
Link Distance (ft)		342	342	342	620	620			961	961		
Upstream Blk Time (%)		0	1	6								
Queuing Penalty (veh)		1	3	23								
Storage Bay Dist (ft)	100						260	260				
Storage Blk Time (%)		28										
Queuing Penalty (veh)		5										

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	NB	SB	SB	SB
Directions Served	R	L	LT	R
Maximum Queue (ft)	213	12	14	8
Average Queue (ft)	164	0	1	1
95th Queue (ft)	223	5	7	6
Link Distance (ft)		213		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	275		100	100
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Hwy 101 NB & Madonna

Movement	EB	EB	EB	EB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	TR	L	TR
Maximum Queue (ft)	167	198	125	252	240	246	178	186
Average Queue (ft)	68	98	22	123	139	137	84	75
95th Queue (ft)	139	167	76	232	216	214	150	149
Link Distance (ft)		961	961	961	861	861		906
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	435						185	
Storage Blk Time (%)							0	0
Queuing Penalty (veh)							1	1

Intersection: 7: Higuera & Madonna

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	TR	LT	T
Maximum Queue (ft)	175	404	260	42	71	205	161	164	154	178
Average Queue (ft)	85	193	69	10	22	95	55	73	97	104
95th Queue (ft)	154	322	247	33	57	167	119	138	145	162
Link Distance (ft)	861	861		79	79		290	290		
Upstream Blk Time (%)				0	0					
Queuing Penalty (veh)				0	0					
Storage Bay Dist (ft)			150			160			250	250
Storage Blk Time (%)		15	1			2	0			
Queuing Penalty (veh)		82	5			3	0			

Intersection: 10: LOVR & Autopark

Movement	WB	WB	NB	SB	SB	B44
Directions Served	L	R	R	L	T	T
Maximum Queue (ft)	77	25	21	47	6	169
Average Queue (ft)	19	10	1	13	0	6
95th Queue (ft)	53	26	12	39	4	119
Link Distance (ft)	253				280	795
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)		175	50	60		
Storage Blk Time (%)			0	0		
Queuing Penalty (veh)			0	0		

Queuing and Blocking Report
Near Term Plus Project AM 2025 02/27/2018

Intersection: 11: LOVR & Calle Joaquin

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	48	26	21	114	35	105	202	214	126	94	216	234
Average Queue (ft)	11	2	1	37	12	30	65	76	15	22	82	141
95th Queue (ft)	35	13	15	83	33	74	166	179	69	67	190	254
Link Distance (ft)	311	311		418			224	224			148	148
Upstream Blk Time (%)							0	0		0	4	13
Queuing Penalty (veh)							0	1		0	21	67
Storage Bay Dist (ft)			260		150	115			105	115		
Storage Blk Time (%)				0			2	3	0		6	17
Queuing Penalty (veh)				0			1	2	0		2	3

Intersection: 11: LOVR & Calle Joaquin

Movement	SB	B92	B92
Directions Served	R	T	T
Maximum Queue (ft)	148	271	351
Average Queue (ft)	17	23	40
95th Queue (ft)	89	168	220
Link Distance (ft)		1048	1048
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)	115		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: LOVR & 101 NB

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	L	T	T	T	T	R
Maximum Queue (ft)	465	501	181	142	180	680	705	195
Average Queue (ft)	230	290	90	56	65	238	283	68
95th Queue (ft)	396	449	159	110	129	629	662	204
Link Distance (ft)		1216		708	708	919	919	
Upstream Blk Time (%)						1	1	
Queuing Penalty (veh)						4	6	
Storage Bay Dist (ft)	625		395					135
Storage Blk Time (%)							29	0
Queuing Penalty (veh)							31	0

Intersection: 15: Higuera & Suburban

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	165	113	212	374	245	388	320
Average Queue (ft)	75	40	61	173	105	77	67
95th Queue (ft)	136	83	143	311	229	286	244
Link Distance (ft)	670		354	354		1021	1021
Upstream Blk Time (%)				1			
Queuing Penalty (veh)				10			
Storage Bay Dist (ft)		170			200		
Storage Blk Time (%)	0				15	0	
Queuing Penalty (veh)	0				41	0	

Intersection: 16: Higuera & Tank Farm

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	87	54	218	174	88	48	211	318	160	214	155	104
Average Queue (ft)	31	19	114	77	3	11	111	127	108	128	48	48
95th Queue (ft)	72	47	181	148	38	32	184	251	186	201	113	98
Link Distance (ft)	147	147	720	720			1021	1021			1677	1677
Upstream Blk Time (%)	0											
Queuing Penalty (veh)	0											
Storage Bay Dist (ft)					250	140			100	165		
Storage Blk Time (%)							4	10	8	5	0	
Queuing Penalty (veh)							1	71	22	8	0	

Zone Summary

Zone wide Queuing Penalty: 431

Intersection: 1: LOVR & Madonna

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	B50
Directions Served	L	TR	L	L	TR	R	L	T	T	T	R	T
Maximum Queue (ft)	86	199	155	153	184	163	195	325	330	349	210	16
Average Queue (ft)	32	89	87	79	95	74	62	192	213	239	166	1
95th Queue (ft)	72	163	141	135	160	136	141	300	326	369	264	7
Link Distance (ft)		411	301	301	301			283	283	283		1309
Upstream Blk Time (%)							0	1	3	6		
Queuing Penalty (veh)							0	6	16	37		
Storage Bay Dist (ft)	230					170	200				175	
Storage Blk Time (%)		0			1	0	0	8		18	1	
Queuing Penalty (veh)		0			3	1	1	7		72	5	

Intersection: 1: LOVR & Madonna

Movement	B50	B50	SB	SB	SB	SB
Directions Served	T	T	L	L	T	TR
Maximum Queue (ft)	23	124	217	364	417	380
Average Queue (ft)	1	13	131	176	250	223
95th Queue (ft)	13	65	198	281	372	338
Link Distance (ft)	1309	1309			993	993
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			350	350		
Storage Blk Time (%)				0	1	
Queuing Penalty (veh)				0	5	

Intersection: 2: Oceanaire & Madonna

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SE	NE
Directions Served	<L	T	TR	<L	T	T	R>	<LT	R	LTR>	<LR>	<LR
Maximum Queue (ft)	42	232	239	59	200	254	170	21	51	114	27	36
Average Queue (ft)	8	81	116	21	64	113	45	2	17	49	3	7
95th Queue (ft)	28	179	209	50	151	215	122	14	40	87	17	24
Link Distance (ft)		1674	1674		641	641		228		247	140	147
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	115			115			100		50			
Storage Blk Time (%)		4			2	10	0		0			
Queuing Penalty (veh)		1			1	17	1		0			

Queuing and Blocking Report
Near Term Plus Project PM 2025 02/27/2018

Intersection: 3: Dalidio & Madonna

Movement	EB	EB	EB	B62	B62	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	T	T	L	T	T	TR	LT	R	LT
Maximum Queue (ft)	150	264	286	82	162	335	608	604	456	220	202	81
Average Queue (ft)	36	164	226	4	28	335	590	234	39	111	100	24
95th Queue (ft)	102	254	303	33	102	335	602	532	243	184	170	61
Link Distance (ft)		201	201	417	417		580	580	580	252	252	131
Upstream Blk Time (%)		4	17				62	1	0	0		
Queuing Penalty (veh)		20	92				304	6	0	0		
Storage Bay Dist (ft)	112					275						
Storage Blk Time (%)	0	18				99	0					5
Queuing Penalty (veh)	0	6				342	1					1

Intersection: 3: Dalidio & Madonna

Movement	SB
Directions Served	R
Maximum Queue (ft)	33
Average Queue (ft)	13
95th Queue (ft)	36
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	50
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Central Coast Transportation Consulting SimTraffic Report

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	EB	EB	EB	EB	B305	B305	B305	B306	B306	B306	WB	WB
Directions Served	L	T	T	TR	T	T	T	T	T	T	L	T
Maximum Queue (ft)	159	271	267	274	302	315	326	308	421	433	410	560
Average Queue (ft)	36	232	229	244	163	203	260	115	188	215	256	487
95th Queue (ft)	123	283	287	265	348	380	399	415	534	559	546	752
Link Distance (ft)		186	186	186	248	248	248	502	502	502		
Upstream Blk Time (%)		38	40	72	7	13	53	0	2	6		
Queuing Penalty (veh)		198	206	368	38	68	274	1	8	29		
Storage Bay Dist (ft)	100										260	260
Storage Blk Time (%)		51									0	84
Queuing Penalty (veh)		12									0	278

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	T	TR	L	LT	R	L	LT	R
Maximum Queue (ft)	1045	1031	189	194	154	51	71	58
Average Queue (ft)	852	547	164	149	40	7	19	16
95th Queue (ft)	1448	1195	183	206	113	30	51	47
Link Distance (ft)	984	984				192		
Upstream Blk Time (%)	53	7						
Queuing Penalty (veh)	318	42						
Storage Bay Dist (ft)					275		100	100
Storage Blk Time (%)	4					0	0	0
Queuing Penalty (veh)	22					0	0	0

Intersection: 6: Hwy 101 NB & Madonna

Movement	EB	EB	EB	EB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	TR	L	TR
Maximum Queue (ft)	164	185	155	225	1036	1032	244	639
Average Queue (ft)	79	104	42	120	772	689	147	148
95th Queue (ft)	147	171	109	204	1341	1300	265	521
Link Distance (ft)		984	984	984	862	862		927
Upstream Blk Time (%)					56	34		2
Queuing Penalty (veh)					357	216		0
Storage Bay Dist (ft)	435						185	
Storage Blk Time (%)							21	0
Queuing Penalty (veh)							27	0

Intersection: 7: Higuera & Madonna

Movement	EB	EB	EB	WB	WB	NB	NB	NB	B61	B61	B300	B300
Directions Served	L	LT	R	L	TR	L	T	TR	T	T	T	T
Maximum Queue (ft)	374	540	260	34	140	320	1579	1545	1698	1689	789	794
Average Queue (ft)	162	232	75	6	97	287	925	725	592	588	172	171
95th Queue (ft)	328	448	265	24	158	372	2003	1849	1822	1818	700	699
Link Distance (ft)	862	862		118	118		1509	1509	1632	1632	827	827
Upstream Blk Time (%)		0			42		44	27	24	24	14	14
Queuing Penalty (veh)		1			0		179	111	98	98	59	58
Storage Bay Dist (ft)			150			160						
Storage Blk Time (%)		33	0			74	1					
Queuing Penalty (veh)		124	1			226	2					

Intersection: 7: Higuera & Madonna

Movement	SB	SB	SB	SB
Directions Served	LT	T	R	R
Maximum Queue (ft)	269	350	445	450
Average Queue (ft)	106	200	250	225
95th Queue (ft)	233	414	585	558
Link Distance (ft)			398	398
Upstream Blk Time (%)			42	33
Queuing Penalty (veh)			281	219
Storage Bay Dist (ft)	250	250		
Storage Blk Time (%)	0	1	55	
Queuing Penalty (veh)	1	5	298	

Intersection: 10: LOVR & Autopark

Movement	WB	WB	NB	SB	SB	B44	B44
Directions Served	L	R	R	L	T	T	T
Maximum Queue (ft)	130	53	23	61	6	316	326
Average Queue (ft)	45	21	1	16	0	13	19
95th Queue (ft)	104	45	11	47	4	174	210
Link Distance (ft)	354				271	844	844
Upstream Blk Time (%)							0
Queuing Penalty (veh)							0
Storage Bay Dist (ft)		175	50	60			
Storage Blk Time (%)			0	0			
Queuing Penalty (veh)			0	1			

Intersection: 11: LOVR & Calle Joaquin

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	47	27	27	149	92	162	237	241	150	115	244	296
Average Queue (ft)	13	4	2	71	33	34	138	150	25	31	111	229
95th Queue (ft)	37	18	31	127	71	103	254	259	96	74	236	344
Link Distance (ft)	334	334		456			228	228			217	217
Upstream Blk Time (%)							1	1			1	24
Queuing Penalty (veh)							10	12			9	187
Storage Bay Dist (ft)			260		150	115			105	115		
Storage Blk Time (%)				0	0	0	7	9			3	32
Queuing Penalty (veh)				0	0	0	3	5			2	9

Intersection: 11: LOVR & Calle Joaquin

Movement	SB	B29	B29
Directions Served	R	T	T
Maximum Queue (ft)	175	409	549
Average Queue (ft)	30	105	173
95th Queue (ft)	133	451	599
Link Distance (ft)		1002	1002
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)	115		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: LOVR & 101 NB

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	L	T	T	T	T	R
Maximum Queue (ft)	328	386	220	205	214	250	318	195
Average Queue (ft)	167	212	117	102	115	97	126	61
95th Queue (ft)	274	322	187	175	190	204	269	173
Link Distance (ft)		1202		705	705	936	936	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	625		395					135
Storage Blk Time (%)							5	0
Queuing Penalty (veh)							15	0

Queuing and Blocking Report
Near Term Plus Project PM 2025 02/27/2018

Intersection: 15: Higuera & Suburban

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	616	230	226	335	259	502	464
Average Queue (ft)	326	138	98	169	141	188	190
95th Queue (ft)	593	286	195	307	261	398	377
Link Distance (ft)	705		353	353		1032	1032
Upstream Blk Time (%)	1			0			
Queuing Penalty (veh)	0			1			
Storage Bay Dist (ft)		170			200		
Storage Blk Time (%)	37	0			17	2	
Queuing Penalty (veh)	61	1			103	2	

Intersection: 16: Higuera & Tank Farm

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	51	44	294	285	145	147	250	298	160	221	292	247
Average Queue (ft)	17	16	182	160	8	29	124	109	69	137	109	105
95th Queue (ft)	48	42	268	255	68	85	213	222	155	224	243	204
Link Distance (ft)	149	149	688	688			1032	1032			1522	1522
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					250	140			100	165		
Storage Blk Time (%)				1			7	9	1	7	1	
Queuing Penalty (veh)				3			3	42	3	25	4	

Zone Summary

Zone wide Queuing Penalty: 5671

Mitigated

Intersection: 1: LOVR & Madonna

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	TR	L	L	TR	R	L	T	T	T	R	L
Maximum Queue (ft)	133	210	115	115	116	99	99	155	210	240	191	212
Average Queue (ft)	56	100	58	43	49	29	34	86	103	120	49	118
95th Queue (ft)	109	173	108	88	92	65	78	149	171	201	124	194
Link Distance (ft)		311	313	313				361	361	361		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	230				170	170	200				175	350
Storage Blk Time (%)		0			0			0		2	0	
Queuing Penalty (veh)		0			0			0		2	0	

Intersection: 1: LOVR & Madonna

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	265	313	301
Average Queue (ft)	152	177	156
95th Queue (ft)	232	270	256
Link Distance (ft)		830	830
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	350		
Storage Blk Time (%)	0	0	
Queuing Penalty (veh)	0	0	

Intersection: 2: Oceanaire & Madonna

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SE	NE
Directions Served	<L	T	TR	<L	T	T	R>	<LT	R	LTR>	<LR>	<LR
Maximum Queue (ft)	19	183	224	36	136	180	52	38	45	137	34	31
Average Queue (ft)	3	58	90	6	49	78	15	11	15	59	6	5
95th Queue (ft)	12	130	174	25	107	143	45	34	36	105	24	18
Link Distance (ft)		1704	1704		591	591		222		241	150	140
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	115			115			200		50			
Storage Blk Time (%)		1			1	0		0	0			
Queuing Penalty (veh)		0			0	0		0	0			

Intersection: 3: Dalidio & Madonna

Movement	EB	EB	EB	EB	B76	B76	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	R	T	T	L	L	T	TR	LT	R
Maximum Queue (ft)	117	235	280	125	11	21	115	127	163	176	74	91
Average Queue (ft)	15	98	135	38	0	1	44	63	31	49	29	45
95th Queue (ft)	59	189	238	110	8	18	94	110	99	126	61	77
Link Distance (ft)		248	248		338	338			568	568	237	237
Upstream Blk Time (%)		0	1									
Queuing Penalty (veh)		1	4									
Storage Bay Dist (ft)	112			100			310	310				
Storage Blk Time (%)		5	10	0								
Queuing Penalty (veh)		1	8	0								

Intersection: 3: Dalidio & Madonna

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	42	28
Average Queue (ft)	8	5
95th Queue (ft)	31	21
Link Distance (ft)	137	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	EB	EB	EB	EB	EB	B305	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	T	L	T	T	TR	L	LT
Maximum Queue (ft)	208	314	346	407	125	71	202	64	69	40	192	186
Average Queue (ft)	32	187	203	261	76	4	103	14	18	3	151	123
95th Queue (ft)	120	290	326	396	161	34	176	46	53	20	199	198
Link Distance (ft)		343	343	343		620		960	960			
Upstream Blk Time (%)		0	0	3								
Queuing Penalty (veh)		0	0	12								
Storage Bay Dist (ft)	150				100		260			260		
Storage Blk Time (%)	0	13		42	0		0					
Queuing Penalty (veh)	0	2		37	1		1					

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	NB	SB	SB	SB
Directions Served	R	L	LT	R
Maximum Queue (ft)	212	20	18	7
Average Queue (ft)	159	1	2	2
95th Queue (ft)	220	9	10	7
Link Distance (ft)		212		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	275		100	100
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Hwy 101 NB & Madonna

Movement	EB	EB	EB	EB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	TR	L	TR
Maximum Queue (ft)	157	186	131	258	231	240	206	225
Average Queue (ft)	59	88	30	125	131	143	83	63
95th Queue (ft)	128	156	94	234	211	214	158	145
Link Distance (ft)		960	960	960	853	853		906
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	435						275	
Storage Blk Time (%)							0	0
Queuing Penalty (veh)							0	0

Queuing and Blocking Report
Mitigated Near Term Plus Project AM 2025 04/11/2018

Intersection: 7: Higuera & Madonna

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	L	TR	L	L	TR	LT	T
Maximum Queue (ft)	212	313	251	42	52	134	131	234	172	167
Average Queue (ft)	84	176	35	8	19	45	48	111	99	102
95th Queue (ft)	160	271	158	31	48	94	98	202	153	159
Link Distance (ft)	853	853		82	82		287	287		
Upstream Blk Time (%)					0			0		
Queuing Penalty (veh)					0			0		
Storage Bay Dist (ft)			275			160			250	250
Storage Blk Time (%)		1				0	0			
Queuing Penalty (veh)		4				0	0			

Intersection: 10: LOVR & Autopark

Movement	WB	WB	NB	NB	NB	SB	SB	SB	B44	B44
Directions Served	L	R	T	T	R	L	T	T	T	T
Maximum Queue (ft)	45	20	108	128	70	64	144	178	53	46
Average Queue (ft)	14	7	19	25	9	19	27	39	5	5
95th Queue (ft)	37	23	70	86	38	53	129	148	56	60
Link Distance (ft)	253		1048	1048			280	280	795	795
Upstream Blk Time (%)							2	2		
Queuing Penalty (veh)							9	12		
Storage Bay Dist (ft)		175			50	60				
Storage Blk Time (%)				2	0	0	3			
Queuing Penalty (veh)				1	0	1	1			

Intersection: 11: LOVR & Calle Joaquin

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	48	15	82	40	134	227	230	146	90	206	227	148
Average Queue (ft)	8	1	39	12	29	66	80	14	26	94	151	17
95th Queue (ft)	30	10	74	35	76	175	195	69	84	207	254	91
Link Distance (ft)	311	311	418			224	224			148	148	
Upstream Blk Time (%)						0	0		0	8	16	0
Queuing Penalty (veh)						1	2		0	39	82	0
Storage Bay Dist (ft)				150	115			105	115			325
Storage Blk Time (%)					0	2	3			10	16	0
Queuing Penalty (veh)					0	1	2			4	3	0

Intersection: 11: LOVR & Calle Joaquin

Movement	B92	B92
Directions Served	T	T
Maximum Queue (ft)	276	346
Average Queue (ft)	66	84
95th Queue (ft)	435	469
Link Distance (ft)	1048	1048
Upstream Blk Time (%)	2	2
Queuing Penalty (veh)	8	10
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: LOVR & 101 NB

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	L	T	T	T	T	R
Maximum Queue (ft)	457	520	198	127	152	643	677	310
Average Queue (ft)	248	314	86	54	66	290	332	98
95th Queue (ft)	415	475	157	106	127	713	747	317
Link Distance (ft)		1216		708	708	919	919	
Upstream Blk Time (%)						1	1	
Queuing Penalty (veh)						4	8	
Storage Bay Dist (ft)	625		395					250
Storage Blk Time (%)							27	0
Queuing Penalty (veh)							28	0

Queuing and Blocking Report
Mitigated Near Term Plus Project AM 2025 04/11/2018

Intersection: 15: Higuera & Suburban

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	TR	L	T	T
Maximum Queue (ft)	119	158	221	354	184	138	142
Average Queue (ft)	34	76	65	179	81	40	49
95th Queue (ft)	80	134	150	322	158	106	112
Link Distance (ft)	672		347	347		1027	1027
Upstream Blk Time (%)			0	2			
Queuing Penalty (veh)			0	13			
Storage Bay Dist (ft)		170			200		
Storage Blk Time (%)	0	0			2	0	
Queuing Penalty (veh)	0	0			5	0	

Intersection: 16: Higuera & Tank Farm

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	99	62	193	179	31	57	226	285	220	240	127	128
Average Queue (ft)	35	23	115	88	2	14	116	116	110	136	47	50
95th Queue (ft)	76	51	177	154	29	39	194	222	215	223	101	102
Link Distance (ft)	147	147	720	720			1027	1027			1677	1677
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					250	140			160	260		
Storage Blk Time (%)							5	2	3	0		
Queuing Penalty (veh)							1	14	7	0		

Zone Summary

Zone wide Queuing Penalty: 333

Intersection: 1: LOVR & Madonna

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	B50
Directions Served	L	TR	L	L	TR	R	L	T	T	T	R	T
Maximum Queue (ft)	83	199	213	197	251	216	277	322	340	353	210	51
Average Queue (ft)	31	90	109	96	124	102	78	216	242	263	178	3
95th Queue (ft)	71	160	177	162	204	182	184	315	340	386	269	29
Link Distance (ft)		411	301	301	301			283	283	283		1309
Upstream Blk Time (%)					0		0	2	5	10		
Queuing Penalty (veh)					0		0	13	28	60		
Storage Bay Dist (ft)	230					170	200				175	
Storage Blk Time (%)		0			4	2		12		24	2	
Queuing Penalty (veh)		0			9	6		11		97	9	

Intersection: 1: LOVR & Madonna

Movement	B50	B50	SB	SB	SB	SB
Directions Served	T	T	L	L	T	TR
Maximum Queue (ft)	87	166	285	352	392	368
Average Queue (ft)	7	29	156	195	249	227
95th Queue (ft)	47	114	244	299	347	329
Link Distance (ft)	1309	1309			993	993
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			350	350		
Storage Blk Time (%)			0	0	0	
Queuing Penalty (veh)			0	0	2	

Intersection: 2: Oceanaire & Madonna

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SE	NE
Directions Served	<L	T	TR	<L	T	T	R>	<LT	R	LTR>	<LR>	<LR
Maximum Queue (ft)	69	234	282	69	293	384	231	38	47	118	27	37
Average Queue (ft)	9	90	142	29	106	167	54	3	16	54	3	7
95th Queue (ft)	43	191	250	61	225	308	163	21	40	96	16	22
Link Distance (ft)		1674	1674		641	641		228		247	140	147
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	115			115			200		50			
Storage Blk Time (%)		4			5	5		0	0			
Queuing Penalty (veh)		1			2	9		0	0			

Queuing and Blocking Report
Mitigated Near Term Plus Project PM 2025 04/11/2018

Intersection: 3: Dalidio & Madonna

Movement	EB	EB	EB	EB	B62	B62	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	R	T	T	L	L	T	TR	LT	R
Maximum Queue (ft)	171	277	268	160	218	255	212	240	352	382	209	184
Average Queue (ft)	36	170	208	120	20	44	114	130	132	172	113	91
95th Queue (ft)	109	271	303	202	131	183	193	213	275	317	189	153
Link Distance (ft)		202	202		418	418			580	580	252	252
Upstream Blk Time (%)		8	16		0	0						
Queuing Penalty (veh)		42	88		0	1						
Storage Bay Dist (ft)	112			100			310	310				
Storage Blk Time (%)		24	36	1					0			
Queuing Penalty (veh)		8	88	4					1			

Intersection: 3: Dalidio & Madonna

Movement	SB	SB
Directions Served	LT	R
Maximum Queue (ft)	89	41
Average Queue (ft)	29	15
95th Queue (ft)	67	40
Link Distance (ft)	143	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		50
Storage Blk Time (%)	6	0
Queuing Penalty (veh)	1	0

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	EB	EB	EB	EB	EB	B305	B305	B305	B306	B306	B306	WB
Directions Served	L	T	T	T	R	T	T	T	T	T	T	L
Maximum Queue (ft)	166	253	249	266	160	211	196	251	11	6	59	240
Average Queue (ft)	31	218	200	220	122	54	45	80	0	0	3	137
95th Queue (ft)	120	283	275	292	214	173	165	226	8	5	33	232
Link Distance (ft)		186	186	186		248	248	248	502	502	502	
Upstream Blk Time (%)	0	26	16	26		0	0	2				
Queuing Penalty (veh)	0	132	83	136		1	0	10				
Storage Bay Dist (ft)	150				100							260
Storage Blk Time (%)		35		47	0							0
Queuing Penalty (veh)		8		100	2							0

Intersection: 5: Hwy 101 SB/Madonna Inn & Madonna

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	T	T	TR	L	LT	R	L	LT	R
Maximum Queue (ft)	208	170	84	188	181	169	33	54	35
Average Queue (ft)	70	55	10	156	135	81	9	16	11
95th Queue (ft)	157	119	48	182	187	152	30	45	35
Link Distance (ft)	984	984					192		
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			260			275		100	100
Storage Blk Time (%)	0								
Queuing Penalty (veh)	0								

Intersection: 6: Hwy 101 NB & Madonna

Movement	EB	EB	EB	EB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	TR	L	TR
Maximum Queue (ft)	187	357	158	240	579	436	197	119
Average Queue (ft)	113	138	55	141	184	182	96	37
95th Queue (ft)	170	266	126	232	363	326	174	88
Link Distance (ft)		984	984	984	855	855		927
Upstream Blk Time (%)		0			0			
Queuing Penalty (veh)		0			0			
Storage Bay Dist (ft)	435						275	
Storage Blk Time (%)							0	
Queuing Penalty (veh)							0	

Intersection: 7: Higuera & Madonna

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	L	TR	LT	T	R	R
Maximum Queue (ft)	314	490	385	42	142	204	223	420	270	314	216	179
Average Queue (ft)	175	236	56	9	76	117	125	209	144	160	13	12
95th Queue (ft)	277	383	246	32	131	185	192	361	237	262	114	101
Link Distance (ft)	855	855		124	124		1505	1505			398	398
Upstream Blk Time (%)					2						0	0
Queuing Penalty (veh)					0						1	0
Storage Bay Dist (ft)			275			160			250	250		
Storage Blk Time (%)		8	0			2	2		1	2		
Queuing Penalty (veh)		31	0			3	4		4	9		

Intersection: 10: LOVR & Autopark

Movement	WB	WB	NB	NB	NB	SB	SB	SB	B44	B44
Directions Served	L	R	T	T	R	L	T	T	T	T
Maximum Queue (ft)	51	66	163	160	59	69	182	237	168	496
Average Queue (ft)	21	23	64	60	5	24	59	104	6	17
95th Queue (ft)	46	50	127	121	31	59	142	212	119	208
Link Distance (ft)	354		1002	1002			271	271	844	844
Upstream Blk Time (%)								0		0
Queuing Penalty (veh)								2		0
Storage Bay Dist (ft)		175			50	60				
Storage Blk Time (%)				5	0	1	2			
Queuing Penalty (veh)				2	0	5	1			

Intersection: 11: LOVR & Calle Joaquin

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	60	27	194	120	160	251	248	151	144	280	313	217
Average Queue (ft)	16	4	79	32	34	150	160	29	36	145	261	44
95th Queue (ft)	45	17	148	74	97	262	267	114	93	285	341	183
Link Distance (ft)	334	334	456			228	228			217	217	
Upstream Blk Time (%)						2	2			4	35	0
Queuing Penalty (veh)						14	15			28	272	0
Storage Bay Dist (ft)				150	115			105	115			325
Storage Blk Time (%)			2			8	11	0	0	6	35	0
Queuing Penalty (veh)			1			4	7	0	1	3	10	1

Intersection: 11: LOVR & Calle Joaquin

Movement	B29	B29
Directions Served	T	T
Maximum Queue (ft)	626	743
Average Queue (ft)	163	275
95th Queue (ft)	590	733
Link Distance (ft)	1002	1002
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	2
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: LOVR & 101 NB

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	L	T	T	T	T	R
Maximum Queue (ft)	309	368	213	220	230	239	278	244
Average Queue (ft)	165	209	120	118	125	103	122	53
95th Queue (ft)	257	309	196	190	207	196	227	142
Link Distance (ft)		1202		705	705	936	936	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	625		395					250
Storage Blk Time (%)							0	
Queuing Penalty (veh)							1	

Queuing and Blocking Report
Mitigated Near Term Plus Project PM 2025 04/11/2018

Intersection: 15: Higuera & Suburban

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	TR	L	T	T
Maximum Queue (ft)	395	230	237	337	259	440	432
Average Queue (ft)	149	167	93	163	140	176	192
95th Queue (ft)	314	244	196	309	262	330	337
Link Distance (ft)	707		347	347		1039	1039
Upstream Blk Time (%)				0			
Queuing Penalty (veh)				1			
Storage Bay Dist (ft)		170			200		
Storage Blk Time (%)	2	11			16	2	
Queuing Penalty (veh)	10	28			94	3	

Intersection: 16: Higuera & Tank Farm

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	53	43	285	264	170	187	273	282	218	288	246	237
Average Queue (ft)	18	17	184	161	9	35	139	116	68	162	119	119
95th Queue (ft)	47	42	269	244	70	109	240	224	160	264	231	214
Link Distance (ft)	149	149	688	688			1039	1039			1522	1522
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)					250	140			160	260		
Storage Blk Time (%)				1		0	11	4	0	2	0	
Queuing Penalty (veh)				2		0	4	18	1	7	1	

Zone Summary

Zone wide Queuing Penalty: 1542