FEHR PEERS

MEMORANDUM

Date: May 26, 2017

To: Kirk Bone, Parker Development

From: David B. Robinson, Fehr & Peers

Subject: Central El Dorado Hills Specific Plan Measure E Analysis

RS12-3017

INTRODUCTION

Fehr & Peers completed the near-term transportation impact analyses for the Central El Dorado Hills Specific Plan to support compliance with Measure E. The near-term analysis scenario represents conditions 10 years beyond the existing baseline. This memorandum summarizes traffic operations for intersections and freeway facilities under near-term conditions without and with the addition of trips from the full buildout of the Central El Dorado Hills project.

NEAR-TERM CONDITIONS FORECAST DEVELOPMENT

The El Dorado County travel demand forecasting model was used to develop, traffic volume forecasts for Near-Term conditions. The following steps, developed based on coordination with El Dorado County Community Development Agency staff, to develop the land use and roadway network inputs for the Near-Term (2027) analysis scenario forecasting model:

1. Land Use Growth – Used linear interpolation between the base year and future year models to develop 10-year land use growth projections.
2. 10-Year Land Use Forecasts – Add land use growth from Step 1 to the base year model land use inputs.
3. Capital Improvement Program Projects – Identified roadway improvement projects from the Adopted 2016 Capital Improvement Program with construction planned by 2027. Table 1 summarizes roadway improvement projects identified in the El Dorado County 2016 Capital Improvement Program that are planned to be under construction by 2027.
4. Near-Term Transportation Network – Added roadway improvement project from Step 3 to the base year model transportation network.
5. Near-Term No Project Forecasts – Developed AM and PM peak hour traffic volume forecasts for study intersections and freeway facilities using the inputs from Steps 1 through 4.
6. Near-Term Plus Project Forecasts – Added buildout land use for the Central El Dorado Hills Specific Plan to the El Dorado County travel demand forecasting model, and developed AM and PM peak hour traffic volume forecasts for study intersections and freeway facilities using the inputs from Steps 1 through 4.

TABLE 1: CAPACITY–ENHANCING ROADWAY IMPROVEMENTS (CONSTRUCTION WITHIN 10 YEARS)

Project Name	Project Description	Begin Construction
Country Club Drive – Silva Valley Parkway to Tong Road	Construct new 2-lane road Country Club Drive from Silva Valley Parkway to Tong Road. Work includes curb, gutter, and sidewalk on both sides of the roadway. CIP#71362	By 2026
Country Club Drive Extension – Tong Road to Bass Lake Road	Construct 2-lane extension of Country Club Drive from Tong Road to Bass Lake Road, with 8-foot paved shoulder, curb and gutter, and new intersection at Bass Lake Road. CIP#71361	By 2026
Country Club Drive Realignment - Bass Lake Road to Tierra De Dios Drive	Realign Country Club Drive from Bass Lake Road/Old Bass Lake Road to Tierra de Dios Drive. Work includes constructing a 2-lane road with 8-foot paved shoulders, sidewalk, curb and gutter. CIP#71360	By 2018
Green Valley Road Widening – County Line to Sophia Parkway	Widen Green Valley Rd from County line to Sophia Parkway from two to four lanes. CIP#72376	By 2017
Saratoga Way Ext - Phase 1	Construct new 2-lane arterial to extend Saratoga Wy. from current terminus near Finders Wy to Sacramento County Line; includes median, 6-ft shoulders, right-turn pocket onto Finders Way, asphalt path, drainage system, environmental clearance and secure ROW for future 4-lane road from County Line to El Dorado Hills Blvd. CIP#71324	By 2018
Silver Springs Parkway to Bass Lake Road (South Segment)	Realign Bass Lake Road south of Green Valley Road through the proposed Silver Springs subdivision, which is west of the existing Bass Lake Road. The new road is named Silver Springs Parkway. That development is responsible for building Silver Springs Parkway through their development. Silver Springs Parkway will be a 2-lane standard divided roadway with shoulders. CIP#76108	By 2018
US 50 Auxiliary Lane Westbound – Bass Lake Road to Silva Valley Parkway	Widen US 50 to add an auxiliary lane to westbound US 50 connecting the Bass Lake Road Interchange and Silva Valley Parkway Interchange. Timing of construction to be concurrent with or after the Bass Lake Road Interchange improvement. CIP#53117	By 2026
US 50 / El Dorado Hills Blvd Interchange Improvements – (Phase 2B)	Reconstruct eastbound diagonal on-ramp and eastbound loop off-ramp for the ultimate configuration; add a lane to northbound El Dorado Hills Blvd under the overpass (eliminates merge lane and improves traffic flow from the eastbound loop off-ramp); eastbound diagonal on-ramp will be metered and have an HOV bypass. Project split from ELD15630 (CIP#71323).	By 2026
White Rock Rd Widening - Manchester to Sacramento County Line (Connector Segment)	Widen White Rock Rd from 2 to 4 lanes, divided, from Manchester Dr. west to Sacramento County Line. CIP#GP137	By 2026

Source: El Dorado County's Adopted 2016 Capital Improvement Program, December 6, 2016. (Section 4.1 – West Slope Road/Bridge Individual Project Summaries)

The following figures show AM and PM peak hour traffic volume forecasts used for the analysis of Near-Term conditions:

- Figure 1 – Peak Hour Traffic Volumes and Lane Configurations – Near-Term No Project
- Figure 2 (A & B) – Peak Hour Traffic Volumes and Lane Configurations – Near-Term Plus Project

As documented in Table 1, the Saratoga Way extension into City of Folsom and the Country Club Drive extension from Silva Valley Parkway to El Dorado Hills Boulevard will be constructed before 2035, the year of the Cumulative scenarios. This extension will parallel US 50 and provide more connectivity from El Dorado Hills to City of Folsom. The construction of the extension will also bring improvements to the El Dorado Hills Boulevard / Saratoga Way / Park Drive intersection. These intersection is assumed to operate with protected left-turns for all approaches, and lane configuration improvements are based on the magnitude of the Near Term volumes. They are as follows:

- One left-turn lane, three thru lanes, and one right-turn lane for the northbound approach;
- One left-turn lane, three thru lanes, and one right-turn lane for the southbound approach;
- Two left-turn lanes, one thru lane, and one right-turn lane for the eastbound approach;
- One left-turn lane, one thru lane, and one right-turn lane for the westbound approach.

These improvements are assumed to be in place for all Near Term intersection operations analyses.

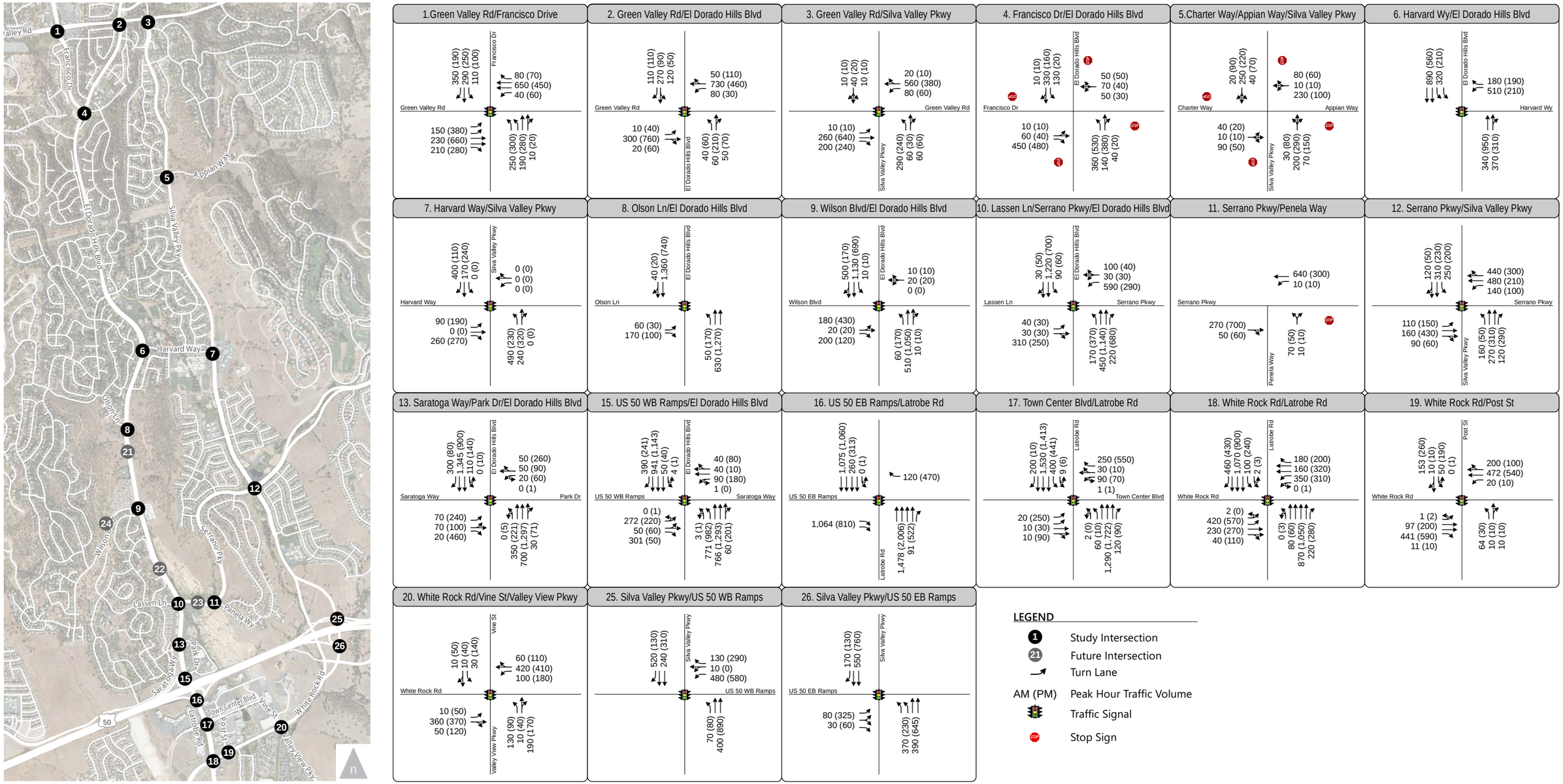
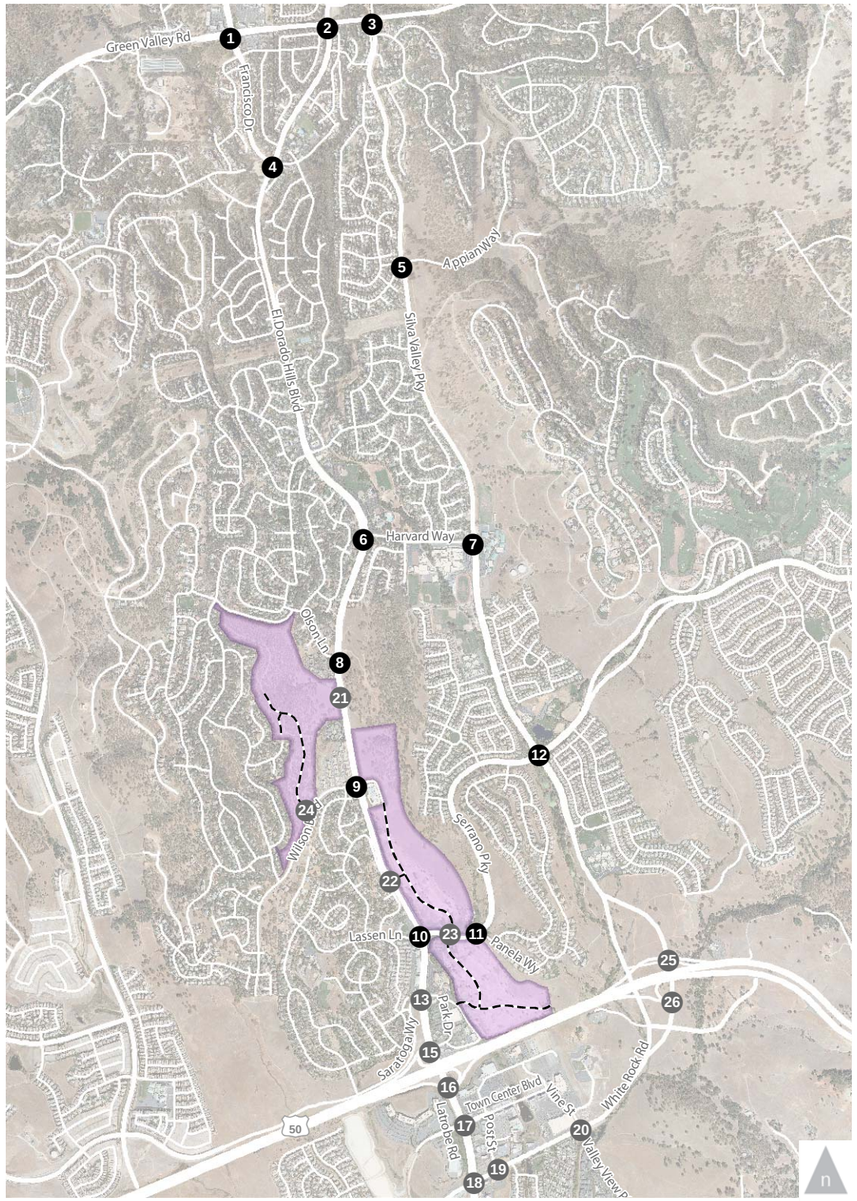
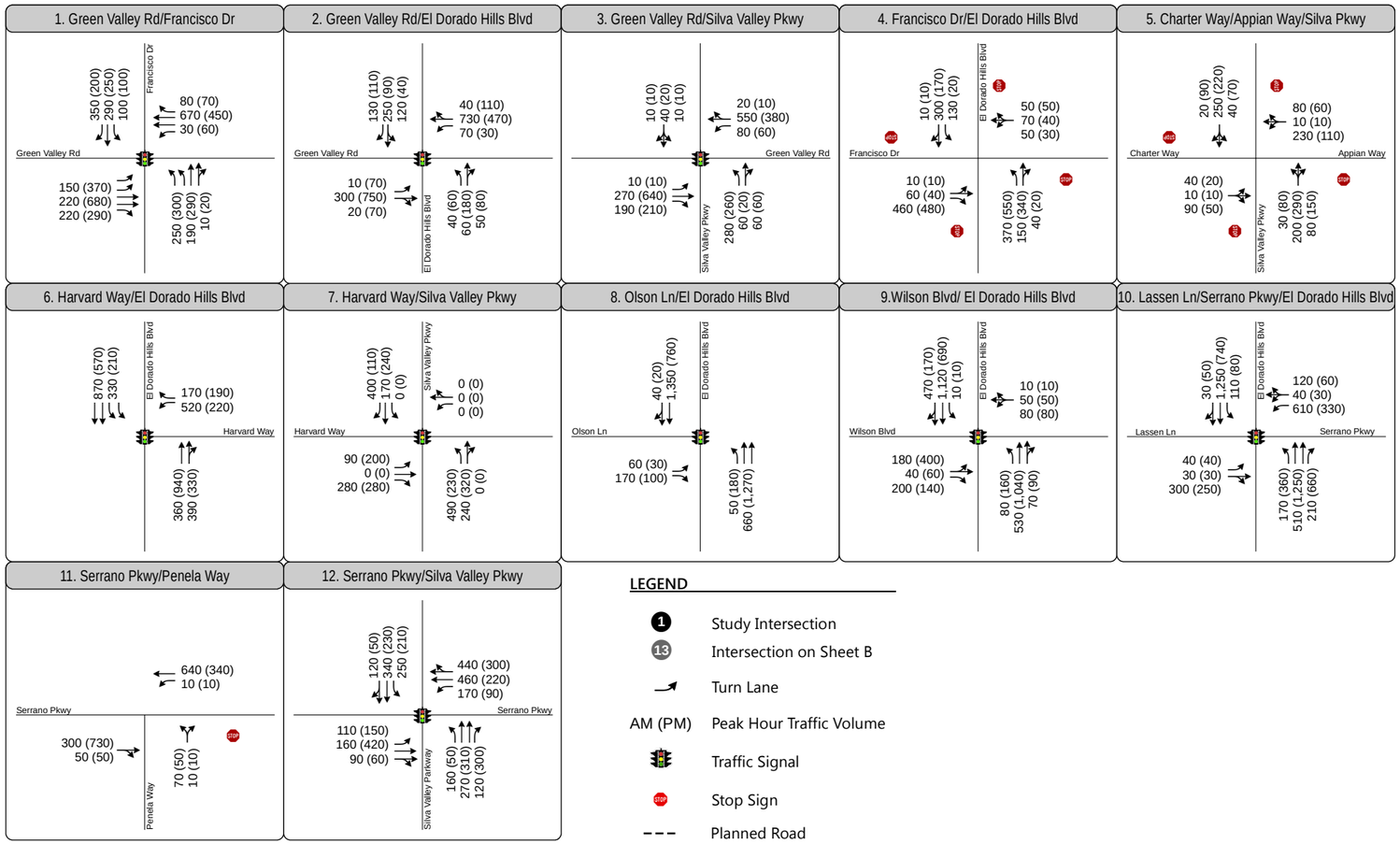


Figure 1

Peak Hour Traffic Volumes and Lane Configurations - Near-Term Conditions





LEGEND

1	Study Intersection
13	Intersection on Sheet B
	Turn Lane
AM (PM)	Peak Hour Traffic Volume
	Traffic Signal
	Stop Sign
	Planned Road
	Project Site

Figure 2A

Peak Hour Traffic Volumes and Lane Configurations - Near-Term Plus Project Conditions

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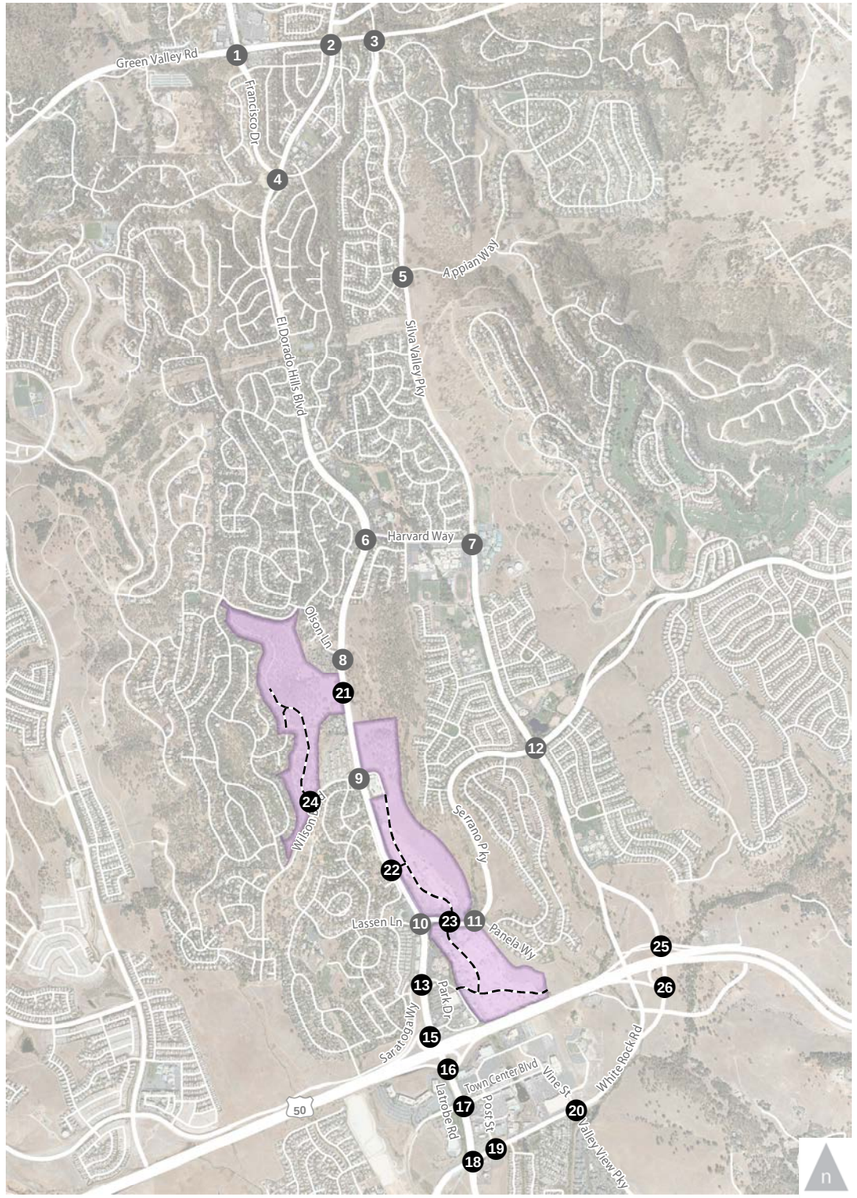

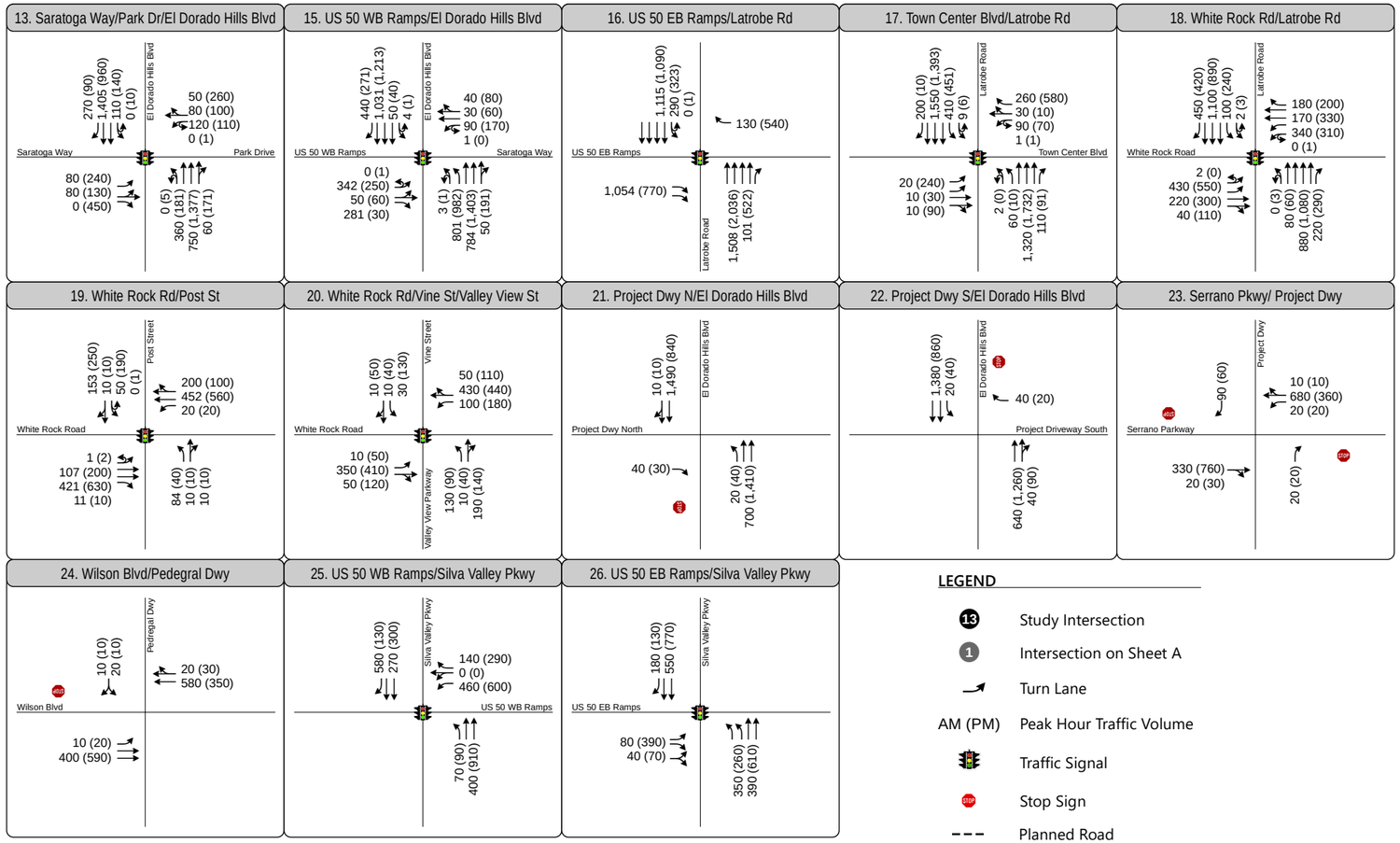

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- 13 — Study Intersection
- 1 — Intersection on Sheet A
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- Planned Road
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Figure 2B

Peak Hour Traffic Volumes and Lane Configurations - Near-Term Plus Project Conditions

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NEAR-TERM NO PROJECT OPERATIONS

The following summarizes intersection and freeway operations under near-term conditions.

Intersections

Table 2 compares existing AM and PM peak hour intersection operations to near-term conditions. As shown in Table 2, all study intersections will continue to operate acceptably, at LOS E or better, with the addition of 10 years of land use growth and the capital projects planned to begin construction in 10 years, except for the Silva Valley Parkway / Appian Way intersection during the AM Peak Hour.

TABLE 2: INTERSECTION LOS AND DELAY – NEAR-TERM CONDITIONS

Intersection	Control	Existing (LOS/Delay)		Near-Term (LOS/Delay)	
		AM	PM	AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 40	D / 46	D / 37	D / 40
2. Green Valley Rd / El Dorado Hills Blvd / Salmon Falls Rd	Signal	E / 67	D / 46	E / 67	D / 41
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 31	B / 20	C / 23	B / 17
4. Francisco Dr / El Dorado Hills Blvd	AWSC	C / 17	C / 19	C / 26	B / 13
5. Silva Valley Pkwy / Appian Wy	AWSC	C / 23	B / 15	**F / 85**	D / 35
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 30	B / 17	C / 30	B / 15
7. Silva Valley Pkwy / Harvard Wy	Signal	D / 39	C / 22	B / 13	B / 11
8. El Dorado Hills Blvd / Olson Ln	Signal	B / 12	A / 9	A / 6	A / 5
9. El Dorado Hills Blvd / Wilson Blvd	Signal	B / 20	B / 16	C / 23	D / 52
10. El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	D / 49	C / 21	D / 44	C / 27
11. Serrano Pkwy / Penela Wy	SSSC	D / 32	C / 23	E / 36	E / 37
12. Serrano Pkwy / Silva Valley Pkwy	Signal	D / 40	C / 30	D / 39	C / 26
13. El Dorado Hills Blvd / Park Dr / Saratoga Wy	Signal	B / 19	C / 20	D / 46	D / 46
15. El Dorado Hills Blvd / Saratoga Wy / US 50 WB Ramps	Signal	C / 31	C / 33	D / 47	D / 37
16. Latrobe Rd / US 50 EB Ramps	Signal	C / 33	C / 20	C / 20	B / 19
17. Latrobe Rd / Town Center Blvd	Signal	B / 16	D / 50	C / 22	D / 44
18. Latrobe Rd / White Rock Rd	Signal	C / 31	C / 27	D / 35	C / 31
19. White Rock Rd / Post St	Signal	C / 24	C / 31	B / 17	C / 31
20. White Rock Rd / Valley View Dr / Vine St	Signal	C / 21	C / 27	B / 20	C / 27
21. El Dorado Hills Blvd / Project Dwy (North)	SSSC	-	-	-	-
22. El Dorado Hills Blvd / Project Dwy (South)	SSSC	-	-	-	-
23. Serrano Pkwy / Project Dwy	SSSC	-	-	-	-
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	-	-

TABLE 2: INTERSECTION LOS AND DELAY – NEAR-TERM CONDITIONS

Intersection	Control	Existing (LOS/Delay)		Near-Term (LOS/Delay)	
		AM	PM	AM	PM
25. Silva Valley Pkwy / US 50 WB Ramps	Signal	B / 11	A / 10	A / 10	A / 10
26. Silva Valley Pkwy / US 50 EB Ramps	Signal	B / 10	B / 13	B / 10	B / 11

Notes: AWSC = all-way stop control

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For TWSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010). Intersections 1-12, and 25-26 were analyzed in Synchro 9. Intersections 13-18 were analyzed in SimTraffic.

Bold text indicates an unacceptable LOS.

Source: Fehr & Peers, 2017

Freeway Facilities

Table 3 compares existing AM and PM peak hour freeway operations to near-term conditions. As shown in Table 3, all freeway facilities will continue to operate acceptably, at LOS E or better, with the addition of 10 years of land use growth and the capital projects planned to begin construction in 10 years.

TABLE 3: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Near-Term Density[1] / LOS	
			AM	PM	AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	30 / D	22 / C	27 / C
	El Dorado Hills Boulevard off-ramp	Diverge	14 / B	26 / C	13 / B	23 / C
	El Dorado Hills Boulevard on-ramp to Silva Valley Parkway off-ramp	Weave (HCM)[2]	10 / A	23 / C	11 / B	23 / C
		Basic	7 / A	15 / B	7 / A	14 / B
	Silva Valley Parkway on-ramp (loop)	Merge	11 / B	21 / C	15 / B	20 / C
	Silva Valley Parkway on-ramp to Bass Lake Road off-ramp	Basic	11 / A	20 / C	14 / B	19 / C
	Bass Lake Road off-ramp	Diverge	15 / B	25 / C	18 / B	25 / C
	Bass Lake Road on-ramp	Merge	16 / B	27 / C	20 / C	27 / C
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Basic	14 / B	25 / C	18 / B	24 / C
	Cambridge Road off-ramp	Diverge	18 / B	30 / D	23 / C	30 / D
	Cambridge Road on-ramp	Merge	19 / B	26 / C	23 / C	25 / C
US 50 WB	Cambridge Road off-ramp	Diverge	28 / C	23 / C	28 / D	29 / D
	Cambridge Road on-ramp	Merge	20 / B	13 / B	21 / C	19 / B
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic	23 / C	17 / B	25 / C	23 / C
	Bass Lake Road off-ramp	Diverge	29 / D	21 / C	30 / D	28 / D
	Bass Lake Road on-ramp	Merge	32 / D	21 / C	33 / D	27 / C
	Bass Lake Road on-ramp to lane addition	Basic	29 / D	17 / B	30 / D	24 / C
	Lane addition to Silva Valley Parkway off-ramp	Basic	19 / C	12 / B	19 / C	16 / B

TABLE 3: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Near-Term Density[1] / LOS	
			AM	PM	AM	PM
	Silva Valley Parkway off-ramp	Diverge	13 / B	5 / A	14 / B	11 / B
	Silva Valley Parkway on-ramp to El Dorado Hills Boulevard off-ramp	Weave (HCM)[2]	34 / D	18 / B	36 / E	21 / C
		Basic	19 / C	11 / A	19 / C	13 / B
	El Dorado Hills Boulevard on-ramp	Merge	34 / D	24 / C	34 / D	24 / C

Notes: [1]Density reported as passenger cars per mile per pane. Density is not reported for LOS F operations.
[2] This weave section lies outside the realm of weaving using the Leisch Method. As a result, it is analyzed as a basic segment.
Source: Fehr & Peers, 2017

NEAR-TERM PLUS PROJECT OPERATIONS

The following summarizes intersection and freeway operations under near-term conditions with the addition of the project.

Intersections

Table 4 compares AM and PM peak hour intersection operations under near-term conditions without and with the proposed project. As shown in Table 2, all study intersections will continue to operate acceptably, at LOS E or better, with the addition of project trips under near-term conditions, except for the Silva Valley Parkway / Appian Way intersection during the AM peak hour.

- Silva Valley Parkway / Apain Way (Intersection 5) - This intersection will operate at LOS F during the AM peak hour under near-term conditions without the project. According to County policy, the addition of the project would worsen conditions, since it would add 10 trips to the intersection during the AM Peak Hour.

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TABLE 4: INTERSECTION LOS AND DELAY – NEAR-TERM PLUS PROJECT CONDITIONS

Intersection	Control	Near-Term (LOS/Delay)		Near-Term Plus Project (LOS/Delay)	
		AM	PM	AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 37	D / 40	D / 37	D / 41
2. Green Valley Rd / El Dorado Hills Blvd / Salmon Falls Rd	Signal	E / 67	D / 41	E / 60	D / 38
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 23	B / 17	C / 22	B / 18
4. Francisco Dr / El Dorado Hills Blvd	AWSC	C / 26	B / 13	C / 22	B / 14
5. Silva Valley Pkwy / Appian Wy	AWSC	**F / 85**	D / 35	**F / 89**	E / 37
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 30	B / 15	C / 32	B / 16
7. Silva Valley Pkwy / Harvard Wy	Signal	B / 13	B / 11	B / 13	B / 12
8. El Dorado Hills Blvd / Olson Ln	Signal	A / 6	A / 5	A / 6	A / 6
9. El Dorado Hills Blvd / Wilson Blvd	Signal	C / 23	D / 52	E / 59	E / 68
10. El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	D / 44	C / 27	E / 62	C / 32
11. Serrano Pkwy / Penela Wy	SSSC	E / 36	E / 37	E / 39	E / 43
12. Serrano Pkwy / Silva Valley Pkwy	Signal	D / 39	C / 26	D / 39	C / 26
13. El Dorado Hills Blvd / Park Dr / Saratoga Wy	Signal	D / 46	D / 46	E / 72	D / 51
15. El Dorado Hills Blvd / Saratoga Wy / US 50 WB Ramps	Signal	D / 47	D / 37	D / 39	E / 56
16. Latrobe Rd / US 50 EB Ramps	Signal	C / 20	B / 19	B / 19	B / 18
17. Latrobe Rd / Town Center Blvd	Signal	C / 22	D / 44	C / 21	D / 47
18. Latrobe Rd / White Rock Rd	Signal	D / 35	C / 31	C / 35	D / 36
19. White Rock Rd / Post St	Signal	B / 17	C / 31	B / 19	C / 29
20. White Rock Rd / Valley View Dr / Vine St	Signal	B / 20	C / 27	B / 20	C / 27
21. El Dorado Hills Blvd / Project Dwy (North)	SSSC	-	-	C / 18	B / 12
22. El Dorado Hills Blvd / Project Dwy (South)	SSSC	-	-	B / 11	C / 16
23. Serrano Pkwy / Project Dwy	SSSC	-	-	C / 16	C / 16
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	C / 16	B / 13

TABLE 4: INTERSECTION LOS AND DELAY – NEAR-TERM PLUS PROJECT CONDITIONS

Intersection	Control	Near-Term (LOS/Delay)		Near-Term Plus Project (LOS/Delay)	
		AM	PM	AM	PM
25. Silva Valley Pkwy / US 50 WB Ramps	Signal	A / 10	A / 10	A / 10	A / 10
26. Silva Valley Pkwy / US 50 EB Ramps	Signal	B / 10	B / 11	B / 10	B / 12

Notes: AWSC = all-way stop control

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For TWSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010). Intersections 1-12, and 25-26 were analyzed in Synchro 9. Intersections 13-18 were analyzed in SimTraffic.

Bold text indicates an unacceptable LOS. Underlined indicates a significant impact.

Source: Fehr & Peers, 2017

Freeway Facilities

Table 5 compares AM and PM peak hour freeway operations under near-term conditions without and with the proposed project. As shown in Table 5, all freeway facilities will continue to operate acceptably, at LOS E or better, with the addition of project trips.

TABLE 5: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM PLUS PROJECT CONDITIONS

Freeway	Segment	Facility Type	Near-Term Density[1] / LOS		Near-Term Plus Project Density[1] / LOS	
			AM	AM	AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	27 / C	22 / C	27 / C
	El Dorado Hills Boulevard off-ramp	Diverge	13 / B	23 / C	14 / B	23 / C
	El Dorado Hills Boulevard on-ramp to Silva Valley Parkway off-ramp	Weave (HCM)[2]	11 / B	23 / C	11 / B	23 / C
		Basic	7 / A	14 / B	8 / A	14 / B
	Silva Valley Parkway on-ramp (loop)	Merge	15 / B	20 / C	15 / B	20 / C
	Silva Valley Parkway on-ramp to Bass Lake Road off-ramp	Basic	14 / B	19 / C	14 / B	19 / C
	Bass Lake Road off-ramp	Diverge	18 / B	25 / C	18 / B	25 / C

TABLE 5: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM PLUS PROJECT CONDITIONS

Freeway	Segment	Facility Type	Near-Term Density[1] / LOS		Near-Term Plus Project Density[1] / LOS	
			AM	AM	AM	PM
	Bass Lake Road on-ramp	Merge	20 / C	27 / C	21 / C	27 / C
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Basic	18 / B	24 / C	18 / B	24 / C
	Cambridge Road off-ramp	Diverge	23 / C	30 / D	23 / C	30 / D
	Cambridge Road on-ramp	Merge	23 / C	25 / C	23 / C	25 / C
US 50 WB	Cambridge Road off-ramp	Diverge	28 / D	29 / D	28 / D	27 / C
	Cambridge Road on-ramp	Merge	21 / C	19 / B	21 / C	17 / B
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic	25 / C	23 / C	25 / C	21 / C
	Bass Lake Road off-ramp	Diverge	30 / D	28 / D	30 / D	26 / C
	Bass Lake Road on-ramp	Merge	33 / D	27 / C	32 / D	25 / C
	Bass Lake Road on-ramp to lane addition	Basic	30 / D	24 / C	30 / D	22 / C
	Lane addition to Silva Valley Parkway off-ramp	Basic	19 / C	16 / B	19 / C	15 / B
	Silva Valley Parkway off-ramp	Diverge	14 / B	11 / B	14 / B	10 / A
	Silva Valley Parkway on-ramp to El Dorado Hills Boulevard off-ramp	Weave (HCM)[2]	36 / E	21 / C	37 / E	19 / B
		Basic	19 / C	13 / B	20 / C	11 / B
	El Dorado Hills Boulevard on-ramp	Merge	34 / D	24 / C	34 / D	25 / C

Notes: [1]Density reported as passenger cars per mile per pane. Density is not reported for LOS F operations.

[2] This weave section lies outside the realm of weaving using the Leisch Method. As a result, it is analyzed as a basic segment.

Source: Fehr & Peers, 2017

RECOMMENDED IMPROVEMENTS

The following outlines recommended improvements for the identified operational deficiencies.

Intersections

The addition of the project results in an intersection impact at Silva Valley Parkway / Appian Way under Near Term Plus Project conditions. The following improvements are recommended to provide acceptable operations during the AM and PM Peak Hours.

- Install a traffic signal with protect left-turn phasing north and southbound and split phasing east and westbound
- Provide one left-turn lane and a shared through / right-turn lane on the north and southbound approaches

The intersection satisfies the Peak Hour Signal Warrant under the Near-Term Plus Project AM Peak Hour Conditions. Table 6 shows the AM and PM peak hour operations with the recommended improvements.

TABLE 6: INTERSECTION LOS AND DELAY – NEAR-TERM PLUS PROJECT (IMPROVED) CONDITIONS

Intersection	Control	Near-Term (LOS/Delay)		Near-Term Plus Project (LOS/Delay)		Near-Term Plus Project (Improved) (LOS/Delay)	
		AM	PM	AM	PM	AM	PM
5. Silva Valley Pkwy / Appian Wy	AWSC	**F / 85**	D / 35	**F / 89**	E / 37	C / 24	B / 17

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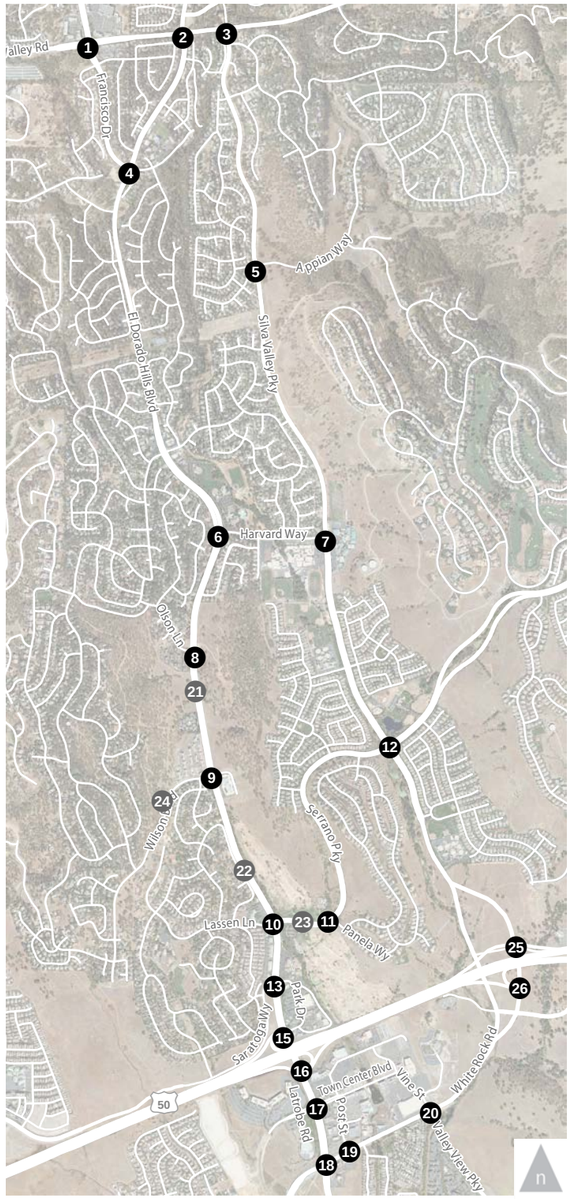
Country Club Drive Realignment - Bass Lake Road to Tierra De Dios Drive	Realign Country Club Drive from Bass Lake Road/Old Bass Lake Road to Tierra de Dios Drive. Work includes constructing a 2-lane road with 8-foot paved shoulders, sidewalk, curb and gutter. CIP#71360	By 2018
Green Valley Road Widening – County Line to Sophia Parkway	Widen Green Valley Rd from County line to Sophia Parkway from two to four lanes. CIP#72376	By 2017
Saratoga Way Ext - Phase 1	Construct new 2-lane arterial to extend Saratoga Wy. from current terminus near Finders Wy to Sacramento County Line; includes median, 6-ft shoulders, right-turn pocket onto Finders Way, asphalt path, drainage system, environmental clearance and secure ROW for future 4-lane road from County Line to El Dorado Hills Blvd. CIP#71324	By 2018
Silver Springs Parkway to Bass Lake Road (South Segment)	Realign Bass Lake Road south of Green Valley Road through the proposed Silver Springs subdivision, which is west of the existing Bass Lake Road. The new road is named Silver Springs Parkway. That development is responsible for building Silver Springs Parkway through their development. Silver Springs Parkway will be a 2-lane standard divided roadway with shoulders. CIP#76108	By 2018
US 50 Auxiliary Lane Westbound – Bass Lake Road to Silva Valley Parkway	Widen US 50 to add an auxiliary lane to westbound US 50 connecting the Bass Lake Road Interchange and Silva Valley Parkway Interchange. Timing of construction to be concurrent with or after the Bass Lake Road Interchange improvement. CIP#53117	By 2026
US 50 / El Dorado Hills Blvd Interchange Improvements – (Phase 2B)	Reconstruct eastbound diagonal on-ramp and eastbound loop off-ramp for the ultimate configuration; add a lane to northbound El Dorado Hills Blvd under the overpass (eliminates merge lane and improves traffic flow from the eastbound loop off-ramp); eastbound diagonal on-ramp will be metered and have an HOV bypass. Project split from ELD15630 (CIP#71323).	By 2026
White Rock Rd Widening - Manchester to Sacramento County Line (Connector Segment)	Widen White Rock Rd from 2 to 4 lanes, divided, from Manchester Dr. west to Sacramento County Line. CIP#GP137	By 2026

Source: El Dorado County's Adopted 2016 Capital Improvement Program, December 6, 2016. (Section 4.1 – West Slope Road/Bridge Individual Project Summaries)

The following figures show AM and PM peak hour traffic volume forecasts used for the analysis of Near-Term conditions:

- Figure 1 – Peak Hour Traffic Volumes and Lane Configurations – Near-Term No Project
- Figure 2 (A & B) – Peak Hour Traffic Volumes and Lane Configurations – Near-Term Plus Project



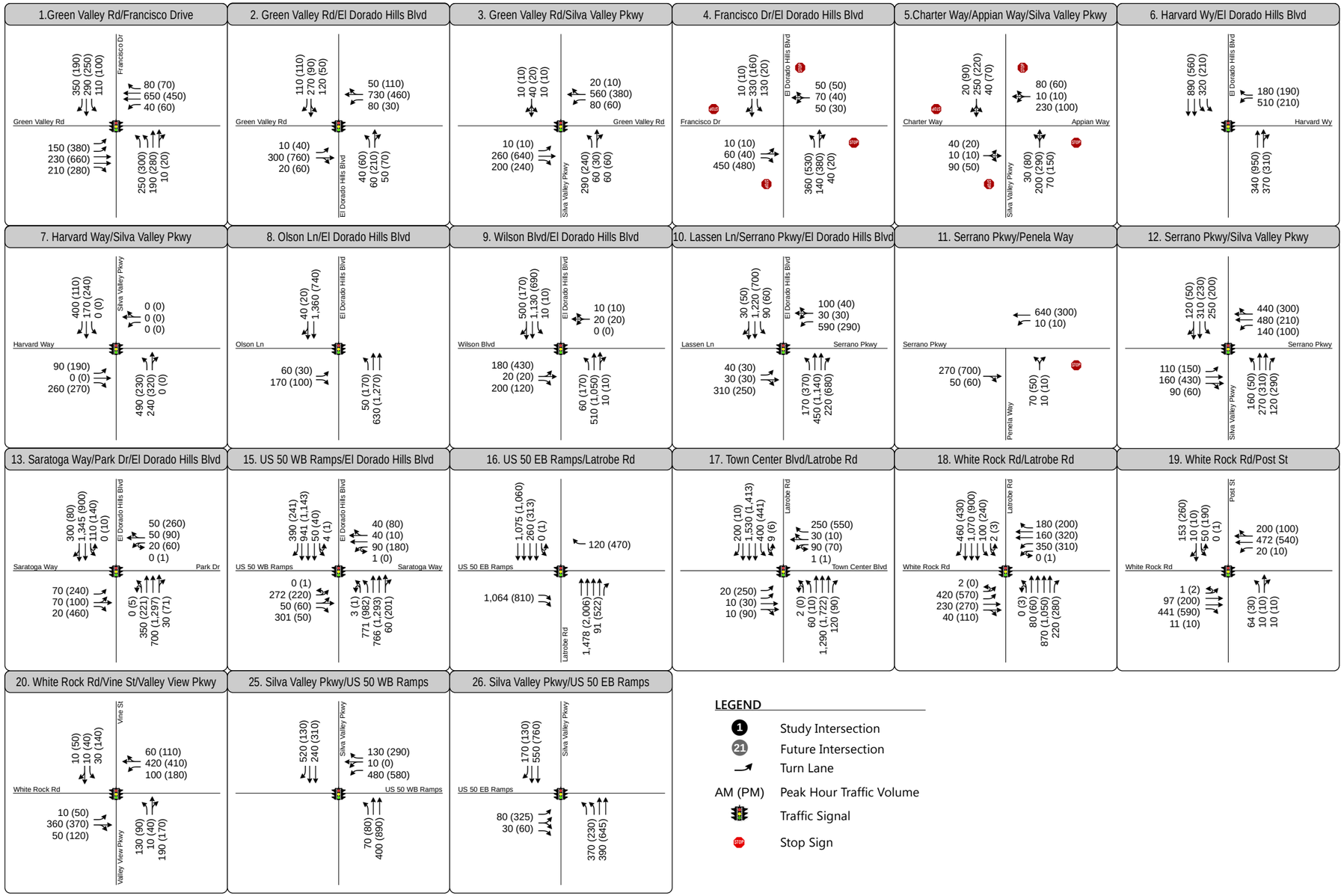


Figure 1

Peak Hour Traffic Volumes and Lane Configurations - Near-Term Conditions

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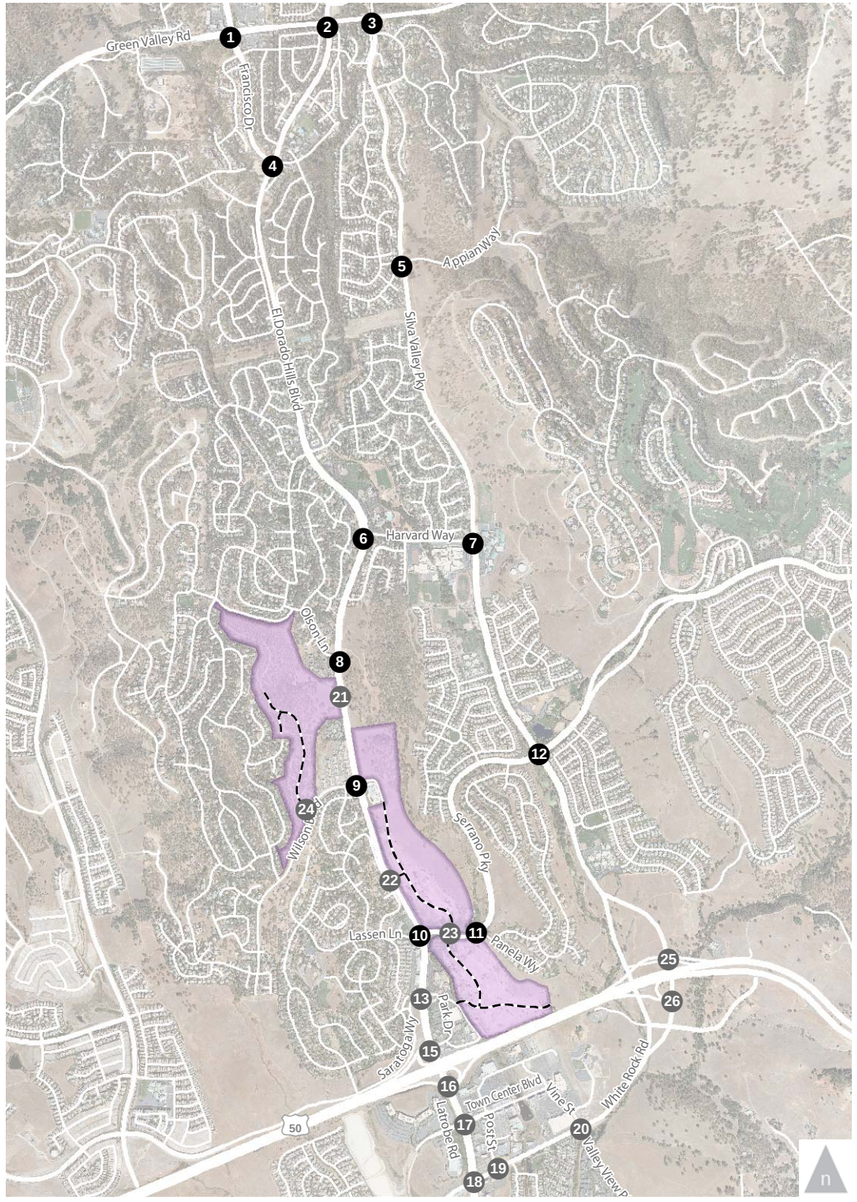

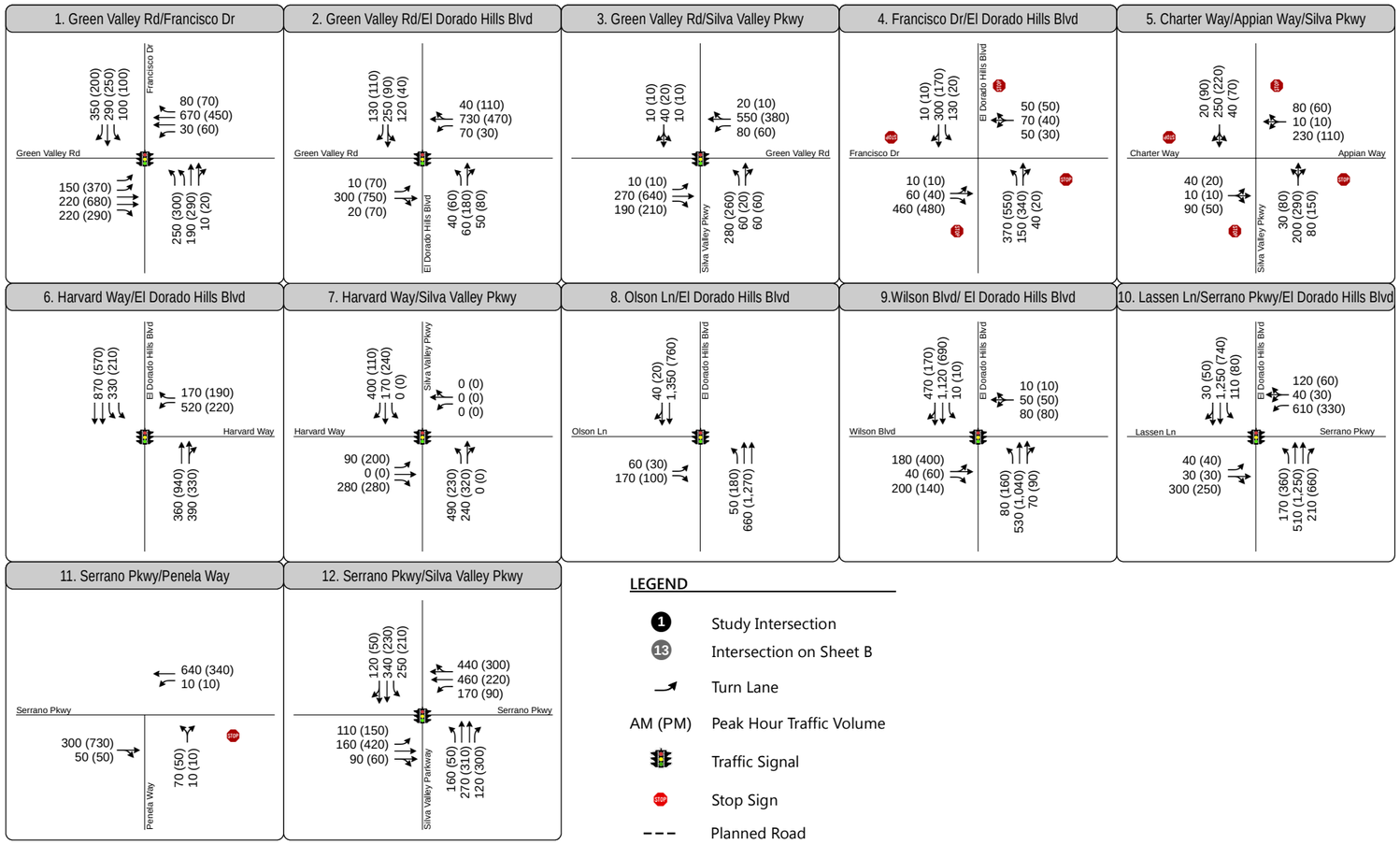

LEGEND

1	Study Intersection
13	Intersection on Sheet B
	Turn Lane
AM (PM)	Peak Hour Traffic Volume
	Traffic Signal
	Stop Sign
	Planned Road
	Project Site

Figure 2A

Peak Hour Traffic Volumes and Lane Configurations - Near-Term Plus Project Conditions

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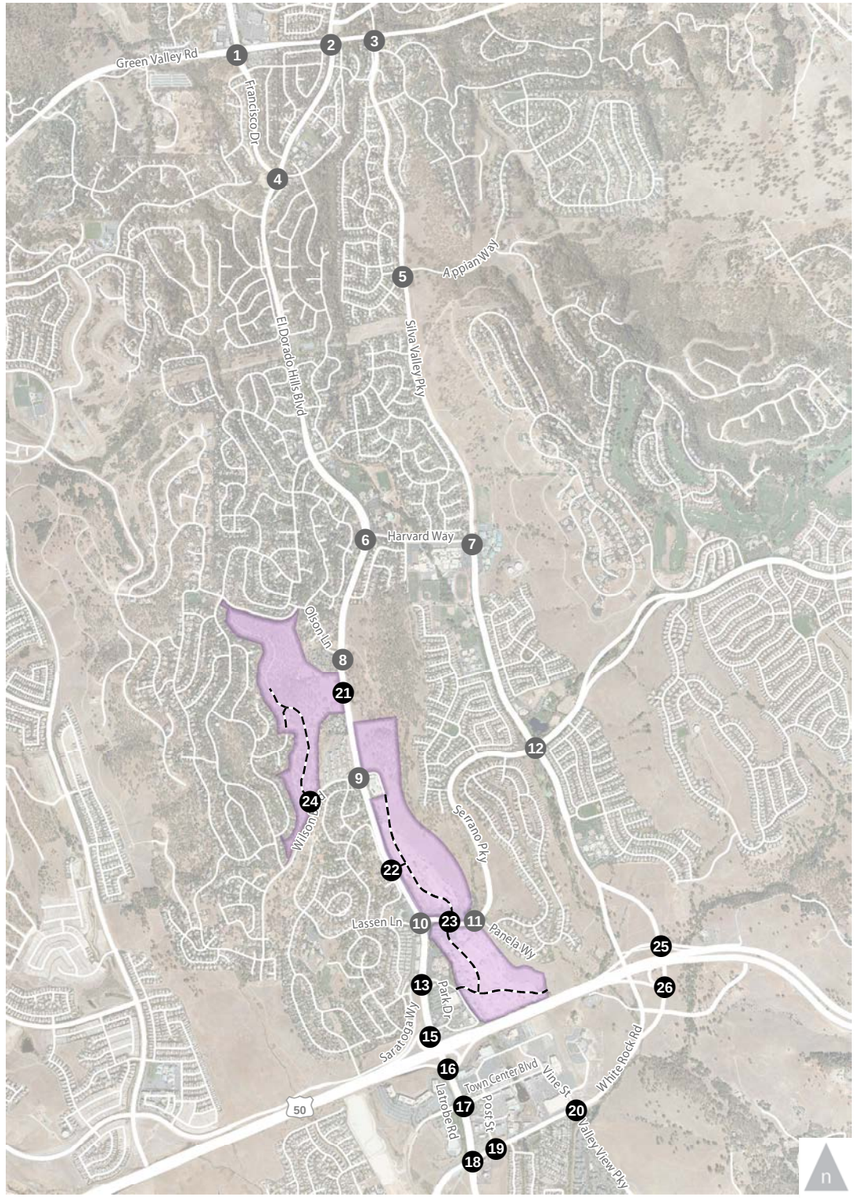

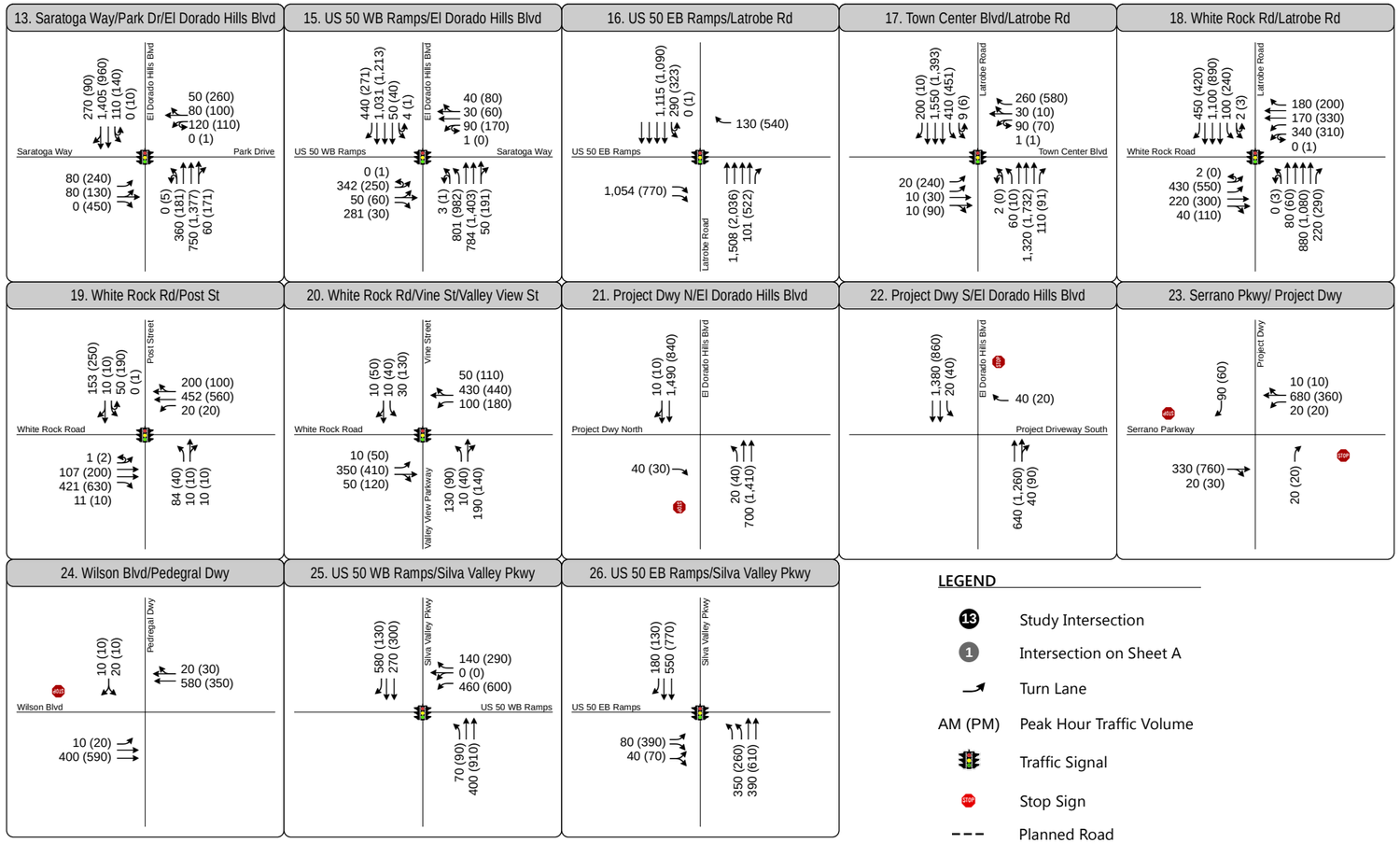

LEGEND

- 13 — Study Intersection
- 1 — Intersection on Sheet A
- Turn Lane
- AM (PM) — Peak Hour Traffic Volume
- Traffic Signal
- Stop Sign
- Planned Road
- Project Site

Figure 2B

Peak Hour Traffic Volumes and Lane Configurations - Near-Term Plus Project Conditions

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NEAR-TERM NO PROJECT OPERATIONS

The following summarizes intersection and freeway operations under near-term conditions.

Intersections

Table 2 compares existing AM and PM peak hour intersection operations to near-term conditions. As shown in Table 2, all study intersections will continue to operate acceptably, at LOS E or better, with the addition of 10 years of land use growth and the capital projects planned to begin construction in 10 years, except for the Silva Valley Parkway / Appian Way and the El Dorado Hills Boulevard / Saratoga Way / Park Drive intersections during the AM Peak Hour.

TABLE 2: INTERSECTION LOS AND DELAY – NEAR-TERM CONDITIONS

Intersection	Control	Existing (LOS/Delay)		Near-Term (LOS/Delay)	
		AM	PM	AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 40	D / 46	D / 37	D / 40
2. Green Valley Rd / El Dorado Hills Blvd / Salmon Falls Rd	Signal	E / 67	D / 46	E / 67	D / 41
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 31	B / 20	C / 23	B / 17
4. Francisco Dr / El Dorado Hills Blvd	AWSC	C / 17	C / 19	C / 26	B / 13
5. Silva Valley Pkwy / Appian Wy	AWSC	C / 23	B / 15	**F / 85**	D / 35
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 30	B / 17	C / 30	B / 15
7. Silva Valley Pkwy / Harvard Wy	Signal	D / 39	C / 22	B / 13	B / 11
8. El Dorado Hills Blvd / Olson Ln	Signal	B / 12	A / 9	A / 6	A / 5
9. El Dorado Hills Blvd / Wilson Blvd	Signal	B / 20	B / 16	C / 23	D / 52
10. El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	D / 49	C / 21	D / 44	C / 27
11. Serrano Pkwy / Penela Wy	SSSC	D / 32	C / 23	E / 36	E / 37
12. Serrano Pkwy / Silva Valley Pkwy	Signal	D / 40	C / 30	D / 39	C / 26
13. El Dorado Hills Blvd / Saratoga Way / Park Dr	Signal	B / 19	C / 20	**F / 108**	D / 47
15. El Dorado Hills Blvd / US 50 WB Ramps / Park Dr	Signal	C / 31	C / 33	D / 44	D / 37
16. Latrobe Rd / US 50 EB Ramps	Signal	C / 33	C / 20	B / 20	B / 18
17. Latrobe Rd / Town Center Blvd	Signal	B / 16	D / 50	C / 20	D / 47
18. Latrobe Rd / White Rock Rd	Signal	C / 31	C / 27	C / 35	C / 33
19. White Rock Rd / Post St	Signal	C / 24	C / 31	B / 17	C / 31
20. White Rock Rd / Valley View Dr / Vine St	Signal	C / 21	C / 27	B / 20	C / 27
21. El Dorado Hills Blvd / Project Dwy (North)	SSSC	-	-	-	-
22. El Dorado Hills Blvd / Project Dwy (South)	SSSC	-	-	-	-
23. Serrano Pkwy / Project Dwy	SSSC	-	-	-	-

TABLE 2: INTERSECTION LOS AND DELAY – NEAR-TERM CONDITIONS

Intersection	Control	Existing (LOS/Delay)		Near-Term (LOS/Delay)	
		AM	PM	AM	PM
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	-	-
25. Silva Valley Pkwy / US 50 WB Ramps	Signal	B / 11	A / 10	A / 10	A / 10
26. Silva Valley Pkwy / US 50 EB Ramps	Signal	B / 10	B / 13	B / 10	B / 11

Notes: AWSC = all-way stop control

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For TWSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010). Intersections 1-12, and 25-26 were analyzed in Synchro 9. Intersections 13-18 were analyzed in SimTraffic.

Bold text indicates an unacceptable LOS.

Source: Fehr & Peers, 2017

Freeway Facilities

Table 3 compares existing AM and PM peak hour freeway operations to near-term conditions. As shown in Table 3, all freeway facilities will continue to operate acceptably, at LOS E or better, with the addition of 10 years of land use growth and the capital projects planned to begin construction in 10 years.

TABLE 3: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Near-Term Density[1] / LOS	
			AM	PM	AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	30 / D	22 / C	27 / C
	El Dorado Hills Boulevard off-ramp	Diverge	14 / B	26 / C	13 / B	23 / C
	El Dorado Hills Boulevard on-ramp to Silva Valley Parkway off-ramp	Weave (HCM)[2]	10 / A	23 / C	11 / B	23 / C
		Basic	7 / A	15 / B	7 / A	14 / B
	Silva Valley Parkway on-ramp (loop)	Merge	11 / B	21 / C	15 / B	20 / C
	Silva Valley Parkway on-ramp to Bass Lake Road off-ramp	Basic	11 / A	20 / C	14 / B	19 / C
	Bass Lake Road off-ramp	Diverge	15 / B	25 / C	18 / B	25 / C
	Bass Lake Road on-ramp	Merge	16 / B	27 / C	20 / C	27 / C

TABLE 3: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM CONDITIONS

Freeway	Segment	Facility Type	Existing Density[1] / LOS		Near-Term Density[1] / LOS	
			AM	PM	AM	PM
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Basic	14 / B	25 / C	18 / B	24 / C
	Cambridge Road off-ramp	Diverge	18 / B	30 / D	23 / C	30 / D
	Cambridge Road on-ramp	Merge	19 / B	26 / C	23 / C	25 / C
US 50 WB	Cambridge Road off-ramp	Diverge	28 / C	23 / C	28 / D	29 / D
	Cambridge Road on-ramp	Merge	20 / B	13 / B	21 / C	19 / B
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic	23 / C	17 / B	25 / C	23 / C
	Bass Lake Road off-ramp	Diverge	29 / D	21 / C	30 / D	28 / D
	Bass Lake Road on-ramp	Merge	32 / D	21 / C	33 / D	27 / C
	Bass Lake Road on-ramp to lane addition	Basic	29 / D	17 / B	30 / D	24 / C
	Lane addition to Silva Valley Parkway off-ramp	Basic	19 / C	12 / B	19 / C	16 / B
	Silva Valley Parkway off-ramp	Diverge	13 / B	5 / A	14 / B	11 / B
	Silva Valley Parkway on-ramp to El Dorado Hills Boulevard off-ramp	Weave (HCM)[2]	34 / D	18 / B	36 / E	21 / C
		Basic	19 / C	11 / A	19 / C	13 / B
	El Dorado Hills Boulevard on-ramp	Merge	34 / D	24 / C	34 / D	24 / C

Notes: [1]Density reported as passenger cars per mile per pane. Density is not reported for LOS F operations.

[2] This weave section lies outside the realm of weaving using the Leisch Method. As a result, it is analyzed as a basic segment.

Source: Fehr & Peers, 2017

NEAR-TERM PLUS PROJECT OPERATIONS

The following summarizes intersection and freeway operations under near-term conditions with the addition of the project.

Intersections

Table 4 compares AM and PM peak hour intersection operations under near-term conditions without and with the proposed project. As shown in Table 2, all study intersections will continue to operate acceptably, at LOS E or better, with the addition of project trips under near-term conditions, except for the Silva Valley Parkway / Appian Way and the El Dorado Hills Boulevard / Saratoga Way / Park Drive intersections during the AM peak hour.

- Silva Valley Parkway / Apain Way (Intersection 5) - This intersection will operate at LOS F during the AM peak hour under near-term conditions without the project. According to County policy, the addition of the project would worsen conditions, since it would add 10 trips to the intersection during the AM Peak Hour.

- El Dorado Hills Boulevard / Saratoga Way / Park Drive (Intersection 13) – The intersection will operate at LOS F during the AM peak hour under near-term conditions without the project. According to County policy, the addition of the project would worsen conditions, since it would add 10 or more trips to the intersection during the AM peak hour.

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TABLE 4: INTERSECTION LOS AND DELAY – NEAR-TERM PLUS PROJECT CONDITIONS

Intersection	Control	Near-Term (LOS/Delay)		Near-Term Plus Project (LOS/Delay)	
		AM	PM	AM	PM
1. Green Valley Rd / Francisco Dr	Signal	D / 37	D / 40	D / 37	D / 41
2. Green Valley Rd / El Dorado Hills Blvd / Salmon Falls Rd	Signal	E / 67	D / 41	E / 60	D / 38
3. Green Valley Rd / Silva Valley Pkwy	Signal	C / 23	B / 17	C / 22	B / 18
4. Francisco Dr / El Dorado Hills Blvd	AWSC	C / 26	B / 13	C / 22	B / 14
5. Silva Valley Pkwy / Appian Wy	AWSC	**F / 85**	D / 35	**F / 89**	E / 37
6. El Dorado Hills Blvd / Harvard Wy	Signal	C / 30	B / 15	C / 32	B / 16
7. Silva Valley Pkwy / Harvard Wy	Signal	B / 13	B / 11	B / 13	B / 12
8. El Dorado Hills Blvd / Olson Ln	Signal	A / 6	A / 5	A / 6	A / 6
9. El Dorado Hills Blvd / Wilson Blvd	Signal	C / 23	D / 52	E / 59	E / 68
10. El Dorado Hills Blvd / Serrano Pkwy / Lassen Ln	Signal	D / 44	C / 27	E / 62	C / 32
11. Serrano Pkwy / Penela Wy	SSSC	E / 36	E / 37	E / 39	E / 43
12. Serrano Pkwy / Silva Valley Pkwy	Signal	D / 39	C / 26	D / 39	C / 26
13. El Dorado Hills Blvd / Saratoga Wy / Park Dr	Signal	**F / 108**	D / 47	**F / 175**	D / 51
15. El Dorado Hills Blvd / US 50 WB Ramps / Park Dr	Signal	D / 44	D / 37	D / 41	D / 44
16. Latrobe Rd / US 50 EB Ramps	Signal	B / 20	B / 18	B / 18	B / 18
17. Latrobe Rd / Town Center Blvd	Signal	C / 20	D / 47	C / 22	D / 44
18. Latrobe Rd / White Rock Rd	Signal	C / 35	C / 33	C / 35	C / 32
19. White Rock Rd / Post St	Signal	B / 17	C / 31	B / 19	C / 29
20. White Rock Rd / Valley View Dr / Vine St	Signal	B / 20	C / 27	B / 20	C / 27
21. El Dorado Hills Blvd / Project Dwy (North)	SSSC	-	-	C / 18	B / 12
22. El Dorado Hills Blvd / Project Dwy (South)	SSSC	-	-	B / 11	C / 16
23. Serrano Pkwy / Project Dwy	SSSC	-	-	C / 16	C / 16
24. Wilson Blvd / Pedregal Dwy	SSSC	-	-	C / 16	B / 13

TABLE 4: INTERSECTION LOS AND DELAY – NEAR-TERM PLUS PROJECT CONDITIONS

Intersection	Control	Near-Term (LOS/Delay)		Near-Term Plus Project (LOS/Delay)	
		AM	PM	AM	PM
25. Silva Valley Pkwy / US 50 WB Ramps	Signal	A / 10	A / 10	A / 10	A / 10
26. Silva Valley Pkwy / US 50 EB Ramps	Signal	B / 10	B / 11	B / 10	B / 12

Notes: AWSC = all-way stop control

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For TWSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010). Intersections 1-12, and 25-26 were analyzed in Synchro 9. Intersections 13-18 were analyzed in SimTraffic.

Bold text indicates an unacceptable LOS. Underlined indicates a significant impact.

Source: Fehr & Peers, 2017

Freeway Facilities

Table 5 compares AM and PM peak hour freeway operations under near-term conditions without and with the proposed project. As shown in Table 5, all freeway facilities will continue to operate acceptably, at LOS E or better, with the addition of project trips.

TABLE 5: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM PLUS PROJECT CONDITIONS

Freeway	Segment	Facility Type	Near-Term Density[1] / LOS		Near-Term Plus Project Density[1] / LOS	
			AM	AM	AM	PM
US 50 EB	Latrobe Rd off-ramp	Diverge	22 / C	27 / C	22 / C	27 / C
	El Dorado Hills Boulevard off-ramp	Diverge	13 / B	23 / C	14 / B	23 / C
	El Dorado Hills Boulevard on-ramp to Silva Valley Parkway off-ramp	Weave (HCM)[2]	11 / B	23 / C	11 / B	23 / C
		Basic	7 / A	14 / B	8 / A	14 / B
	Silva Valley Parkway on-ramp (loop)	Merge	15 / B	20 / C	15 / B	20 / C
	Silva Valley Parkway on-ramp to Bass Lake Road off-ramp	Basic	14 / B	19 / C	14 / B	19 / C
	Bass Lake Road off-ramp	Diverge	18 / B	25 / C	18 / B	25 / C

TABLE 5: FREEWAY FACILITY PEAK HOUR LEVEL OF SERVICE – NEAR-TERM PLUS PROJECT CONDITIONS

Freeway	Segment	Facility Type	Near-Term Density[1] / LOS		Near-Term Plus Project Density[1] / LOS	
			AM	AM	AM	PM
	Bass Lake Road on-ramp	Merge	20 / C	27 / C	21 / C	27 / C
	Bass Lake Road on-ramp to Cambridge Road off-ramp	Basic	18 / B	24 / C	18 / B	24 / C
	Cambridge Road off-ramp	Diverge	23 / C	30 / D	23 / C	30 / D
	Cambridge Road on-ramp	Merge	23 / C	25 / C	23 / C	25 / C
US 50 WB	Cambridge Road off-ramp	Diverge	28 / D	29 / D	28 / D	27 / C
	Cambridge Road on-ramp	Merge	21 / C	19 / B	21 / C	17 / B
	Cambridge Road on-ramp to Bass Lake Road off-ramp	Basic	25 / C	23 / C	25 / C	21 / C
	Bass Lake Road off-ramp	Diverge	30 / D	28 / D	30 / D	26 / C
	Bass Lake Road on-ramp	Merge	33 / D	27 / C	32 / D	25 / C
	Bass Lake Road on-ramp to lane addition	Basic	30 / D	24 / C	30 / D	22 / C
	Lane addition to Silva Valley Parkway off-ramp	Basic	19 / C	16 / B	19 / C	15 / B
	Silva Valley Parkway off-ramp	Diverge	14 / B	11 / B	14 / B	10 / A
	Silva Valley Parkway on-ramp to El Dorado Hills Boulevard off-ramp	Weave (HCM)[2]	36 / E	21 / C	37 / E	19 / B
		Basic	19 / C	13 / B	20 / C	11 / B
	El Dorado Hills Boulevard on-ramp	Merge	34 / D	24 / C	34 / D	25 / C

Notes: [1]Density reported as passenger cars per mile per pane. Density is not reported for LOS F operations.

[2] This weave section lies outside the realm of weaving using the Leisch Method. As a result, it is analyzed as a basic segment.

Source: Fehr & Peers, 2017

RECOMMENDED IMPROVEMENTS

The following outlines recommended improvements for the identified operational deficiencies.

Intersections

The addition of the project results in an intersection impact at Silva Valley Parkway / Appian Way under Near Term Plus Project conditions. The following improvements are recommended to provide acceptable operations during the AM and PM Peak Hours.

- Install a traffic signal with protect left-turn phasing north and southbound and split phasing east and westbound
- Provide one left-turn lane and a shared through / right-turn lane on the north and southbound approaches

The intersection satisfies the Peak Hour Signal Warrant under the Near-Term Plus Project AM Peak Hour Conditions.

The addition of the project results in an intersection impact at El Dorado Hills Blvd / Saratoga Way / Park Drive under Near Term Plus Project conditions. The following improvements are recommended to provide acceptable operations during the AM and PM Peak Hours.

- Provide one left-turn lane, two through lanes, and one right-turn lane on the southbound approach.

Table 6 shows the AM and PM peak hour operations with the recommended improvements.

TABLE 6: INTERSECTION LOS AND DELAY – NEAR-TERM PLUS PROJECT (IMPROVED) CONDITIONS

Intersection	Control	Near-Term (LOS/Delay)		Near-Term Plus Project (LOS/Delay)		Near-Term Plus Project (Improved) (LOS/Delay)	
		AM	PM	AM	PM	AM	PM
5. Silva Valley Pkwy / Appian Wy	AWSC / Signal	**F / 85**	D / 35	**F / 89**	E / 37	C / 24	B / 17
13. El Dorado Hills Blvd / Saratoga Wy / Park Dr	Signal	**F / 108**	D / 47	**F / 175**	D / 51	E / 72	D / 51

Notes: AWSC = all-way stop control

The average delay is measured in seconds per vehicle. For signalized and AWSC intersections, the delay shown is the average control delay for the overall intersection. For TWSC intersections, the LOS and control delay for the worst movement is shown. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010). Intersections 1-12, and 25-26 were analyzed in Synchro 9. Intersections 13-18 were analyzed in SimTraffic.

Bold text indicates an unacceptable LOS. Underlined indicates a significant impact.

Source: Fehr & Peers, 2017

APPENDIX:

TECHNICAL CALCULATIONS – NEAR TERM CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	230	210	40	650	80	250	190	10	110	290	350
Future Volume (veh/h)	150	230	210	40	650	80	250	190	10	110	290	350
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		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	156	240	55	44	722	16	298	226	8	129	341	258
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.90	0.90	0.90	0.84	0.84	0.84	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	972	433	56	864	386	356	1604	57	156	820	696
Arrive On Green	0.06	0.27	0.27	0.03	0.24	0.24	0.10	0.46	0.44	0.09	0.44	0.44
Sat Flow, veh/h	3442	3539	1578	1774	3539	1579	3442	3487	123	1774	1863	1581
Grp Volume(v), veh/h	156	240	55	44	722	16	298	114	120	129	341	258
Grp Sat Flow(s),veh/h/ln	1721	1770	1578	1774	1770	1579	1721	1770	1841	1774	1863	1581
Q Serve(g_s), s	4.9	5.8	2.9	2.7	21.3	0.9	9.3	4.1	4.1	7.9	13.8	12.0
Cycle Q Clear(g_c), s	4.9	5.8	2.9	2.7	21.3	0.9	9.3	4.1	4.1	7.9	13.8	12.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	214	972	433	56	864	386	356	814	847	156	820	696
V/C Ratio(X)	0.73	0.25	0.13	0.78	0.84	0.04	0.84	0.14	0.14	0.83	0.42	0.37
Avail Cap(c_a), veh/h	375	1062	473	145	965	431	563	814	847	306	820	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	31.0	30.0	52.9	39.5	31.7	48.4	17.1	17.2	49.3	21.1	20.6
Incr Delay (d2), s/veh	1.8	0.0	0.0	8.5	5.3	0.0	3.3	0.4	0.3	4.1	1.6	1.5
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(50%),veh/ln	2.4	2.8	1.3	1.5	11.1	0.4	4.6	2.1	2.2	4.0	7.5	5.5
LnGrp Delay(d),s/veh	52.4	31.1	30.0	61.4	44.8	31.8	51.7	17.5	17.5	53.5	22.7	22.1
LnGrp LOS	D	C	C	E	D	C	D	B	B	D	C	C
Approach Vol, veh/h		451			782			532			728	
Approach Delay, s/veh		38.3			45.4			36.7			27.9	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	34.2	15.4	52.9	10.8	30.9	13.7	54.6
Change Period (Y+Rc), s	4.0	5.7	4.0	* 5.9	4.0	5.7	4.0	* 5.9
Max Green Setting (Gmax), s	9.0	31.3	18.0	* 33	12.0	28.3	19.0	* 31
Max Q Clear Time (g_c+I1), s	4.7	7.8	11.3	15.8	6.9	23.3	9.9	6.1
Green Ext Time (p_c), s	0.0	3.7	0.0	2.8	0.0	1.8	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.2
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	300	20	80	730	50	40	60	50	120	270	110
Future Volume (veh/h)	10	300	20	80	730	50	40	60	50	120	270	110
Number	1	6	16	5	2	12	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		1.00	1.00		1.00	1.00		0.99	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	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	12	357	22	90	820	54	61	91	41	150	338	7
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.66	0.66	0.66	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	475	29	362	821	54	201	137	62	140	315	391
Arrive On Green	0.00	0.27	0.25	0.20	0.48	0.45	0.11	0.11	0.10	0.25	0.25	0.25
Sat Flow, veh/h	1774	1737	107	1774	1729	114	1774	1213	547	564	1271	1577
Grp Volume(v), veh/h	12	0	379	90	0	874	61	0	132	488	0	7
Grp Sat Flow(s),veh/h/ln	1774	0	1844	1774	0	1842	1774	0	1760	1835	0	1577
Q Serve(g_s), s	0.2	0.0	18.6	4.2	0.0	46.9	3.1	0.0	7.1	24.5	0.0	0.3
Cycle Q Clear(g_c), s	0.2	0.0	18.6	4.2	0.0	46.9	3.1	0.0	7.1	24.5	0.0	0.3
Prop In Lane	1.00		0.06	1.00		0.06	1.00		0.31	0.31		1.00
Lane Grp Cap(c), veh/h	4	0	504	362	0	875	201	0	199	454	0	391
V/C Ratio(X)	2.80	0.00	0.75	0.25	0.00	1.00	0.30	0.00	0.66	1.07	0.00	0.02
Avail Cap(c_a), veh/h	260	0	1062	362	0	875	439	0	436	454	0	391
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	32.9	33.0	0.0	26.0	40.3	0.0	42.3	37.2	0.0	28.1
Incr Delay (d2), s/veh	905.2	0.0	4.8	0.3	0.0	30.0	0.3	0.0	1.4	63.5	0.0	0.0
Initial Q Delay(d3),s/veh	45.1	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	1.2	0.0	10.1	2.1	0.0	31.1	1.5	0.0	3.5	20.4	0.0	0.1
LnGrp Delay(d),s/veh	999.7	0.0	37.7	33.3	0.0	56.0	40.6	0.0	43.7	100.7	0.0	28.1
LnGrp LOS	F		D	C		E	D		D	F		C
Approach Vol, veh/h		391			964			193			495	
Approach Delay, s/veh		67.2			53.9			42.7			99.7	
Approach LOS		E			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.2	51.0		28.5	24.2	31.1		15.2
Change Period (Y+Rc), s	3.5	6.0		5.5	3.5	6.0		5.5
Max Green Setting (Gmax), s	15.6	45.0		23.0	15.0	55.0		23.0
Max Q Clear Time (g_c+I1), s	2.2	48.9		26.5	6.2	20.6		9.1
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	4.5		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	66.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	260	200	80	560	20	290	60	60	10	40	10
Future Volume (veh/h)	10	260	200	80	560	20	290	60	60	10	40	10
Number	1	6	16	5	2	12	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		1.00	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	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	280	59	88	615	21	408	85	48	13	52	5
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.91	0.91	0.91	0.71	0.71	0.71	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	708	600	114	775	26	481	303	171	18	73	7
Arrive On Green	0.01	0.38	0.38	0.06	0.43	0.41	0.27	0.27	0.26	0.05	0.05	0.05
Sat Flow, veh/h	1774	1863	1579	1774	1791	61	1774	1117	631	338	1352	130
Grp Volume(v), veh/h	11	280	59	88	0	636	408	0	133	70	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1579	1774	0	1852	1774	0	1749	1820	0	0
Q Serve(g_s), s	0.4	7.6	1.7	3.4	0.0	20.6	15.1	0.0	4.2	2.6	0.0	0.0
Cycle Q Clear(g_c), s	0.4	7.6	1.7	3.4	0.0	20.6	15.1	0.0	4.2	2.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.36	0.19		0.07
Lane Grp Cap(c), veh/h	20	708	600	114	0	802	481	0	474	98	0	0
V/C Ratio(X)	0.56	0.40	0.10	0.77	0.00	0.79	0.85	0.00	0.28	0.71	0.00	0.00
Avail Cap(c_a), veh/h	307	1390	1178	307	0	1382	655	0	646	394	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.1	15.7	13.8	31.9	0.0	17.0	23.9	0.0	20.0	32.2	0.0	0.0
Incr Delay (d2), s/veh	17.5	0.4	0.1	8.0	0.0	1.8	7.0	0.0	0.2	6.9	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	0.3	4.0	0.7	1.9	0.0	10.8	8.3	0.0	2.0	1.5	0.0	0.0
LnGrp Delay(d),s/veh	51.6	16.0	13.9	40.0	0.0	18.8	30.9	0.0	20.3	39.1	0.0	0.0
LnGrp LOS	D	B	B	D		B	C		C	D		
Approach Vol, veh/h		350			724			541			70	
Approach Delay, s/veh		16.8			21.4			28.3			39.1	
Approach LOS		B			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	4.8	34.0		7.7	8.4	30.3		22.8
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.6
Max Green Setting (Gmax), s	12.0	50.0		15.0	12.0	50.0		25.0
Max Q Clear Time (g_c+I1), s	2.4	22.6		4.6	5.4	9.6		17.1
Green Ext Time (p_c), s	0.0	5.7		0.1	0.1	6.1		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection 4 **El Dorado Hills Blvd/Francisco Way-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	360	358	99.3%	31.1	11.2	C
	Through	140	150	107.3%	13.4	1.0	B
	Right Turn	40	42	105.0%	7.6	1.6	A
	Subtotal	540	550	101.8%	24.7	8.0	C
SB	Left Turn	130	144	110.4%	39.7	16.1	D
	Through	330	360	109.0%	61.3	17.0	E
	Right Turn	10	11	105.0%	61.0	37.6	E
	Subtotal	470	514	109.3%	55.5	16.8	E
EB	Left Turn	10	11	113.0%	10.5	3.2	B
	Through	60	61	102.2%	13.3	1.2	B
	Right Turn	450	473	105.0%	3.7	0.6	A
	Subtotal	520	545	104.9%	4.8	0.5	A
WB	Left Turn	50	60	120.4%	21.3	6.1	C
	Through	70	88	125.3%	22.1	5.2	C
	Right Turn	50	66	131.4%	18.4	5.0	B
	Subtotal	170	214	125.6%	20.7	5.2	C
Total		1,700	1,822	107.2%	26.8	4.9	C

Intersection	
Intersection Delay, s/veh	85.4
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations			↕				↕				↕				↕	
Traffic Vol, veh/h	0	40	10	90	0	230	10	80	0	30	200	70	0	40	250	20
Future Vol, veh/h	0	40	10	90	0	230	10	80	0	30	200	70	0	40	250	20
Peak Hour Factor	0.92	0.68	0.68	0.68	0.92	0.70	0.70	0.70	0.92	0.63	0.63	0.63	0.92	0.69	0.69	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	59	15	132	0	329	14	114	0	48	317	111	0	58	362	29
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	23.7	93.5	101.7	88.2
HCM LOS	C	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	29%	72%	13%
Vol Thru, %	67%	7%	3%	81%
Vol Right, %	23%	64%	25%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	300	140	320	310
LT Vol	30	40	230	40
Through Vol	200	10	10	250
RT Vol	70	90	80	20
Lane Flow Rate	476	206	457	449
Geometry Grp	1	1	1	1
Degree of Util (X)	1.094	0.527	1.066	1.047
Departure Headway (Hd)	8.707	10.047	8.843	8.916
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	419	362	416	409
Service Time	6.707	8.047	6.843	6.916
HCM Lane V/C Ratio	1.136	0.569	1.099	1.098
HCM Control Delay	101.7	23.7	93.5	88.2
HCM Lane LOS	F	C	F	F
HCM 95th-tile Q	15.7	2.9	14.5	13.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	510	180	340	370	320	890
Future Volume (veh/h)	510	180	340	370	320	890
Number	7	14	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	708	135	410	265	356	989
Adj No. of Lanes	1	1	2	0	2	2
Peak Hour Factor	0.72	0.72	0.83	0.83	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	746	666	535	342	568	1738
Arrive On Green	0.42	0.42	0.26	0.24	0.17	0.49
Sat Flow, veh/h	1774	1583	2151	1315	3442	3632
Grp Volume(v), veh/h	708	135	352	323	356	989
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1604	1721	1770
Q Serve(g_s), s	34.9	4.9	16.6	17.0	8.7	17.9
Cycle Q Clear(g_c), s	34.9	4.9	16.6	17.0	8.7	17.9
Prop In Lane	1.00	1.00		0.82	1.00	
Lane Grp Cap(c), veh/h	746	666	460	417	568	1738
V/C Ratio(X)	0.95	0.20	0.77	0.78	0.63	0.57
Avail Cap(c_a), veh/h	795	709	918	832	949	1836
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	25.3	16.6	31.0	31.9	35.2	16.3
Incr Delay (d2), s/veh	19.4	0.1	1.0	1.2	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.9	2.1	8.2	7.6	4.2	8.7
LnGrp Delay(d),s/veh	44.7	16.7	32.0	33.1	35.7	16.5
LnGrp LOS	D	B	C	C	D	B
Approach Vol, veh/h	843		675			1345
Approach Delay, s/veh	40.2		32.5			21.6
Approach LOS	D		C			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	21.0	27.5		42.1		48.5		
Change Period (Y+Rc), s	6.0	* 6		4.6		6.0		
Max Green Setting (Gmax), s	25.0	* 45		40.0		45.0		
Max Q Clear Time (g_c+I1), s	10.7	19.0		36.9		19.9		
Green Ext Time (p_c), s	4.2	2.3		0.6		4.9		

Intersection Summary	
HCM 2010 Ctrl Delay	29.6
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	0	260	0	0	0	490	240	0	0	170	400
Future Volume (veh/h)	90	0	260	0	0	0	490	240	0	0	170	400
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)	0.97		1.00	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	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	158	0	0	0	0	0	544	267	0	0	189	40
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.57	0.57	0.57	0.78	0.78	0.78	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	263	284	241	4	4	0	636	1248	0	4	415	347
Arrive On Green	0.15	0.00	0.00	0.00	0.00	0.00	0.36	0.67	0.00	0.00	0.22	0.22
Sat Flow, veh/h	1728	1863	1583	1774	1863	0	1774	1863	0	1774	1863	1555
Grp Volume(v), veh/h	158	0	0	0	0	0	544	267	0	0	189	40
Grp Sat Flow(s),veh/h/ln	1728	1863	1583	1774	1863	0	1774	1863	0	1774	1863	1555
Q Serve(g_s), s	3.8	0.0	0.0	0.0	0.0	0.0	12.8	2.5	0.0	0.0	4.0	0.9
Cycle Q Clear(g_c), s	3.8	0.0	0.0	0.0	0.0	0.0	12.8	2.5	0.0	0.0	4.0	0.9
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	263	284	241	4	4	0	636	1248	0	4	415	347
V/C Ratio(X)	0.60	0.00	0.00	0.00	0.00	0.00	0.86	0.21	0.00	0.00	0.45	0.12
Avail Cap(c_a), veh/h	1556	1678	1426	1574	1653	0	2165	1707	0	787	1707	1425
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	0.0	0.0	0.0	0.0	13.4	2.9	0.0	0.0	15.1	14.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.0	0.0	0.0	2.6	0.1	0.0	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	0.0	0.0	0.0	6.7	1.3	0.0	0.0	2.1	0.4
LnGrp Delay(d),s/veh	18.6	0.0	0.0	0.0	0.0	0.0	16.0	2.9	0.0	0.0	15.7	14.1
LnGrp LOS	B						B	A			B	B
Approach Vol, veh/h		158			0			811			229	
Approach Delay, s/veh		18.6			0.0			11.7			15.4	
Approach LOS		B						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	10.0	34.2		10.9	20.1	14.1		0.0
Change Period (Y+Rc), s	4.0	5.3		4.6	4.0	5.3		4.0
Max Green Setting (Gmax), s	20.0	40.0		40.0	55.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	10.8	4.5		5.8	14.8	6.0		0.0
Green Ext Time (p_c), s	0.0	2.6		0.2	1.4	2.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	170	50	630	1360	40
Future Volume (veh/h)	60	170	50	630	1360	40
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			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	1900
Adj Flow Rate, veh/h	80	0	53	663	1545	44
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.75	0.75	0.95	0.95	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	106	94	58	2831	2449	70
Arrive On Green	0.06	0.00	0.03	0.80	0.70	0.67
Sat Flow, veh/h	1774	1583	1774	3632	3608	100
Grp Volume(v), veh/h	80	0	53	663	776	813
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1845
Q Serve(g_s), s	2.5	0.0	1.7	2.6	13.5	13.6
Cycle Q Clear(g_c), s	2.5	0.0	1.7	2.6	13.5	13.6
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	106	94	58	2831	1233	1285
V/C Ratio(X)	0.76	0.00	0.91	0.23	0.63	0.63
Avail Cap(c_a), veh/h	773	690	892	3340	1670	1741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	27.4	1.4	4.7	4.7
Incr Delay (d2), s/veh	10.9	0.0	23.0	0.0	0.6	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	1.5	0.0	1.2	1.2	6.7	7.0
LnGrp Delay(d),s/veh	37.3	0.0	50.4	1.4	5.2	5.3
LnGrp LOS	D		D	A	A	A
Approach Vol, veh/h	80			716	1589	
Approach Delay, s/veh	37.3			5.1	5.3	
Approach LOS	D			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		49.5		7.4	5.9	43.6		
Change Period (Y+Rc), s		5.7		3.8	3.6	5.7		
Max Green Setting (Gmax), s		52.0		25.0	29.0	52.0		
Max Q Clear Time (g_c+I1), s		4.6		4.5	3.7	15.6		
Green Ext Time (p_c), s		25.9		0.2	0.1	22.3		

Intersection Summary	
HCM 2010 Ctrl Delay	6.3
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	20	200	0	20	10	60	510	10	10	1130	500
Future Volume (veh/h)	180	20	200	0	20	10	60	510	10	10	1130	500
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		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	191	21	25	0	48	0	68	580	10	11	1202	503
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	26	235	0	73	0	83	2347	40	14	1529	615
Arrive On Green	0.15	0.15	0.15	0.00	0.04	0.00	0.05	0.66	0.64	0.01	0.62	0.61
Sat Flow, veh/h	1606	177	1577	0	1863	0	1774	3560	61	1774	2464	991
Grp Volume(v), veh/h	212	0	25	0	48	0	68	288	302	11	850	855
Grp Sat Flow(s),veh/h/ln	1782	0	1577	0	1863	0	1774	1770	1852	1774	1770	1686
Q Serve(g_s), s	13.3	0.0	1.6	0.0	2.9	0.0	4.4	7.6	7.7	0.7	40.4	45.5
Cycle Q Clear(g_c), s	13.3	0.0	1.6	0.0	2.9	0.0	4.4	7.6	7.7	0.7	40.4	45.5
Prop In Lane	0.90		1.00	0.00		0.00	1.00		0.03	1.00		0.59
Lane Grp Cap(c), veh/h	266	0	235	0	73	0	83	1167	1221	14	1098	1046
V/C Ratio(X)	0.80	0.00	0.11	0.00	0.66	0.00	0.82	0.25	0.25	0.81	0.77	0.82
Avail Cap(c_a), veh/h	355	0	314	0	134	0	141	1308	1369	92	1259	1200
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	0.0	42.4	0.0	54.7	0.0	54.5	8.0	8.0	57.2	16.0	17.3
Incr Delay (d2), s/veh	9.4	0.0	0.2	0.0	11.0	0.0	7.4	0.1	0.1	32.0	2.8	4.2
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	7.2	0.0	0.7	0.0	1.7	0.0	2.3	3.7	3.9	0.5	20.4	22.2
LnGrp Delay(d),s/veh	56.8	0.0	42.7	0.0	65.7	0.0	62.0	8.1	8.1	89.2	18.8	21.5
LnGrp LOS	E		D		E		E	A	A	F	B	C
Approach Vol, veh/h		237			48			658			1716	
Approach Delay, s/veh		55.3			65.7			13.7			20.6	
Approach LOS		E			E			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	4.9	80.1		9.2	9.4	75.6		21.2
Change Period (Y+Rc), s	3.7	5.7		5.3	3.7	5.7		5.3
Max Green Setting (Gmax), s	6.3	83.6		7.7	9.5	80.4		21.7
Max Q Clear Time (g_c+I1), s	2.7	9.7		4.9	6.4	47.5		15.3
Green Ext Time (p_c), s	0.0	35.1		0.0	0.0	22.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	22.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	30	310	590	30	100	170	450	220	90	1220	30
Future Volume (veh/h)	40	30	310	590	30	100	170	450	220	90	1220	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		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	33	69	757	0	0	185	489	0	98	1326	32
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	44	92	833	437	0	218	1620	725	124	1431	35
Arrive On Green	0.08	0.08	0.08	0.23	0.00	0.00	0.12	0.46	0.00	0.07	0.41	0.39
Sat Flow, veh/h	1774	538	1126	3548	1863	0	1774	3539	1583	1774	3532	85
Grp Volume(v), veh/h	43	0	102	757	0	0	185	489	0	98	664	694
Grp Sat Flow(s),veh/h/ln	1774	0	1664	1774	1863	0	1774	1770	1583	1774	1770	1847
Q Serve(g_s), s	2.3	0.0	6.2	21.3	0.0	0.0	10.5	8.9	0.0	5.6	36.7	36.7
Cycle Q Clear(g_c), s	2.3	0.0	6.2	21.3	0.0	0.0	10.5	8.9	0.0	5.6	36.7	36.7
Prop In Lane	1.00		0.68	1.00		0.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	144	0	135	833	437	0	218	1620	725	124	717	749
V/C Ratio(X)	0.30	0.00	0.75	0.91	0.00	0.00	0.85	0.30	0.00	0.79	0.93	0.93
Avail Cap(c_a), veh/h	432	0	405	864	454	0	432	1782	797	432	719	750
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	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	0.0	46.1	38.2	0.0	0.0	44.1	17.5	0.0	47.0	29.1	29.1
Incr Delay (d2), s/veh	0.4	0.0	3.2	13.4	0.0	0.0	3.6	0.2	0.0	4.1	18.2	17.8
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	1.2	0.0	3.0	12.0	0.0	0.0	5.4	4.4	0.0	2.9	21.5	22.4
LnGrp Delay(d),s/veh	44.8	0.0	49.3	51.7	0.0	0.0	47.7	17.7	0.0	51.1	47.3	46.9
LnGrp LOS	D		D	D			D	B		D	D	D
Approach Vol, veh/h		145			757			674			1456	
Approach Delay, s/veh		48.0			51.7			25.9			47.4	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.2	51.0		12.4	16.6	45.6		28.1
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	25.0	50.0		25.0	25.0	40.0		25.0
Max Q Clear Time (g_c+I1), s	7.6	10.9		8.2	12.5	38.7		23.3
Green Ext Time (p_c), s	0.1	24.6		0.3	0.2	1.2		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	43.7
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	50	10	640	70	10
Future Vol, veh/h	270	50	10	640	70	10
Conflicting Peds, #/hr	0	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	76	76	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	329	61	13	842	89	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	390	0	1228	362
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	868	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1169	-	197	683
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	411	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1167	-	195	682
Mov Cap-2 Maneuver	-	-	-	-	195	-
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	406	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	36.1
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	214	-	-	1167	-
HCM Lane V/C Ratio	0.473	-	-	0.011	-
HCM Control Delay (s)	36.1	-	-	8.1	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	2.3	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	160	90	140	480	440	160	270	120	250	310	120
Future Volume (veh/h)	110	160	90	140	480	440	160	270	120	250	310	120
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	141	205	43	163	558	375	258	435	0	301	373	105
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.62	0.62	0.62	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	967	199	198	697	468	293	717	321	334	617	172
Arrive On Green	0.10	0.33	0.32	0.11	0.34	0.33	0.17	0.20	0.00	0.19	0.23	0.21
Sat Flow, veh/h	1774	2924	601	1774	2027	1362	1774	3539	1583	1774	2735	760
Grp Volume(v), veh/h	141	122	126	163	487	446	258	435	0	301	240	238
Grp Sat Flow(s),veh/h/ln	1774	1770	1755	1774	1770	1619	1774	1770	1583	1774	1770	1726
Q Serve(g_s), s	7.5	4.8	5.0	8.6	23.9	24.0	13.6	10.7	0.0	15.9	11.6	11.9
Cycle Q Clear(g_c), s	7.5	4.8	5.0	8.6	23.9	24.0	13.6	10.7	0.0	15.9	11.6	11.9
Prop In Lane	1.00		0.34	1.00		0.84	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	174	585	580	198	608	557	293	717	321	334	399	389
V/C Ratio(X)	0.81	0.21	0.22	0.82	0.80	0.80	0.88	0.61	0.00	0.90	0.60	0.61
Avail Cap(c_a), veh/h	371	763	757	371	763	699	371	1342	600	371	671	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	23.0	23.3	41.6	28.4	29.0	39.0	34.7	0.0	38.0	33.2	33.6
Incr Delay (d2), s/veh	6.5	0.1	0.1	6.3	4.4	4.8	16.8	0.6	0.0	22.3	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.3	2.4	4.6	12.4	11.4	8.0	5.3	0.0	9.8	5.8	5.8
LnGrp Delay(d),s/veh	48.8	23.2	23.4	48.0	32.9	33.8	55.9	35.3	0.0	60.3	34.3	34.7
LnGrp LOS	D	C	C	D	C	C	E	D		E	C	C
Approach Vol, veh/h		389			1096			693			779	
Approach Delay, s/veh		32.5			35.5			43.0			44.5	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	23.4	14.7	35.7	19.8	25.6	13.4	36.9
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	20.0	35.0	20.0	40.0	20.0	35.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	17.9	12.7	10.6	7.0	15.6	13.9	9.5	26.0
Green Ext Time (p_c), s	0.2	5.1	0.2	7.7	0.2	5.0	0.2	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	39.2
HCM 2010 LOS	D

Intersection 13 **El Dorado Hills Blvd/Saratoga Wy-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	350	329	94.1%	194.3	52.1	F
	Through	700	698	99.7%	14.5	3.3	B
	Right Turn	30	28	94.0%	12.4	6.7	B
	Subtotal	1,080	1,056	97.7%	68.3	16.1	E
SB	Left Turn	110	107	97.6%	149.0	33.8	F
	Through	1,345	1,322	98.3%	136.7	36.2	F
	Right Turn	300	286	95.2%	152.0	37.2	F
	Subtotal	1,755	1,715	97.7%	140.2	35.7	F
EB	Left Turn	70	72	102.9%	80.6	18.9	F
	Through	70	72	102.6%	110.4	19.2	F
	Right Turn	20	22	112.0%	16.2	6.7	B
	Subtotal	160	166	103.9%	85.7	15.2	F
WB	Left Turn	20	21	102.5%	47.5	19.9	D
	Through	50	49	97.2%	55.4	7.3	E
	Right Turn	50	53	105.0%	26.3	9.6	C
	Subtotal	120	122	101.3%	42.1	7.2	D
Total		3,115	3,059	98.2%	107.9	17.8	F

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	774	802	103.6%	64.3	11.0	E
	Through	764	758	99.2%	35.8	28.9	D
	Right Turn	60	64	107.2%	13.3	5.8	B
	Subtotal	1,598	1,624	101.6%	48.6	15.0	D
SB	Left Turn	54	50	93.0%	64.8	14.7	E
	Through	941	935	99.4%	41.8	6.4	D
	Right Turn	390	382	97.8%	23.0	3.1	C
	Subtotal	1,385	1,367	98.7%	37.5	4.9	D
EB	Left Turn	272	268	98.4%	75.7	38.1	E
	Through	50	55	110.8%	67.7	32.3	E
	Right Turn	301	303	100.8%	11.8	20.8	B
	Subtotal	623	627	100.6%	44.0	29.9	D
WB	Left Turn	91	89	97.6%	63.4	8.4	E
	Through	40	40	99.0%	60.0	12.2	E
	Right Turn	40	43	107.3%	6.9	3.6	A
	Subtotal	171	171	100.2%	48.1	7.7	D
Total		3,777	3,789	100.3%	43.9	10.6	D

Intersection 16 **Latrobe Rd/US 50 EB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	1,478	1,500	101.5%	13.1	3.1	B
	Right Turn	91	91	100.0%	8.0	2.2	A
	Subtotal	1,569	1,591	101.4%	12.8	3.0	B
SB	Left Turn	260	249	95.7%	37.3	12.7	D
	Through	1,075	1,085	100.9%	21.4	3.2	C
	Right Turn						
	Subtotal	1,335	1,334	99.9%	24.4	2.3	C
EB	Left Turn						
	Through						
	Right Turn	1,064	1,077	101.2%	24.7	1.7	C
	Subtotal	1,064	1,077	101.2%	24.7	1.7	C
WB	Left Turn						
	Through						
	Right Turn	120	115	95.7%	7.4	1.0	A
	Subtotal	120	115	95.7%	7.4	1.0	A
Total		4,088	4,116	100.7%	19.5	1.4	B

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	62	63	101.8%	44.4	8.6	D
	Through	1,290	1,303	101.0%	23.7	3.3	C
	Right Turn	120	122	101.3%	6.4	1.4	A
	Subtotal	1,472	1,488	101.1%	23.2	3.0	C
SB	Left Turn	409	408	99.7%	38.0	3.8	D
	Through	1,530	1,538	100.5%	14.5	1.6	B
	Right Turn	200	212	106.2%	4.6	1.0	A
	Subtotal	2,139	2,158	100.9%	17.8	1.7	B
EB	Left Turn	20	21	103.5%	40.6	16.1	D
	Through	10	11	107.0%	47.6	15.7	D
	Right Turn	10	9	92.0%	16.5	10.7	B
	Subtotal	40	41	101.5%	34.1	9.5	C
WB	Left Turn	91	88	96.8%	35.3	4.9	D
	Through	30	32	107.0%	33.7	13.2	C
	Right Turn	250	254	101.8%	15.3	1.7	B
	Subtotal	371	375	101.0%	21.3	2.6	C
Total		4,022	4,061	101.0%	20.3	1.8	C

Intersection 18 **Latrobe Rd/White Rock Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	80	80	99.6%	72.6	10.0	E
	Through	870	884	101.6%	26.9	2.6	C
	Right Turn	220	232	105.3%	12.3	4.0	B
	Subtotal	1,170	1,196	102.2%	27.0	3.1	C
SB	Left Turn	102	104	101.7%	62.4	10.6	E
	Through	1,070	1,069	99.9%	31.8	4.5	C
	Right Turn	460	463	100.7%	16.1	2.8	B
	Subtotal	1,632	1,636	100.2%	29.2	3.6	C
EB	Left Turn	422	427	101.2%	54.1	5.6	D
	Through	230	230	100.0%	53.5	3.9	D
	Right Turn	40	43	107.3%	36.7	8.1	D
	Subtotal	692	700	101.2%	52.9	4.0	D
WB	Left Turn	350	353	100.9%	54.5	4.4	D
	Through	160	158	98.8%	56.2	5.5	E
	Right Turn	180	184	101.9%	9.1	4.2	A
	Subtotal	690	695	100.7%	43.0	3.3	D
Total		4,184	4,226	101.0%	34.8	2.4	C

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	1	97	441	11	20	472	200	64	10	10	50	10	153
Future Volume (veh/h)	1	97	441	11	20	472	200	64	10	10	50	10	153
Number		5	2	12	1	6	16	7	4	14	3	8	18
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		0.97
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h		117	531	8	25	590	220	74	12	0	54	11	2
Adj No. of Lanes		1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor		0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		155	2757	1232	38	1800	670	109	92	0	77	31	6
Arrive On Green		0.09	0.78	0.78	0.02	0.71	0.70	0.06	0.05	0.00	0.04	0.02	0.02
Sat Flow, veh/h		1774	3539	1581	1774	2525	940	1774	1863	0	1774	1527	278
Grp Volume(v), veh/h		117	531	8	25	413	397	74	12	0	54	0	13
Grp Sat Flow(s),veh/h/ln		1774	1770	1581	1774	1770	1695	1774	1863	0	1774	0	1805
Q Serve(g_s), s		8.7	5.3	0.2	1.9	11.8	12.1	5.5	0.8	0.0	4.1	0.0	1.0
Cycle Q Clear(g_c), s		8.7	5.3	0.2	1.9	11.8	12.1	5.5	0.8	0.0	4.1	0.0	1.0
Prop In Lane		1.00		1.00	1.00		0.55	1.00		0.00	1.00		0.15
Lane Grp Cap(c), veh/h		155	2757	1232	38	1261	1209	109	92	0	77	0	36
V/C Ratio(X)		0.76	0.19	0.01	0.66	0.33	0.33	0.68	0.13	0.00	0.70	0.00	0.36
Avail Cap(c_a), veh/h		263	2757	1232	79	1261	1209	197	338	0	302	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)		0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh		60.2	3.9	3.3	65.6	7.3	7.5	62.1	61.4	0.0	63.7	0.0	65.3
Incr Delay (d2), s/veh		2.5	0.1	0.0	7.2	0.7	0.7	2.8	0.6	0.0	11.2	0.0	5.9
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		4.4	2.6	0.1	1.0	6.0	5.9	2.8	0.4	0.0	2.2	0.0	0.5
LnGrp Delay(d),s/veh		62.7	4.0	3.3	72.8	8.0	8.2	64.9	62.1	0.0	74.9	0.0	71.2
LnGrp LOS		E	A	A	E	A	A	E	E		E		E
Approach Vol, veh/h			656			835			86			67	
Approach Delay, s/veh			14.5			10.0			64.5			74.2	
Approach LOS			B			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	109.2	9.8	9.1	15.8	100.2	12.3	6.7
Change Period (Y+Rc), s	4.5	6.0	4.5	4.5	* 5.2	6.0	* 5.2	4.5
Max Green Setting (Gmax), s	5.5	65.0	22.5	22.5	* 19	51.0	* 14	30.5
Max Q Clear Time (g_c+I1), s	3.9	7.3	6.1	2.8	10.7	14.1	7.5	3.0
Green Ext Time (p_c), s	0.0	14.4	0.1	0.1	0.0	13.0	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Notes

User approved ignoring U-Turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

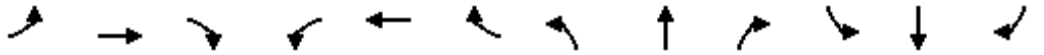
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	360	50	100	420	60	130	10	190	30	10	10
Future Volume (veh/h)	10	360	50	100	420	60	130	10	190	30	10	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	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	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	404	54	145	609	84	151	12	6	37	12	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.69	0.69	0.69	0.86	0.86	0.86	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	7	691	92	173	818	113	228	150	75	107	113	0
Arrive On Green	0.00	0.43	0.39	0.10	0.51	0.49	0.13	0.13	0.12	0.06	0.06	0.00
Sat Flow, veh/h	1774	1609	215	1774	1602	221	1774	1169	585	1774	1863	0
Grp Volume(v), veh/h	11	0	458	145	0	693	151	0	18	37	12	0
Grp Sat Flow(s),veh/h/ln	1774	0	1824	1774	0	1823	1774	0	1754	1774	1863	0
Q Serve(g_s), s	0.2	0.0	10.8	4.5	0.0	16.9	4.6	0.0	0.5	1.1	0.3	0.0
Cycle Q Clear(g_c), s	0.2	0.0	10.8	4.5	0.0	16.9	4.6	0.0	0.5	1.1	0.3	0.0
Prop In Lane	1.00		0.12	1.00		0.12	1.00		0.33	1.00		0.00
Lane Grp Cap(c), veh/h	7	0	783	173	0	931	228	0	225	107	113	0
V/C Ratio(X)	1.66	0.00	0.58	0.84	0.00	0.74	0.66	0.00	0.08	0.34	0.11	0.00
Avail Cap(c_a), veh/h	773	0	1525	773	0	1501	1111	0	1098	1111	1166	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.0	0.0	12.3	24.9	0.0	10.9	23.3	0.0	21.6	25.3	25.0	0.0
Incr Delay (d2), s/veh	343.2	0.0	0.9	4.1	0.0	1.2	4.1	0.0	0.2	2.4	0.5	0.0
Initial Q Delay(d3),s/veh	105.8	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	0.7	0.0	5.6	2.4	0.0	8.6	2.5	0.0	0.3	0.6	0.2	0.0
LnGrp Delay(d),s/veh	477.0	0.0	13.2	29.1	0.0	12.1	27.4	0.0	21.8	27.7	25.5	0.0
LnGrp LOS	F		B	C		B	C		C	C	C	
Approach Vol, veh/h		469			838			169			49	
Approach Delay, s/veh		24.1			15.1			26.8			27.2	
Approach LOS		C			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	4.2	33.4		11.2	9.5	28.1		7.4
Change Period (Y+Rc), s	3.5	* 6		* 4.2	3.5	6.0		4.2
Max Green Setting (Gmax), s	25.6	* 45		* 35	25.0	45.0		35.0
Max Q Clear Time (g_c+I1), s	2.2	18.9		6.6	6.5	12.8		3.1
Green Ext Time (p_c), s	0.0	8.5		0.7	0.1	9.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	480	10	130	70	400	0	0	240	520
Future Volume (veh/h)	0	0	0	480	10	130	70	400	0	0	240	520
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	0	0	1881	1881
Adj Flow Rate, veh/h				560	0	31	91	519	0	0	258	126
Adj No. of Lanes				2	0	1	1	2	0	0	2	1
Peak Hour Factor				0.87	0.87	0.87	0.77	0.77	0.77	0.93	0.93	0.93
Percent Heavy Veh, %				2	2	2	2	2	0	0	1	1
Cap, veh/h				921	0	411	241	1870	0	0	1024	458
Arrive On Green				0.26	0.00	0.26	0.14	0.53	0.00	0.00	0.29	0.29
Sat Flow, veh/h				3548	0	1583	1774	3632	0	0	3668	1599
Grp Volume(v), veh/h				560	0	31	91	519	0	0	258	126
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1787	1599
Q Serve(g_s), s				5.2	0.0	0.6	1.8	3.1	0.0	0.0	2.1	2.3
Cycle Q Clear(g_c), s				5.2	0.0	0.6	1.8	3.1	0.0	0.0	2.1	2.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				921	0	411	241	1870	0	0	1024	458
V/C Ratio(X)				0.61	0.00	0.08	0.38	0.28	0.00	0.00	0.25	0.28
Avail Cap(c_a), veh/h				2993	0	1336	1186	4957	0	0	5006	2240
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				12.3	0.0	10.5	14.8	4.9	0.0	0.0	10.3	10.4
Incr Delay (d2), s/veh				0.2	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.6	0.0	0.2	0.9	1.4	0.0	0.0	1.0	1.0
LnGrp Delay(d),s/veh				12.5	0.0	10.6	15.2	4.9	0.0	0.0	10.4	10.5
LnGrp LOS				B		B	B	A			B	B
Approach Vol, veh/h					591			610			384	
Approach Delay, s/veh					12.4			6.5			10.4	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.9			9.1	14.8		13.8
Change Period (Y+Rc), s		6.8			* 4.2	6.8		5.8
Max Green Setting (Gmax), s		50.0			* 25	50.0		30.0
Max Q Clear Time (g_c+I1), s		5.1			3.8	4.3		7.2
Green Ext Time (p_c), s		1.7			0.1	1.7		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	30	370	390	550	170
Future Volume (veh/h)	80	30	370	390	550	170
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1881	1881	1863	1863
Adj Flow Rate, veh/h	85	5	493	520	632	49
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	0.94	0.94	0.75	0.75	0.87	0.87
Percent Heavy Veh, %	5	5	1	1	2	2
Cap, veh/h	586	261	716	2262	1162	520
Arrive On Green	0.17	0.17	0.21	0.63	0.33	0.33
Sat Flow, veh/h	3447	1538	3476	3668	3632	1583
Grp Volume(v), veh/h	85	5	493	520	632	49
Grp Sat Flow(s),veh/h/ln	1723	1538	1738	1787	1770	1583
Q Serve(g_s), s	0.9	0.1	5.3	2.5	5.9	0.9
Cycle Q Clear(g_c), s	0.9	0.1	5.3	2.5	5.9	0.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	586	261	716	2262	1162	520
V/C Ratio(X)	0.15	0.02	0.69	0.23	0.54	0.09
Avail Cap(c_a), veh/h	2276	1016	2586	4650	4604	2060
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	14.3	14.0	14.9	3.2	11.1	9.4
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.1	2.6	1.2	2.9	0.4
LnGrp Delay(d),s/veh	14.4	14.0	15.4	3.2	11.3	9.5
LnGrp LOS	B	B	B	A	B	A
Approach Vol, veh/h	90			1013	681	
Approach Delay, s/veh	14.4			9.1	11.2	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		29.7		10.9	12.4	17.3		
Change Period (Y+Rc), s		6.8		5.8	* 4.2	6.8		
Max Green Setting (Gmax), s		50.0		25.0	* 30	50.0		
Max Q Clear Time (g_c+I1), s		4.5		2.9	7.3	7.9		
Green Ext Time (p_c), s		2.6		0.1	0.9	2.6		

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	660	280	60	450	70	300	280	20	100	250	190
Future Volume (veh/h)	380	660	280	60	450	70	300	280	20	100	250	190
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		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	409	710	70	67	506	8	357	333	24	111	278	211
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.84	0.84	0.84	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	465	1026	458	86	720	321	414	1470	105	137	729	619
Arrive On Green	0.13	0.29	0.29	0.05	0.20	0.20	0.12	0.44	0.42	0.08	0.39	0.39
Sat Flow, veh/h	3442	3539	1578	1774	3539	1579	3442	3349	240	1774	1863	1581
Grp Volume(v), veh/h	409	710	70	67	506	8	357	175	182	111	278	211
Grp Sat Flow(s),veh/h/ln	1721	1770	1578	1774	1770	1579	1721	1770	1820	1774	1863	1581
Q Serve(g_s), s	12.8	19.6	3.6	4.1	14.6	0.4	11.2	6.8	6.9	6.8	11.7	10.3
Cycle Q Clear(g_c), s	12.8	19.6	3.6	4.1	14.6	0.4	11.2	6.8	6.9	6.8	11.7	10.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	465	1026	458	86	720	321	414	777	799	137	729	619
V/C Ratio(X)	0.88	0.69	0.15	0.78	0.70	0.02	0.86	0.23	0.23	0.81	0.38	0.34
Avail Cap(c_a), veh/h	501	1094	488	210	997	445	501	777	799	226	729	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	34.7	29.0	51.8	40.7	35.1	47.5	19.2	19.3	50.0	23.9	23.5
Incr Delay (d2), s/veh	14.8	1.4	0.1	5.6	0.6	0.0	11.0	0.7	0.7	4.3	1.5	1.5
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(50%),veh/ln	7.0	9.8	1.6	2.1	7.2	0.2	5.9	3.5	3.6	3.5	6.3	4.8
LnGrp Delay(d),s/veh	61.5	36.1	29.1	57.4	41.3	35.1	58.5	19.9	20.0	54.2	25.5	25.0
LnGrp LOS	E	D	C	E	D	D	E	B	B	D	C	C
Approach Vol, veh/h		1189			581			714			600	
Approach Delay, s/veh		44.4			43.0			39.2			30.6	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	35.9	17.2	47.6	18.8	26.4	12.5	52.3
Change Period (Y+Rc), s	4.0	5.7	4.0	* 5.9	4.0	5.7	4.0	* 5.9
Max Green Setting (Gmax), s	13.0	32.3	16.0	* 30	16.0	29.3	14.0	* 31
Max Q Clear Time (g_c+I1), s	6.1	21.6	13.2	13.7	14.8	16.6	8.8	8.9
Green Ext Time (p_c), s	0.0	3.7	0.0	2.8	0.0	4.0	0.0	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	760	60	30	460	110	60	210	70	50	90	110
Future Volume (veh/h)	40	760	60	30	460	110	60	210	70	50	90	110
Number	1	6	16	5	2	12	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		1.00	1.00		1.00	1.00		0.99	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	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	43	817	0	36	548	56	71	250	78	56	101	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.84	0.84	0.84	0.84	0.84	0.84	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	921	0	38	639	65	379	290	91	78	141	189
Arrive On Green	0.13	0.49	0.00	0.02	0.38	0.37	0.21	0.21	0.20	0.12	0.12	0.00
Sat Flow, veh/h	1774	1863	0	1774	1662	170	1774	1361	425	653	1177	1583
Grp Volume(v), veh/h	43	817	0	36	0	604	71	0	328	157	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1832	1774	0	1785	1830	0	1583
Q Serve(g_s), s	2.3	41.8	0.0	2.1	0.0	32.0	3.5	0.0	18.7	8.7	0.0	0.0
Cycle Q Clear(g_c), s	2.3	41.8	0.0	2.1	0.0	32.0	3.5	0.0	18.7	8.7	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.24	0.36		1.00
Lane Grp Cap(c), veh/h	233	921	0	38	0	704	379	0	381	219	0	189
V/C Ratio(X)	0.18	0.89	0.00	0.95	0.00	0.86	0.19	0.00	0.86	0.72	0.00	0.00
Avail Cap(c_a), veh/h	243	1005	0	243	0	815	411	0	414	424	0	367
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	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.9	24.1	0.0	51.6	0.0	30.0	34.0	0.0	40.2	44.8	0.0	0.0
Incr Delay (d2), s/veh	0.3	10.2	0.0	47.6	0.0	9.7	0.1	0.0	14.6	1.6	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	24.0	0.0	1.5	0.0	18.0	1.7	0.0	10.8	4.5	0.0	0.0
LnGrp Delay(d),s/veh	41.1	34.3	0.0	99.3	0.0	39.7	34.1	0.0	54.9	46.4	0.0	0.0
LnGrp LOS	D	C		F		D	C		D	D		
Approach Vol, veh/h		860			640			399			157	
Approach Delay, s/veh		34.7			43.0			51.2			46.4	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.9	44.6		16.6	6.2	56.2		26.5
Change Period (Y+Rc), s	3.5	6.0		5.5	3.5	6.0		5.5
Max Green Setting (Gmax), s	15.0	45.0		23.0	15.0	55.0		23.0
Max Q Clear Time (g_c+I1), s	4.3	34.0		10.7	4.1	43.8		20.7
Green Ext Time (p_c), s	0.1	4.6		0.3	0.1	6.5		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	640	240	60	380	10	240	30	60	10	20	10
Future Volume (veh/h)	10	640	240	60	380	10	240	30	60	10	20	10
Number	1	6	16	5	2	12	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		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	10	667	151	65	413	11	267	33	9	14	29	0
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.90	0.90	0.90	0.69	0.69	0.69
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	881	747	83	920	24	342	272	74	22	46	0
Arrive On Green	0.01	0.47	0.47	0.05	0.51	0.48	0.19	0.19	0.18	0.04	0.04	0.00
Sat Flow, veh/h	1774	1863	1580	1774	1806	48	1774	1408	384	597	1236	0
Grp Volume(v), veh/h	10	667	151	65	0	424	267	0	42	43	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1580	1774	0	1854	1774	0	1792	1833	0	0
Q Serve(g_s), s	0.4	18.8	3.6	2.3	0.0	9.3	9.1	0.0	1.2	1.5	0.0	0.0
Cycle Q Clear(g_c), s	0.4	18.8	3.6	2.3	0.0	9.3	9.1	0.0	1.2	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.21	0.33		0.00
Lane Grp Cap(c), veh/h	18	881	747	83	0	944	342	0	346	68	0	0
V/C Ratio(X)	0.55	0.76	0.20	0.78	0.00	0.45	0.78	0.00	0.12	0.63	0.00	0.00
Avail Cap(c_a), veh/h	333	1508	1279	333	0	1501	711	0	718	430	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.5	13.8	9.8	30.1	0.0	10.0	24.5	0.0	21.4	30.3	0.0	0.0
Incr Delay (d2), s/veh	18.2	1.4	0.1	11.4	0.0	0.3	2.9	0.0	0.1	7.0	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	0.3	9.8	1.6	1.4	0.0	4.8	4.7	0.0	0.6	0.9	0.0	0.0
LnGrp Delay(d),s/veh	49.6	15.2	9.9	41.5	0.0	10.3	27.4	0.0	21.5	37.4	0.0	0.0
LnGrp LOS	D	B	A	D		B	C		C	D		
Approach Vol, veh/h		828			489			309			43	
Approach Delay, s/veh		14.6			14.5			26.6			37.4	
Approach LOS		B			B			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	4.7	36.5		6.4	7.0	34.2		16.3
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.6
Max Green Setting (Gmax), s	12.0	50.0		15.0	12.0	50.0		25.0
Max Q Clear Time (g_c+I1), s	2.4	11.3		3.5	4.3	20.8		11.1
Green Ext Time (p_c), s	0.0	8.1		0.1	0.0	7.7		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection 4 **El Dorado Hills Blvd/Francisco Way-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	530	515	97.2%	23.1	8.5	C
	Through	380	389	102.3%	16.5	4.0	B
	Right Turn	20	20	100.0%	12.0	5.2	B
	Subtotal	930	924	99.3%	20.1	5.7	C
SB	Left Turn	20	23	112.5%	6.8	1.2	A
	Through	160	163	101.6%	14.5	2.0	B
	Right Turn	10	10	98.0%	7.6	5.9	A
	Subtotal	190	195	102.6%	13.2	2.0	B
EB	Left Turn	10	10	97.0%	7.1	4.2	A
	Through	40	41	101.8%	9.6	1.0	A
	Right Turn	480	470	97.9%	3.4	0.4	A
	Subtotal	530	521	98.2%	4.0	0.4	A
WB	Left Turn	30	30	99.7%	8.6	1.5	A
	Through	40	43	108.0%	9.5	1.3	A
	Right Turn	50	51	102.2%	6.9	2.0	A
	Subtotal	120	124	103.5%	8.2	1.5	A
Total		1,770	1,763	99.6%	13.4	3.0	B

Intersection	
Intersection Delay, s/veh	34.8
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations			↕				↕				↕				↕	
Traffic Vol, veh/h	0	20	10	50	0	100	10	60	0	80	290	150	0	70	220	90
Future Vol, veh/h	0	20	10	50	0	100	10	60	0	80	290	150	0	70	220	90
Peak Hour Factor	0.92	0.79	0.79	0.79	0.92	0.87	0.87	0.87	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	25	13	63	0	115	11	69	0	94	341	176	0	82	259	106
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.2	14.6	52.4	24.6
HCM LOS	B	B	F	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	25%	59%	18%
Vol Thru, %	56%	12%	6%	58%
Vol Right, %	29%	62%	35%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	520	80	170	380
LT Vol	80	20	100	70
Through Vol	290	10	10	220
RT Vol	150	50	60	90
Lane Flow Rate	612	101	195	447
Geometry Grp	1	1	1	1
Degree of Util (X)	0.969	0.204	0.385	0.745
Departure Headway (Hd)	5.704	7.246	7.089	5.997
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	636	492	506	599
Service Time	3.758	5.335	5.163	4.056
HCM Lane V/C Ratio	0.962	0.205	0.385	0.746
HCM Control Delay	52.4	12.2	14.6	24.6
HCM Lane LOS	F	B	B	C
HCM 95th-tile Q	13.9	0.8	1.8	6.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	210	190	950	310	210	560
Future Volume (veh/h)	210	190	950	310	210	560
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	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	250	9	1011	312	241	644
Adj No. of Lanes	1	1	2	0	2	2
Peak Hour Factor	0.84	0.84	0.94	0.94	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	316	282	1256	385	468	2475
Arrive On Green	0.18	0.18	0.47	0.44	0.14	0.70
Sat Flow, veh/h	1774	1583	2757	816	3442	3632
Grp Volume(v), veh/h	250	9	669	654	241	644
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1710	1721	1770
Q Serve(g_s), s	8.8	0.3	21.0	21.6	4.3	4.4
Cycle Q Clear(g_c), s	8.8	0.3	21.0	21.6	4.3	4.4
Prop In Lane	1.00	1.00		0.48	1.00	
Lane Grp Cap(c), veh/h	316	282	835	807	468	2475
V/C Ratio(X)	0.79	0.03	0.80	0.81	0.51	0.26
Avail Cap(c_a), veh/h	1100	982	1270	1228	1314	2541
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	25.7	22.2	14.7	15.2	26.3	3.6
Incr Delay (d2), s/veh	1.7	0.0	1.1	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.1	10.5	10.3	2.0	2.1
LnGrp Delay(d),s/veh	27.4	22.2	15.8	16.6	26.6	3.6
LnGrp LOS	C	C	B	B	C	A
Approach Vol, veh/h	259		1323			885
Approach Delay, s/veh	27.2		16.2			9.9
Approach LOS	C		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.9	34.9		15.7		49.8		
Change Period (Y+Rc), s	6.0	* 6		4.6		6.0		
Max Green Setting (Gmax), s	25.0	* 45		40.0		45.0		
Max Q Clear Time (g_c+I1), s	10.3	23.6		10.8		6.4		
Green Ext Time (p_c), s	2.8	5.3		0.4		3.0		

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

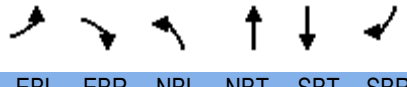
Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	0	270	0	0	0	230	320	0	0	240	110
Future Volume (veh/h)	190	0	270	0	0	0	230	320	0	0	240	110
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)	0.98		0.98	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	1900	1863	1863	1863
Adj Flow Rate, veh/h	218	0	34	0	0	0	271	376	0	0	267	43
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.60	0.60	0.60	0.85	0.85	0.85	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	348	373	311	4	5	0	354	1117	0	4	559	469
Arrive On Green	0.20	0.00	0.20	0.00	0.00	0.00	0.20	0.60	0.00	0.00	0.30	0.30
Sat Flow, veh/h	1739	1863	1552	1774	1863	0	1774	1863	0	1774	1863	1562
Grp Volume(v), veh/h	218	0	34	0	0	0	271	376	0	0	267	43
Grp Sat Flow(s),veh/h/ln	1739	1863	1552	1774	1863	0	1774	1863	0	1774	1863	1562
Q Serve(g_s), s	4.6	0.0	0.7	0.0	0.0	0.0	5.8	4.1	0.0	0.0	4.7	0.8
Cycle Q Clear(g_c), s	4.6	0.0	0.7	0.0	0.0	0.0	5.8	4.1	0.0	0.0	4.7	0.8
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	373	311	4	5	0	354	1117	0	4	559	469
V/C Ratio(X)	0.63	0.00	0.11	0.00	0.00	0.00	0.77	0.34	0.00	0.00	0.48	0.09
Avail Cap(c_a), veh/h	1765	1891	1575	1774	1863	0	2440	1923	0	887	1923	1613
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	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	0.0	13.1	0.0	0.0	0.0	15.1	4.0	0.0	0.0	11.4	10.1
Incr Delay (d2), s/veh	0.7	0.0	0.1	0.0	0.0	0.0	2.6	0.1	0.0	0.0	0.5	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(50%),veh/ln	2.2	0.0	0.3	0.0	0.0	0.0	3.0	2.0	0.0	0.0	2.4	0.3
LnGrp Delay(d),s/veh	15.3	0.0	13.1	0.0	0.0	0.0	17.7	4.1	0.0	0.0	11.9	10.1
LnGrp LOS	B		B				B	A			B	B
Approach Vol, veh/h		252			0			647			310	
Approach Delay, s/veh		15.0			0.0			9.8			11.7	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	28.0		12.0	12.0	16.0		40.0
Change Period (Y+Rc), s	4.0	5.3		4.6	4.0	5.3		4.0
Max Green Setting (Gmax), s	20.0	40.0		40.0	55.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	10.3	6.1		6.6	7.8	6.7		0.0
Green Ext Time (p_c), s	0.0	3.8		0.4	0.6	3.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	100	170	1270	740	20
Future Volume (veh/h)	30	100	170	1270	740	20
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			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	1900
Adj Flow Rate, veh/h	34	1	185	1380	804	20
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.87	0.87	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	60	54	225	2898	2182	54
Arrive On Green	0.03	0.03	0.13	0.82	0.62	0.59
Sat Flow, veh/h	1774	1583	1774	3632	3622	88
Grp Volume(v), veh/h	34	1	185	1380	403	421
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1847
Q Serve(g_s), s	1.0	0.0	5.5	6.3	6.1	6.1
Cycle Q Clear(g_c), s	1.0	0.0	5.5	6.3	6.1	6.1
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	60	54	225	2898	1094	1142
V/C Ratio(X)	0.56	0.02	0.82	0.48	0.37	0.37
Avail Cap(c_a), veh/h	809	722	933	3494	1747	1824
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	25.9	25.4	23.1	1.5	5.1	5.2
Incr Delay (d2), s/veh	8.3	0.1	4.1	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.9	2.9	3.0	3.1
LnGrp Delay(d),s/veh	34.1	25.5	27.2	1.6	5.4	5.4
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	35			1565	824	
Approach Delay, s/veh	33.9			4.6	5.4	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.5		5.9	10.9	37.6		
Change Period (Y+Rc), s		5.7		3.8	3.6	5.7		
Max Green Setting (Gmax), s		52.0		25.0	29.0	52.0		
Max Q Clear Time (g_c+I1), s		8.3		3.0	7.5	8.1		
Green Ext Time (p_c), s		23.7		0.1	0.3	23.8		

Intersection Summary	
HCM 2010 Ctrl Delay	5.3
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	20	120	0	20	10	170	1050	10	10	690	170
Future Volume (veh/h)	430	20	120	0	20	10	170	1050	10	10	690	170
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		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	457	21	29	0	48	0	193	1193	11	11	734	165
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	15	310	0	77	0	226	2018	19	13	1268	285
Arrive On Green	0.20	0.20	0.20	0.00	0.04	0.00	0.13	0.56	0.54	0.01	0.44	0.42
Sat Flow, veh/h	1700	78	1578	0	1863	0	1774	3593	33	1774	2871	645
Grp Volume(v), veh/h	478	0	29	0	48	0	193	587	617	11	452	447
Grp Sat Flow(s),veh/h/ln	1778	0	1578	0	1863	0	1774	1770	1857	1774	1770	1747
Q Serve(g_s), s	17.0	0.0	1.3	0.0	2.2	0.0	9.2	18.8	18.9	0.5	16.6	16.7
Cycle Q Clear(g_c), s	17.0	0.0	1.3	0.0	2.2	0.0	9.2	18.8	18.9	0.5	16.6	16.7
Prop In Lane	0.96		1.00	0.00		0.00	1.00		0.02	1.00		0.37
Lane Grp Cap(c), veh/h	349	0	310	0	77	0	226	994	1043	13	781	771
V/C Ratio(X)	1.37	0.00	0.09	0.00	0.62	0.00	0.85	0.59	0.59	0.85	0.58	0.58
Avail Cap(c_a), veh/h	349	0	310	0	579	0	574	1534	1610	76	1037	1024
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	0.0	28.4	0.0	40.8	0.0	37.0	12.4	12.5	42.9	18.1	18.4
Incr Delay (d2), s/veh	183.0	0.0	0.1	0.0	8.8	0.0	3.6	0.6	0.6	40.3	0.8	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	26.0	0.0	0.6	0.0	1.3	0.0	4.7	9.3	9.8	0.4	8.2	8.2
LnGrp Delay(d),s/veh	217.8	0.0	28.6	0.0	49.6	0.0	40.5	13.1	13.1	83.2	18.9	19.2
LnGrp LOS	F		C		D		D	B	B	F	B	B
Approach Vol, veh/h		507			48			1397			910	
Approach Delay, s/veh		207.0			49.6			16.9			19.8	
Approach LOS		F			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	4.6	52.6		8.3	15.0	42.2		21.0
Change Period (Y+Rc), s	3.7	5.7		5.3	3.7	5.7		5.3
Max Green Setting (Gmax), s	4.9	73.3		26.3	28.3	49.0		15.7
Max Q Clear Time (g_c+I1), s	2.5	20.9		4.2	11.2	18.7		19.0
Green Ext Time (p_c), s	0.0	23.3		0.2	0.2	17.8		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		52.0
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	30	250	290	30	40	370	1140	680	60	700	50
Future Volume (veh/h)	30	30	250	290	30	40	370	1140	680	60	700	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	33	33	23	372	0	0	402	1239	0	65	761	50
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	51	35	510	268	0	435	2065	924	84	1300	85
Arrive On Green	0.05	0.05	0.05	0.14	0.00	0.00	0.25	0.58	0.00	0.05	0.39	0.37
Sat Flow, veh/h	1774	1024	713	3548	1863	0	1774	3539	1583	1774	3371	221
Grp Volume(v), veh/h	33	0	56	372	0	0	402	1239	0	65	399	412
Grp Sat Flow(s),veh/h/ln	1774	0	1737	1774	1863	0	1774	1770	1583	1774	1770	1823
Q Serve(g_s), s	1.6	0.0	2.9	9.1	0.0	0.0	20.1	20.4	0.0	3.3	16.3	16.4
Cycle Q Clear(g_c), s	1.6	0.0	2.9	9.1	0.0	0.0	20.1	20.4	0.0	3.3	16.3	16.4
Prop In Lane	1.00		0.41	1.00		0.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	88	0	86	510	268	0	435	2065	924	84	682	703
V/C Ratio(X)	0.37	0.00	0.65	0.73	0.00	0.00	0.92	0.60	0.00	0.77	0.59	0.59
Avail Cap(c_a), veh/h	487	0	477	974	511	0	487	2065	924	487	810	834
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	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	0.0	42.5	37.3	0.0	0.0	33.5	12.2	0.0	42.9	22.2	22.3
Incr Delay (d2), s/veh	1.0	0.0	3.0	2.9	0.0	0.0	21.1	0.6	0.0	5.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.5	4.7	0.0	0.0	12.4	10.0	0.0	1.8	8.2	8.5
LnGrp Delay(d),s/veh	42.9	0.0	45.5	40.2	0.0	0.0	54.6	12.8	0.0	48.4	23.4	23.5
LnGrp LOS	D		D	D			D	B		D	C	C
Approach Vol, veh/h		89			372			1641			876	
Approach Delay, s/veh		44.6			40.2			23.0			25.3	
Approach LOS		D			D			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	8.3	57.2		8.5	26.4	39.1		17.1
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	25.6	50.0		25.0	25.0	40.0		25.0
Max Q Clear Time (g_c+I1), s	5.3	22.4		4.9	22.1	18.4		11.1
Green Ext Time (p_c), s	0.1	21.1		0.2	0.2	15.1		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	700	60	10	300	50	10
Future Vol, veh/h	700	60	10	300	50	10
Conflicting Peds, #/hr	0	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	76	76	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	854	73	13	395	63	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	927	0	1311	892
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	421	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	737	-	175	341
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	662	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	736	-	172	340
Mov Cap-2 Maneuver	-	-	-	-	172	-
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	36.8
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	187	-	-	736	-
HCM Lane V/C Ratio	0.406	-	-	0.018	-
HCM Control Delay (s)	36.8	-	-	10	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	1.8	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	430	60	100	210	300	50	310	290	200	230	50
Future Volume (veh/h)	150	430	60	100	210	300	50	310	290	200	230	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	195	558	66	116	244	91	82	508	0	238	274	46
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.77	0.77	0.77	0.86	0.86	0.86	0.61	0.61	0.61	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	892	105	151	581	211	107	867	388	287	1053	174
Arrive On Green	0.14	0.28	0.26	0.08	0.23	0.21	0.06	0.25	0.00	0.16	0.35	0.33
Sat Flow, veh/h	1774	3189	376	1774	2543	923	1774	3539	1583	1774	3039	504
Grp Volume(v), veh/h	195	309	315	116	168	167	82	508	0	238	158	162
Grp Sat Flow(s),veh/h/ln	1774	1770	1795	1774	1770	1697	1774	1770	1583	1774	1770	1773
Q Serve(g_s), s	7.5	10.7	10.8	4.5	5.7	6.0	3.2	8.9	0.0	9.1	4.5	4.6
Cycle Q Clear(g_c), s	7.5	10.7	10.8	4.5	5.7	6.0	3.2	8.9	0.0	9.1	4.5	4.6
Prop In Lane	1.00		0.21	1.00		0.54	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	242	495	502	151	405	388	107	867	388	287	613	614
V/C Ratio(X)	0.81	0.62	0.63	0.77	0.41	0.43	0.77	0.59	0.00	0.83	0.26	0.26
Avail Cap(c_a), veh/h	507	1044	1059	507	1044	1001	507	1835	821	507	918	919
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	22.0	22.1	31.4	23.0	23.4	32.4	23.3	0.0	28.4	16.4	16.6
Incr Delay (d2), s/veh	4.7	1.0	1.0	6.1	0.5	0.6	8.2	0.5	0.0	4.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.3	5.5	2.4	2.8	2.8	1.8	4.4	0.0	4.8	2.2	2.3
LnGrp Delay(d),s/veh	34.1	23.0	23.1	37.4	23.5	24.0	40.7	23.8	0.0	33.0	16.6	16.8
LnGrp LOS	C	C	C	D	C	C	D	C		C	B	B
Approach Vol, veh/h		819			451			590			558	
Approach Delay, s/veh		25.7			27.3			26.1			23.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	21.2	9.9	23.6	8.2	28.3	13.5	20.0
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	20.0	35.0	20.0	40.0	20.0	35.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	11.1	10.9	6.5	12.8	5.2	6.6	9.5	8.0
Green Ext Time (p_c), s	0.3	4.7	0.2	5.3	0.1	4.8	0.3	5.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Intersection 13 **El Dorado Hills Blvd/Saratoga Wy-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	226	229	101.2%	63.6	12.1	E
	Through	1,297	1,318	101.6%	31.6	2.5	C
	Right Turn	71	68	96.1%	27.5	3.3	C
	Subtotal	1,594	1,615	101.3%	36.0	3.4	D
SB	Left Turn	150	155	103.3%	103.1	22.0	F
	Through	900	905	100.6%	51.6	13.5	D
	Right Turn	80	85	105.6%	44.7	7.7	D
	Subtotal	1,130	1,145	101.3%	58.5	14.5	E
EB	Left Turn	240	237	98.5%	58.3	14.8	E
	Through	100	107	107.0%	65.8	15.2	E
	Right Turn	460	453	98.5%	33.1	14.8	C
	Subtotal	800	797	99.6%	44.5	14.7	D
WB	Left Turn	61	58	94.3%	35.7	10.3	D
	Through	90	89	98.7%	75.0	25.5	E
	Right Turn	260	256	98.5%	55.1	22.5	E
	Subtotal	411	402	97.9%	57.4	19.0	E
Total		3,935	3,958	100.6%	46.5	7.7	D

Intersection 15 **El Dorado Hills Blvd/US 50 WB Ramps-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	983	963	97.9%	43.0	16.0	D
	Through	1,293	1,298	100.4%	14.9	1.3	B
	Right Turn	201	196	97.7%	12.9	1.4	B
	Subtotal	2,477	2,457	99.2%	25.8	6.7	C
SB	Left Turn	41	35	85.1%	87.7	18.9	F
	Through	1,143	1,127	98.6%	65.1	17.2	E
	Right Turn	241	247	102.5%	30.4	11.9	C
	Subtotal	1,425	1,409	98.9%	59.7	16.4	E
EB	Left Turn	221	225	101.7%	40.1	2.9	D
	Through	60	61	102.0%	40.9	6.8	D
	Right Turn	50	48	95.8%	2.1	0.2	A
	Subtotal	331	334	100.8%	34.3	3.1	C
WB	Left Turn	180	175	97.2%	35.6	4.0	D
	Through	10	10	97.0%	33.6	14.8	C
	Right Turn	80	82	102.6%	5.2	1.7	A
	Subtotal	270	267	98.8%	25.7	3.4	C
Total		4,503	4,467	99.2%	37.4	7.5	D

Intersection 16 **Latrobe Rd/US 50 EB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	2,006	1,985	98.9%	11.1	3.4	B
	Right Turn	522	517	99.1%	13.8	3.0	B
	Subtotal	2,528	2,502	99.0%	11.7	3.1	B
SB	Left Turn	314	305	97.0%	27.7	1.6	C
	Through	1,060	1,045	98.6%	8.8	1.2	A
	Right Turn						
	Subtotal	1,374	1,350	98.3%	13.0	1.5	B
EB	Left Turn						
	Through						
	Right Turn	810	816	100.7%	49.4	15.5	D
	Subtotal	810	816	100.7%	49.4	15.5	D
WB	Left Turn						
	Through						
	Right Turn	470	476	101.2%	12.0	1.2	B
	Subtotal	470	476	101.2%	12.0	1.2	B
Total		5,182	5,143	99.3%	18.3	3.4	B

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	9	85.0%	63.2	19.2	E
	Through	1,722	1,710	99.3%	90.5	18.4	F
	Right Turn	91	91	100.1%	7.3	3.3	A
	Subtotal	1,823	1,810	99.3%	86.5	17.6	F
SB	Left Turn	447	442	98.9%	42.0	5.8	D
	Through	1,413	1,412	99.9%	13.1	3.3	B
	Right Turn	10	10	96.0%	1.6	1.1	A
	Subtotal	1,870	1,864	99.7%	19.9	2.8	B
EB	Left Turn	250	246	98.2%	31.2	3.9	C
	Through	30	29	95.3%	24.2	12.1	C
	Right Turn	90	82	90.9%	13.7	3.9	B
	Subtotal	370	356	96.2%	26.9	3.1	C
WB	Left Turn	71	67	94.9%	44.6	8.9	D
	Through	10	10	101.0%	30.4	17.4	C
	Right Turn	550	543	98.7%	17.7	2.2	B
	Subtotal	631	621	98.4%	21.1	3.0	C
Total		4,694	4,650	99.1%	46.6	7.9	D

Intersection 18 **Latrobe Rd/White Rock Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	63	63	99.2%	52.7	8.9	D
	Through	1,050	1,051	100.1%	35.0	7.6	C
	Right Turn	280	284	101.4%	19.4	7.8	B
	Subtotal	1,393	1,397	100.3%	32.4	7.2	C
SB	Left Turn	243	247	101.4%	43.4	10.3	D
	Through	900	891	99.0%	25.8	8.0	C
	Right Turn	430	423	98.4%	13.5	3.0	B
	Subtotal	1,573	1,561	99.2%	25.4	6.6	C
EB	Left Turn	570	570	99.9%	59.6	12.5	E
	Through	270	260	96.2%	34.5	2.7	C
	Right Turn	110	113	102.4%	22.9	3.3	C
	Subtotal	950	942	99.2%	48.6	7.9	D
WB	Left Turn	311	309	99.4%	36.4	1.6	D
	Through	320	311	97.2%	43.7	3.5	D
	Right Turn	200	205	102.3%	7.3	1.4	A
	Subtotal	831	825	99.2%	31.6	2.0	C
Total		4,747	4,725	99.5%	33.3	3.4	C

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	2	200	590	10	10	540	100	30	10	10	1	190	10	260
Future Volume (veh/h)	2	200	590	10	10	540	100	30	10	10	1	190	10	260
Number		5	2	12	1	6	16	7	4	14		3	8	18
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		1.00	1.00		1.00		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1900	1863	1863	1900		1863	1863	1900
Adj Flow Rate, veh/h		241	711	7	12	675	114	35	12	0		207	11	31
Adj No. of Lanes		1	2	1	1	2	0	1	1	0		1	1	0
Peak Hour Factor		0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2		2	2	2
Cap, veh/h		263	2448	1094	21	1683	284	60	63	0		236	57	161
Arrive On Green		0.15	0.69	0.69	0.01	0.56	0.54	0.03	0.03	0.00		0.13	0.13	0.13
Sat Flow, veh/h		1774	3539	1581	1774	3030	511	1774	1863	0		1774	430	1212
Grp Volume(v), veh/h		241	711	7	12	394	395	35	12	0		207	0	42
Grp Sat Flow(s),veh/h/ln		1774	1770	1581	1774	1770	1771	1774	1863	0		1774	0	1642
Q Serve(g_s), s		18.1	10.5	0.2	0.9	17.2	17.4	2.6	0.8	0.0		15.5	0.0	3.1
Cycle Q Clear(g_c), s		18.1	10.5	0.2	0.9	17.2	17.4	2.6	0.8	0.0		15.5	0.0	3.1
Prop In Lane		1.00		1.00	1.00		0.29	1.00		0.00		1.00		0.74
Lane Grp Cap(c), veh/h		263	2448	1094	21	983	984	60	63	0		236	0	218
V/C Ratio(X)		0.92	0.29	0.01	0.58	0.40	0.40	0.58	0.19	0.00		0.88	0.00	0.19
Avail Cap(c_a), veh/h		263	2448	1094	79	983	984	197	317	0		283	0	377
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)		0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	0.00		1.00	0.00	1.00
Uniform Delay (d), s/veh		56.7	8.0	6.4	66.4	17.2	17.4	64.3	63.4	0.0		57.4	0.0	52.3
Incr Delay (d2), s/veh		28.7	0.2	0.0	8.9	1.2	1.2	3.3	0.5	0.0		20.1	0.0	0.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.9	5.1	0.1	0.5	8.8	8.8	1.3	0.4	0.0		8.9	0.0	1.4
LnGrp Delay(d),s/veh		85.4	8.3	6.4	75.3	18.4	18.6	67.5	64.0	0.0		77.5	0.0	52.7
LnGrp LOS		F	A	A	E	B	B	E	E			E		D
Approach Vol, veh/h			959			801			47				249	
Approach Delay, s/veh			27.6			19.3			66.6				73.3	
Approach LOS			C			B			E				E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	97.4	23.5	8.5	24.0	79.0	8.6	23.4
Change Period (Y+Rc), s	4.5	6.0	6.0	6.0	* 5.2	6.0	* 5.2	* 6
Max Green Setting (Gmax), s	5.5	65.0	21.0	21.0	* 19	51.0	* 14	* 31
Max Q Clear Time (g_c+I1), s	2.9	12.5	17.5	2.8	20.1	19.4	4.6	5.1
Green Ext Time (p_c), s	0.0	16.7	0.0	0.2	0.0	14.1	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

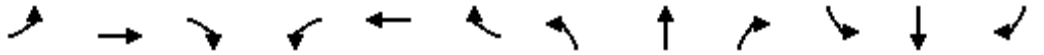
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	370	120	180	410	110	90	40	170	140	40	50
Future Volume (veh/h)	50	370	120	180	410	110	90	40	170	140	40	50
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	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	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	55	407	124	231	526	136	111	49	77	156	44	20
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.78	0.78	0.78	0.81	0.81	0.81	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	558	170	263	733	189	212	78	122	226	154	70
Arrive On Green	0.03	0.41	0.38	0.15	0.51	0.50	0.12	0.12	0.12	0.13	0.13	0.12
Sat Flow, veh/h	1774	1370	417	1774	1428	369	1774	650	1022	1774	1210	550
Grp Volume(v), veh/h	55	0	531	231	0	662	111	0	126	156	0	64
Grp Sat Flow(s),veh/h/ln	1774	0	1788	1774	0	1797	1774	0	1672	1774	0	1760
Q Serve(g_s), s	2.5	0.0	20.3	10.3	0.0	23.0	4.8	0.0	5.8	6.8	0.0	2.7
Cycle Q Clear(g_c), s	2.5	0.0	20.3	10.3	0.0	23.0	4.8	0.0	5.8	6.8	0.0	2.7
Prop In Lane	1.00		0.23	1.00		0.21	1.00		0.61	1.00		0.31
Lane Grp Cap(c), veh/h	60	0	728	263	0	922	212	0	199	226	0	224
V/C Ratio(X)	0.92	0.00	0.73	0.88	0.00	0.72	0.52	0.00	0.63	0.69	0.00	0.29
Avail Cap(c_a), veh/h	538	0	1039	538	0	1029	772	0	728	772	0	767
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	20.4	33.7	0.0	15.3	33.4	0.0	34.0	33.8	0.0	32.0
Incr Delay (d2), s/veh	18.5	0.0	1.9	3.7	0.0	2.2	2.5	0.0	4.1	4.6	0.0	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	1.5	0.0	10.3	5.3	0.0	11.8	2.5	0.0	2.9	3.6	0.0	1.4
LnGrp Delay(d),s/veh	57.4	0.0	22.3	37.5	0.0	17.4	36.0	0.0	38.0	38.4	0.0	32.8
LnGrp LOS	E		C	D		B	D		D	D		C
Approach Vol, veh/h		586			893			237			220	
Approach Delay, s/veh		25.6			22.6			37.1			36.8	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.7	46.2		13.6	16.0	36.9		14.3
Change Period (Y+Rc), s	3.5	* 6		* 4.2	3.5	6.0		4.2
Max Green Setting (Gmax), s	25.0	* 45		* 35	25.0	45.0		35.0
Max Q Clear Time (g_c+I1), s	4.5	25.0		7.8	12.3	22.3		8.8
Green Ext Time (p_c), s	0.0	8.1		1.3	0.2	8.6		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	580	0	290	80	890	0	0	310	130
Future Volume (veh/h)	0	0	0	580	0	290	80	890	0	0	310	130
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				644	0	198	86	957	0	0	356	26
Adj No. of Lanes				2	0	1	1	2	0	0	2	1
Peak Hour Factor				0.90	0.90	0.90	0.93	0.93	0.93	0.87	0.87	0.87
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				979	0	437	236	1878	0	0	1030	461
Arrive On Green				0.27	0.00	0.27	0.13	0.52	0.00	0.00	0.29	0.29
Sat Flow, veh/h				3619	0	1615	1810	3705	0	0	3705	1615
Grp Volume(v), veh/h				644	0	198	86	957	0	0	356	26
Grp Sat Flow(s),veh/h/ln				1810	0	1615	1810	1805	0	0	1805	1615
Q Serve(g_s), s				6.0	0.0	3.9	1.7	6.6	0.0	0.0	3.0	0.4
Cycle Q Clear(g_c), s				6.0	0.0	3.9	1.7	6.6	0.0	0.0	3.0	0.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				979	0	437	236	1878	0	0	1030	461
V/C Ratio(X)				0.66	0.00	0.45	0.36	0.51	0.00	0.00	0.35	0.06
Avail Cap(c_a), veh/h				3009	0	1343	1192	4983	0	0	4983	2229
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				12.4	0.0	11.6	15.2	6.0	0.0	0.0	10.8	9.9
Incr Delay (d2), s/veh				0.3	0.0	0.3	0.3	0.1	0.0	0.0	0.1	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
%ile BackOfQ(50%),veh/ln				3.0	0.0	1.7	0.8	3.2	0.0	0.0	1.5	0.2
LnGrp Delay(d),s/veh				12.7	0.0	11.9	15.5	6.1	0.0	0.0	10.9	9.9
LnGrp LOS				B		B	B	A			B	A
Approach Vol, veh/h					842			1043			382	
Approach Delay, s/veh					12.5			6.8			10.8	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.9			9.0	14.9		14.3
Change Period (Y+Rc), s		6.8			* 4.2	6.8		5.8
Max Green Setting (Gmax), s		50.0			* 25	50.0		30.0
Max Q Clear Time (g_c+I1), s		8.6			3.7	5.0		8.0
Green Ext Time (p_c), s		3.1			0.1	3.1		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	325	60	230	645	760	130
Future Volume (veh/h)	325	60	230	645	760	130
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	365	15	250	701	800	45
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	0.89	0.89	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	758	338	595	2232	1309	586
Arrive On Green	0.21	0.21	0.17	0.62	0.36	0.36
Sat Flow, veh/h	3619	1615	3510	3705	3705	1615
Grp Volume(v), veh/h	365	15	250	701	800	45
Grp Sat Flow(s),veh/h/ln	1810	1615	1755	1805	1805	1615
Q Serve(g_s), s	4.1	0.3	3.0	4.3	8.4	0.8
Cycle Q Clear(g_c), s	4.1	0.3	3.0	4.3	8.4	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	758	338	595	2232	1309	586
V/C Ratio(X)	0.48	0.04	0.42	0.31	0.61	0.08
Avail Cap(c_a), veh/h	2086	931	2281	4100	4100	1834
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	16.2	14.7	17.3	4.2	12.1	9.7
Incr Delay (d2), s/veh	0.2	0.0	0.2	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.3	1.4	2.1	4.1	0.4
LnGrp Delay(d),s/veh	16.3	14.7	17.4	4.2	12.3	9.7
LnGrp LOS	B	B	B	A	B	A
Approach Vol, veh/h	380			951	845	
Approach Delay, s/veh	16.3			7.7	12.2	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		32.7		13.7	11.9	20.9		
Change Period (Y+Rc), s		6.8		5.8	* 4.2	6.8		
Max Green Setting (Gmax), s		50.0		25.0	* 30	50.0		
Max Q Clear Time (g_c+I1), s		6.3		6.1	5.0	10.4		
Green Ext Time (p_c), s		3.6		0.6	0.4	3.6		

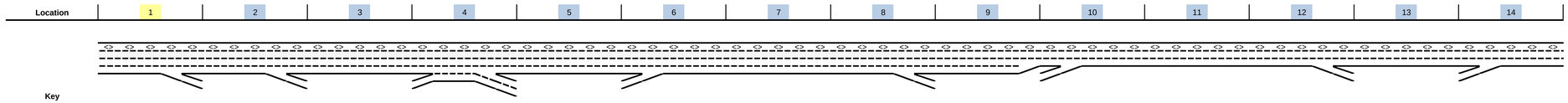
Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Notes

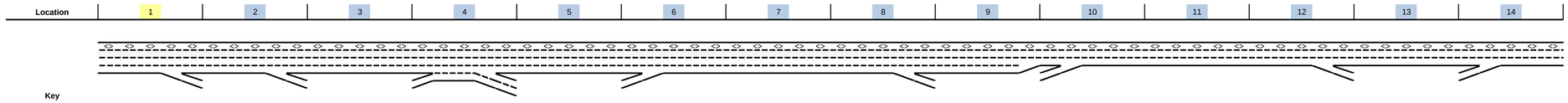
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Project: Central El Dorado Hills Specific Plan **Alternative:** Near Term No Project Conditions
Freeway Corridor: Eastbound US 50 **Time Period:** AM Peak Hour

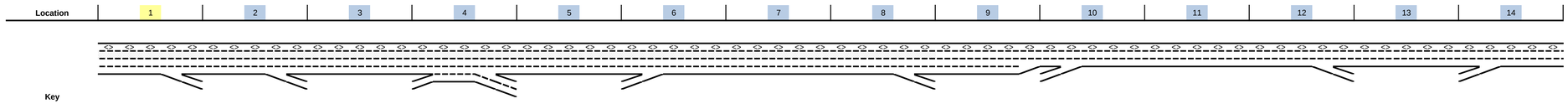
Data Entry Value
Calculated Value



Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Define Freeway Segment														
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	850	1,975	3,000	1,575	1,500	2,925	1,500	2,100	1,500	3,300	1,500	1,350	1,500
Accel Length						550				500				500
Decel Length	150	150						150				150		
Mainline Volume	2,550	1,480	1,360	1,360	1,600	1,600	2,140	2,140	1,860	1,860	2,070	2,070	1,850	1,850
On Ramp Volume				350		540				210				470
Off Ramp Volume	1,070	120		110				280				220		
Express Lane Volume	128	74	68	68	80	80	107	107	93	93	104	104	93	93
EL On Ramp Volume														
EL Off Ramp Volume														
Calculate Flow Rate in General Purpose Lanes (GP)														
GP Volume (vph)	2,423	1,406	1,292	1,642	1,520	2,060	2,033	2,033	1,767	1,977	1,967	1,967	1,758	2,228
PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
GP Lanes	3	3	3	4	3	3	3	3	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	5.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.862	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,840	1,648	1,515	1,925	1,782	2,415	2,711	2,384	2,072	2,318	2,306	2,306	2,061	2,612
GP Flow (pcphpl)	947	549	505	481	594	805	904	795	691	1,159	1,153	1,153	1,030	1,306
Calculate Speed in General Purpose Lanes														
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12	
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6	69.6	
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes														
v/c ratio	0.40	0.23	0.21	0.20	0.25	0.34	0.38	0.34	0.29	0.49	0.49	0.49	0.44	0.56
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	14.6	8.5	7.8	7.4	9.1	12.4	13.9	12.2	10.6	17.8	17.7	17.7	15.9	20.1
LOS	B	A	A	A	A	B	B	B	A	B	B	B	B	C
Calculate Operations for Entering GP Lanes														
GP_{IN} Vol (pcph)				1,541		1,819				2,019				2,093
GP_{IN} Cap (pcph)				7,050		7,050				4,700				4,700
GP_{IN} v/c ratio				0.22		0.26				0.43				0.45
Calculate Operations for Exiting GP Lanes														
GP_{OUT} Vol (pcph)	1,665	1,517		1,805				2,001	2,072			2,061		
GP_{OUT} Cap (pcph)	7,050	7,050		7,050				7,050	4,700			4,700		
GP_{OUT} v/c ratio	0.24	0.22		0.26				0.28	0.44			0.44		



Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Flow Rate in Express Lanes (EL)														
EL Volume (vph)	128	74	68	68	80	80	107	107	93	93	104	104	93	93
PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	165	96	88	88	104	104	150	139	120	120	134	134	120	120
EL Flow (pcphpl)	165	96	88	88	104	104	150	139	120	120	134	134	120	120
Calculate Speed in Express Lanes														
Lane Width (ft)														
Shoulder Width														
TRD														
f_{LW}														
f_{LC}														
Calc'd FFS														
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes														
EL_{IN} v/c ratio	0.09	0.05	0.05	0.05	0.06	0.06	0.09	0.08	0.07	0.07	0.08	0.08	0.07	0.07
Calculate On Ramp Flow Rate														
On Volume (vph)				350		540				210				470
PHF				0.92		0.92				0.71				0.92
Total Lanes				1		1				1				1
Terrain				Level		Level				Level				Level
Grade %				0.0%		0.0%				0.0%				0.0%
Grade Length (mi)				0.00		0.00				0.00				0.00
Truck & Bus %				2.0%		3.0%				2.0%				3.0%
RV %				0.0%		0.0%				0.0%				0.0%
E_T				1.5		1.5				1.5				1.5
E_R				1.2		1.2				1.2				1.2
f_{HV}				0.990		0.985				0.990				0.985
f_p				1.00		1.00				1.00				1.00
On Flow (pcph)				384		596				299				519
On Flow (pcphpl)				384		596				299				519
Calculate On Ramp Roadway Operations														
On Ramp Type				Right		Right				Right				Right
On Ramp Speed (mph)				45		25				45				25
On Ramp Cap (pcph)				2,100		1,900				2,100				1,900
On Ramp v/c ratio				0.18		0.31				0.14				0.27



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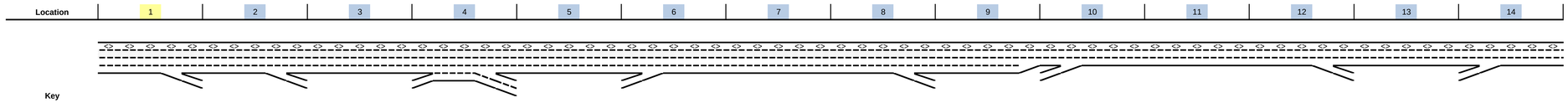
Calculate Off Ramp Flow Rate														
Off Volume (vph)	1,070	120		110				280				220		
PHF	0.92	0.92		0.94				0.74				0.91		
Total Lanes	1	1		2				1				1		
Terrain	Level	Level		Level				Level				Level		
Grade %	0.0%	0.0%		0.0%				0.0%				0.0%		
Grade Length (mi)	0.00	0.00		0.00				0.00				0.00		
Truck & Bus %	2.0%	2.0%		5.0%				2.0%				2.0%		
RV %	0.0%	0.0%		0.0%				0.0%				0.0%		
E_T	1.5	1.5		1.5				1.5				1.5		
E_R	1.2	1.2		1.2				1.2				1.2		
f_{HV}	0.990	0.990		0.976				0.990				0.990		
f_p	1.00	1.00		1.00				1.00				1.00		
Off Flow (pcph)	1,175	132		120				382				244		
Off Flow (pcphpl)	1,175	132		60				382				244		
Calculate Off Ramp Roadway Operations														
Off Ramp Type	Right	Right		Right				Right				Right		
Off Ramp Speed	45	25		45				45				45		
Off Ramp Cap (pcph)	2,100	1,900		4,200				2,100				2,100		
Off Ramp v/c ratio	0.56	0.07		0.03				0.18				0.12		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps														
Up Type		Off				No		No						
Up Distance		2,350												
Up Flow (pcph)		1,175												
Down Type	Off	On				On		On						
Down Distance	850	1,975				3,600		2,100						
Down Flow (pcph)	132	384				299		299						
Calculate Merge Influence Area Operations														
Effective v_P (pcph)						1,819				2,019				2,093
Up Ramp L_{EQ}														
Down Ramp L_{EQ}						1,773								
P_{FM} (Eqn 13-3)						0.593				0.592				0.592
P_{FM} (Eqn 13-4)		#VALUE!												
P_{FM} (Eqn 13-5)	0.589													
P_{FM}						0.593				1.000				1.000
v_{12} (pcph)						1,079				2,019				2,093
v_3 (pcph)						741								
v_{34} (pcph)														
v_{12a} (pcph)						1,079				2,019				2,093
v_{R12a} (pcph)						1,674				2,318				2,612
Merge Speed Index						0.31				0.32				0.35
Merge Area Speed						57.8				57.7				57.0
Outer Lanes Volume						741								
Outer Lanes Speed						64.1								
Segment Speed						59.6				57.7				57.0
Merge v/c ratio						0.36				0.50				0.57
Merge Density						14.8				20.3				22.5
Merge LOS						B				C				C



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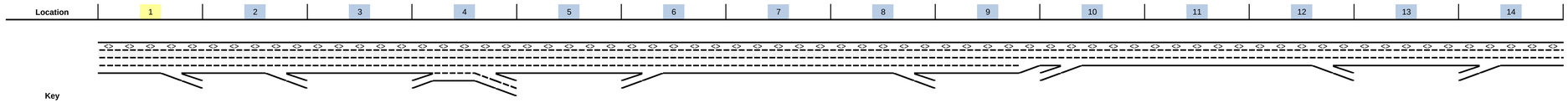
Calculate Diverge Influence Area Operations														
Effective v_P (pcph)	2,840	1,648						2,384				2,306		
Up Ramp L_{EQ}		11,877												
Down Ramp L_{EQ}	211	366						320						
P_{FD} (Eqn 13-9)	0.635	0.713						0.683				0.691		
P_{FD} (Eqn 13-10)														
P_{FD} (Eqn 13-11)	0.576													
P_{FD}	0.635	0.713						0.683				1.000		
v_{12} (pcph)	2,232	1,213						1,749				2,306		
v_3 (pcph)	608	436						635						
v_{34} (pcph)														
v_{12a} (pcph)	2,232	1,213						1,749				2,306		
Diverge Speed Index	0.40	0.57						0.33				0.32		
Diverge Area Speed	55.7	51.9						57.4				57.6		
Outer Lanes Volume	608	436						635						
Outer Lanes Speed	71.3	71.3						71.3						
Segment Speed	58.5	55.9						60.5				57.6		
Diverge v/c ratio	0.51	0.28						0.40				0.52		
Diverge Density	22.1	13.3						17.9				22.7		
Diverge LOS	C	B						B				C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments														
On to Off Volume (vph)				70										
PHF				0.87										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				3.5%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.983										
f_p				1.00										
On to Off Flow (pcph)				82										
Calculate On Ramp to Mainline Flow Rate for Weave Segments														
On to ML Volume (vph)				280										
PHF				0.92										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				2.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.990										
f_p				1.00										
On to ML Flow (pcph)				307										
Calculate Mainline to Off Ramp Flow Rate for Weave Segments														
ML to Off Volume (vph)				40										
PHF				0.94										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				5.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.976										
f_p				1.00										
ML to Off Flow (pcph)				44										



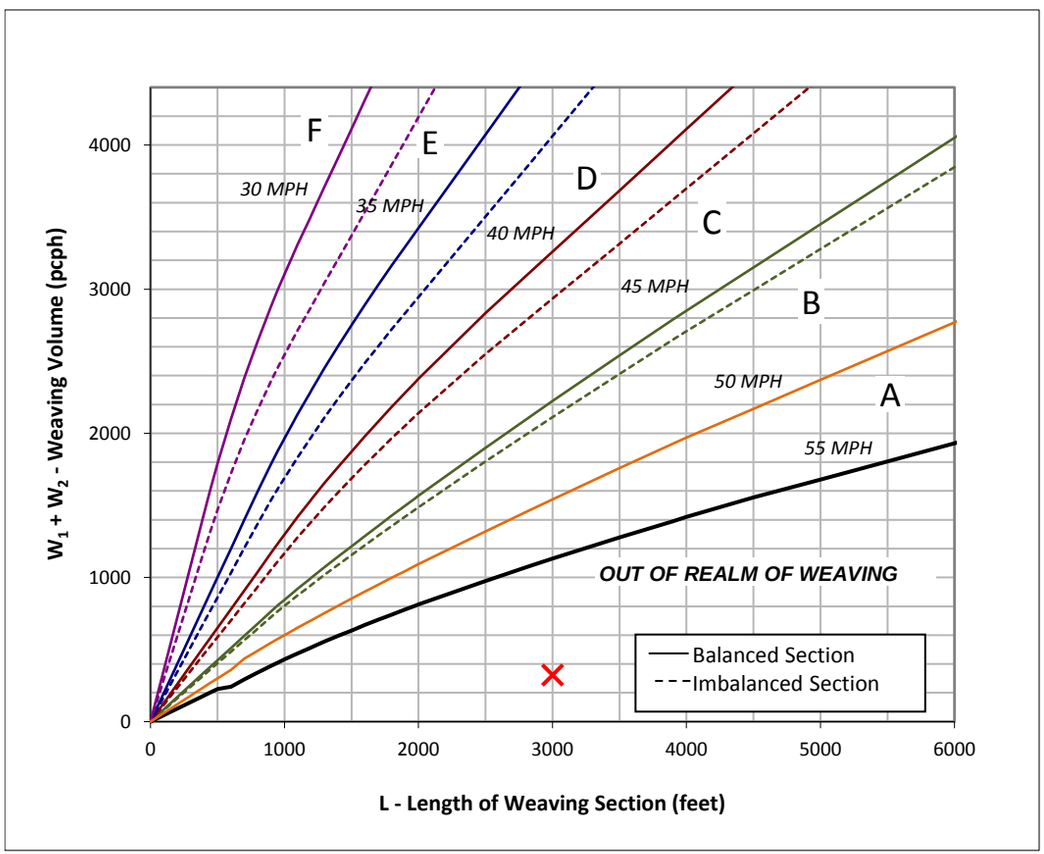
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments														
GP to GP Volume (vph)				1,252										
PHF				0.87										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				4.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.980										
f_p				1.00										
GP to GP Flow (pcph)				1,468										
Calculate Weave Segment Operations														
Weave Type				One-sided										
Weave Length				2,000										
Segment Lanes				3										
Weave Lanes				2										
Weave Flow (pcph)				351										
Non-Weave Flow				1,550										
Segment Flow				1,901										
Max Weave Length				4,380										
Length Check				OK										
Ideal Weave Capacity				2,168										
f_{HV}				0.982										
f_p				0.998										
Capacity Condition 1				6,376										
Capacity Condition 2				12,741										
Weave v/c ratio				0.29										
Interchange Density				2										
Lane Changes On to ML				1										
Lane Changes ML to Off				0										
Lane Changes On to Off				0										
Min Lane Change Rate				307										
Weave LC Rate				941										
Non-Weave LC Rate 1				825										
Non-Weave LC Rate 2				2,035										
Non-Weave LC Rate 3				-440										
Segment LC Rate				1,766										
Weave Intensity Factor				0.205										
Weave Speed				56.5										
Non-Weave Speed				59.7										
Segment Speed				59.1										
Weave Density				10.7										
Weave LOS				B										
Summarize Segment Operations														
Segment v/c ratio	0.51	0.28	0.21	0.29	0.25	0.36	0.38	0.40	0.29	0.50	0.49	0.52	0.44	0.57
Segment Density	22.1	13.3	7.8	10.7	9.1	14.8	13.9	17.9	10.6	20.3	17.7	22.7	15.9	22.5
Segment LOS	C	B	A	B	A	B	B	B	A	C	B	C	B	C
Over Capacity														

Leisch Method for Weaving Analysis

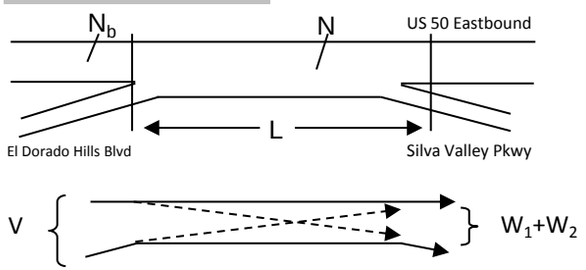
Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,000

Project Information	
Project	Central El Dorado Hills SP
Scenario	Near-Term No Project AM Peak Hour
Freeway	US 50 Eastbound
On-ramp	El Dorado Hills Blvd
Off-ramp	Silva Valley Pkwy

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	1,710	Volume (vph)*	280	Volume (vph)*	40
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	5%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	1,744	Volume (pcph)	283	Volume (pcph)	41



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)?	Y
If optional exit lane, then "Y". Otherwise "N".	
2. In the chart to the left, which two speed curves is the red "x" between?	**55 MPH** and -
If left of the 30 MPH curve, LOS is F. Select "-".	
If below the 55 MPH curve, out of the realm of weaving.	
3. Interpolated Weaving Speed (S_w, mph)	-
4. Weaving Intensity Factor (k)	-
5. Service Volume (SV, pcph)	
SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	-
6. Level of Service (LOS)	F

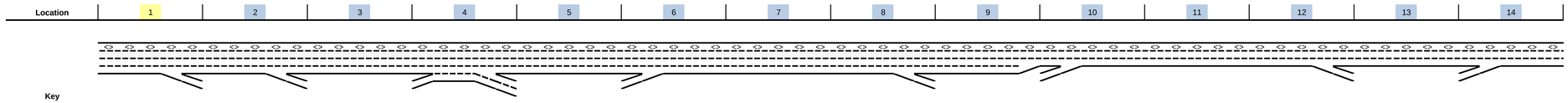
The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Project: Central El Dorado Hills Specific Plan **Alternative:** Near Term No Project Conditions
Freeway Corridor: Eastbound US 50 **Time Period:** PM Peak Hour

Data Entry Value
Calculated Value



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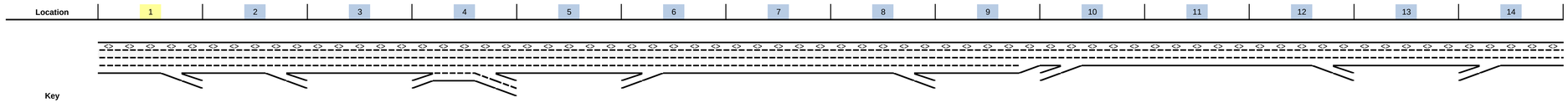
Define Freeway Segment														
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	850	1,975	3,000	1,575	1,500	2,925	1,500	2,100	1,500	3,300	1,500	1,350	1,500
Accel Length						550				500				500
Decel Length	150	150						150				150		
Mainline Volume	4,360	3,550	3,070	3,070	3,510	3,510	3,870	3,870	3,230	3,230	3,360	3,360	2,790	2,790
On Ramp Volume				830		360				130				360
Off Ramp Volume	810	480		390				640				570		
Express Lane Volume	480	391	338	338	386	386	426	426	355	355	370	370	307	307
EL On Ramp Volume														
EL Off Ramp Volume														
Calculate Flow Rate in General Purpose Lanes (GP)														
GP Volume (vph)	3,880	3,160	2,732	3,562	3,124	3,484	3,444	3,444	2,875	3,005	2,990	2,990	2,483	2,843
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	0.97	0.97
GP Lanes	3	3	3	4	3	3	3	3	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	6.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.952	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,020	3,274	2,831	3,691	3,237	3,610	3,728	3,569	2,978	3,113	3,098	3,098	2,573	2,946
GP Flow (pcphpl)	1,340	1,091	944	923	1,079	1,203	1,243	1,190	993	1,557	1,549	1,549	1,286	1,473
Calculate Speed in General Purpose Lanes														
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes														
v/c ratio	0.57	0.46	0.40	0.39	0.46	0.51	0.53	0.51	0.42	0.66	0.66	0.66	0.55	0.63
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	64.7	64.7	64.7	65.0	64.9
Density (pcphpl)	20.6	16.8	14.5	14.2	16.6	18.5	19.1	18.3	15.3	24.1	23.9	23.9	19.8	22.7
LOS	C	B	B	B	B	C	C	C	B	C	C	C	C	C
Calculate Operations for Entering GP Lanes														
GP_{IN} Vol (pcph)				2,831		3,134				2,955				2,550
GP_{IN} Cap (pcph)				7,050		7,050				4,700				4,700
GP_{IN} v/c ratio				0.40		0.44				0.63				0.54
Calculate Operations for Exiting GP Lanes														
GP_{OUT} Vol (pcph)	3,181	2,776		3,253				2,902	2,978			2,473		
GP_{OUT} Cap (pcph)	7,050	7,050		7,050				7,050	4,700			4,700		
GP_{OUT} v/c ratio	0.45	0.39		0.46				0.41	0.63			0.53		



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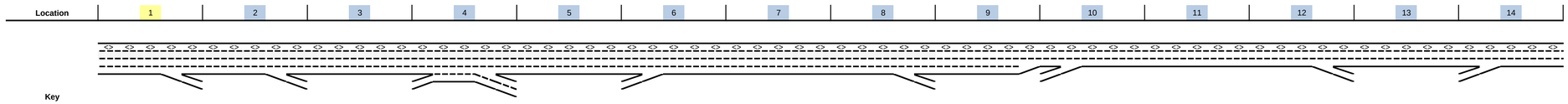
Calculate Flow Rate in Express Lanes (EL)														
EL Volume (vph)	480	391	338	338	386	386	426	426	355	355	370	370	307	307
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	538	438	379	379	433	433	516	478	399	399	415	415	344	344
EL Flow (pcphpl)	538	438	379	379	433	433	516	478	399	399	415	415	344	344
Calculate Speed in Express Lanes														
Lane Width (ft)														
Shoulder Width														
TRD														
f_{LW}														
f_{LC}														
Calc'd FFS														
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes														
EL_{IN} v/c ratio	0.31	0.25	0.22	0.22	0.25	0.25	0.29	0.27	0.23	0.23	0.24	0.24	0.20	0.20
Calculate On Ramp Flow Rate														
On Volume (vph)				830		360				130				360
PHF				0.97		0.76				0.83				0.92
Total Lanes				1		1				1				1
Terrain				Level		Level				Level				Level
Grade %				0.0%		0.0%				0.0%				0.0%
Grade Length (mi)				0.00		0.00				0.00				0.00
Truck & Bus %				1.0%		1.0%				2.0%				2.0%
RV %				0.0%		0.0%				0.0%				0.0%
E_T				1.5		1.5				1.5				1.5
E_R				1.2		1.2				1.2				1.2
f_{HV}				0.995		0.995				0.990				0.990
f_p				1.00		1.00				1.00				1.00
On Flow (pcph)				860		476				158				395
On Flow (pcphpl)				860		476				158				395
Calculate On Ramp Roadway Operations														
On Ramp Type				Right		Right				Right				Right
On Ramp Speed (mph)				45		25				45				25
On Ramp Cap (pcph)				2,100		1,900				2,100				1,900
On Ramp v/c ratio				0.41		0.25				0.08				0.21



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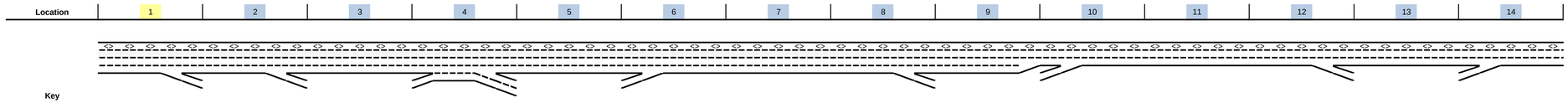
Calculate Off Ramp Flow Rate														
Off Volume (vph)	810	480		390				640				570		
PHF	0.97	0.97		0.89				0.97				0.92		
Total Lanes	1	1		2				1				1		
Terrain	Level	Level		Level				Level				Level		
Grade %	0.0%	0.0%		0.0%				0.0%				0.0%		
Grade Length (mi)	0.00	0.00		0.00				0.00				0.00		
Truck & Bus %	1.0%	1.0%		0.0%				2.0%				2.0%		
RV %	0.0%	0.0%		0.0%				0.0%				0.0%		
E_T	1.5	1.5		1.5				1.5				1.5		
E_R	1.2	1.2		1.2				1.2				1.2		
f_{HV}	0.995	0.995		1.000				0.990				0.990		
f_p	1.00	1.00		1.00				1.00				1.00		
Off Flow (pcph)	839	497		438				666				626		
Off Flow (pcphpl)	839	497		219				666				626		
Calculate Off Ramp Roadway Operations														
Off Ramp Type	Right	Right		Right				Right				Right		
Off Ramp Speed	45	25		45				45				45		
Off Ramp Cap (pcph)	2,100	1,900		4,200				2,100				2,100		
Off Ramp v/c ratio	0.40	0.26		0.10				0.32				0.30		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps														
Up Type		Off				No		No						
Up Distance		2,350												
Up Flow (pcph)		839												
Down Type	Off	On				On		On						
Down Distance	850	1,975				3,600		2,100						
Down Flow (pcph)	497	860				158		158						
Calculate Merge Influence Area Operations														
Effective v_P (pcph)						3,134				2,955				2,550
Up Ramp L_{EQ}														
Down Ramp L_{EQ}						939								
P_{FM} (Eqn 13-3)						0.593				0.592				0.592
P_{FM} (Eqn 13-4)		#VALUE!												
P_{FM} (Eqn 13-5)	0.702													
P_{FM}						0.593				1.000				1.000
v_{12} (pcph)						1,858				2,955				2,550
v_3 (pcph)						1,276								
v_{34} (pcph)														
v_{12a} (pcph)						1,858				2,955				2,550
v_{R12a} (pcph)						2,334				3,113				2,946
Merge Speed Index						0.33				0.36				0.37
Merge Area Speed						57.3				56.6				56.5
Outer Lanes Volume						1,276								
Outer Lanes Speed						62.2								
Segment Speed						59.0				56.6				56.5
Merge v/c ratio						0.51				0.68				0.64
Merge Density						20.0				26.5				25.1
Merge LOS						C				C				C

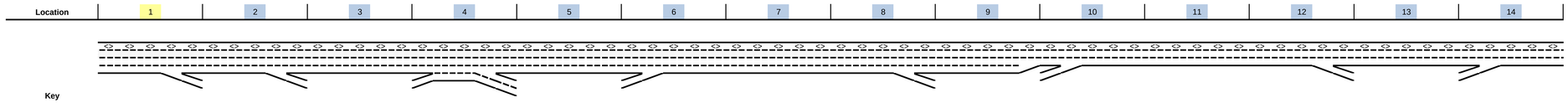


Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Diverge Influence Area Operations														
Effective v_P (pcph)	4,020	3,274						3,569				3,098		
Up Ramp L_{EQ}		7,735												
Down Ramp L_{EQ}	699	998						200						
P_{FD} (Eqn 13-9)	0.621	0.655						0.640				0.654		
P_{FD} (Eqn 13-10)														
P_{FD} (Eqn 13-11)	0.605													
P_{FD}	0.621	0.655						0.640				1.000		
v_{12} (pcph)	2,814	2,317						2,524				3,098		
v_3 (pcph)	1,206	957						1,044						
v_{34} (pcph)														
v_{12a} (pcph)	2,814	2,317						2,524				3,098		
Diverge Speed Index	0.37	0.60						0.36				0.35		
Diverge Area Speed	56.4	51.1						56.8				56.9		
Outer Lanes Volume	1,206	957						1,044						
Outer Lanes Speed	70.5	71.3						71.1						
Segment Speed	60.0	55.7						60.3				56.9		
Diverge v/c ratio	0.64	0.53						0.57				0.70		
Diverge Density	27.1	22.8						24.6				29.5		
Diverge LOS	C	C						C				D		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments														
On to Off Volume (vph)				155										
PHF				0.97										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				0.5%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.998										
f_P				1.00										
On to Off Flow (pcph)				160										
Calculate On Ramp to Mainline Flow Rate for Weave Segments														
On to ML Volume (vph)				675										
PHF				0.97										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				1.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.995										
f_P				1.00										
On to ML Flow (pcph)				699										
Calculate Mainline to Off Ramp Flow Rate for Weave Segments														
ML to Off Volume (vph)				235										
PHF				0.89										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				0.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				1.000										
f_P				1.00										
ML to Off Flow (pcph)				264										



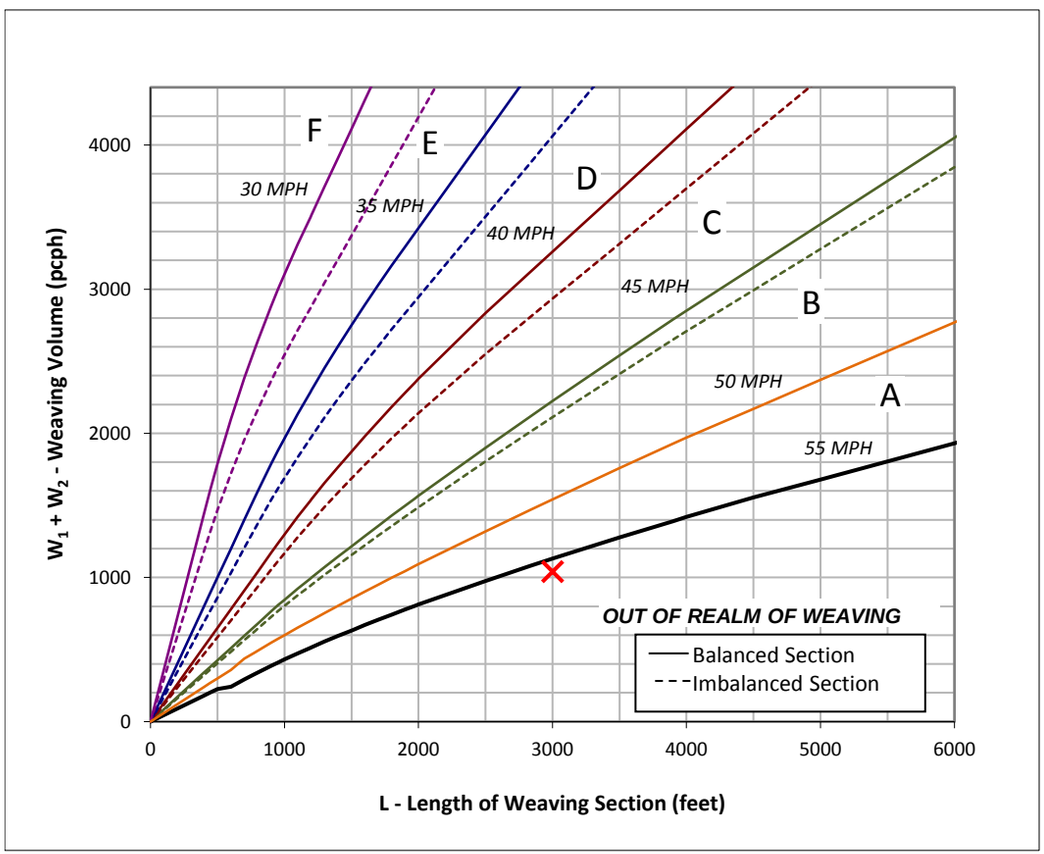
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments														
GP to GP Volume (vph)				2,498										
PHF				0.97										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				1.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.995										
f_p				1.00										
GP to GP Flow (pcph)				2,588										
Calculate Weave Segment Operations														
Weave Type				One-sided										
Weave Length				2,000										
Segment Lanes				3										
Weave Lanes				2										
Weave Flow (pcph)				963										
Non-Weave Flow				2,748										
Segment Flow				3,711										
Max Weave Length				5,153										
Length Check				OK										
Ideal Weave Capacity				2,109										
f_{HV}				0.995										
f_p				0.999										
Capacity Condition 1				6,292										
Capacity Condition 2				9,199										
Weave v/c ratio				0.59										
Interchange Density				2										
Lane Changes On to ML				1										
Lane Changes ML to Off				0										
Lane Changes On to Off				0										
Min Lane Change Rate				699										
Weave LC Rate				1,333										
Non-Weave LC Rate 1				1,072										
Non-Weave LC Rate 2				2,302										
Non-Weave LC Rate 3				692										
Segment LC Rate				2,405										
Weave Intensity Factor				0.261										
Weave Speed				54.6										
Non-Weave Speed				54.0										
Segment Speed				54.2										
Weave Density				22.8										
Weave LOS				C										
Summarize Segment Operations														
Segment v/c ratio	0.64	0.53	0.40	0.59	0.46	0.51	0.53	0.57	0.42	0.68	0.66	0.70	0.55	0.64
Segment Density	27.1	22.8	14.5	22.8	16.6	20.0	19.1	24.6	15.3	26.5	23.9	29.5	19.8	25.1
Segment LOS	C	C	B	C	B	C	C	C	B	C	C	D	C	C
Over Capacity														

Leisch Method for Weaving Analysis

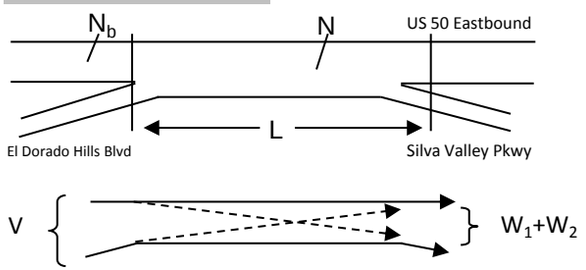
Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,000

Project Information	
Project	Central El Dorado Hills SP
Scenario	Near Term No Project PM Peak Hour
Freeway	US 50 Eastbound
On-ramp	El Dorado Hills Blvd
Off-ramp	Silva Valley Pkwy

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,900	Volume (vph)*	739	Volume (vph)*	299
Truck Percentage	1%	Truck Percentage	1%	Truck Percentage	0%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,920	Volume (pcph)	742	Volume (pcph)	299



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)?	Y
If optional exit lane, then "Y". Otherwise "N".	
2. In the chart to the left, which two speed curves is the red "x" between?	**55 MPH** and -
If left of the 30 MPH curve, LOS is F. Select "-".	
If below the 55 MPH curve, out of the realm of weaving.	
3. Interpolated Weaving Speed (S_w, mph)	-
4. Weaving Intensity Factor (k)	-
5. Service Volume (SV, pcph)	
SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	-
6. Level of Service (LOS)	F

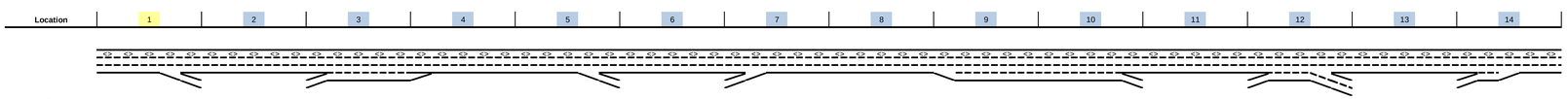
The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Project: Central El Dorado Hills Specific Plan **Alternative:** Near Term No Project Conditions
Freeway Corridor: Westbound US 50 **Time Period:** AM Peak Hour

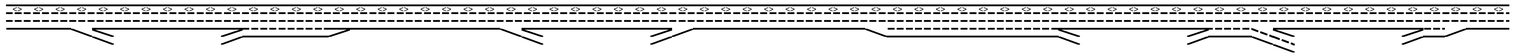
Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Define Freeway Segment														
Type	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Basic	Diverge	Basic	Weave	Basic	Merge
Length (ft)	1,500	1,250	1,500	4,900	1,500	2,350	1,500	1,700	500	1,500	2,550	2,800	2,300	1,500
Accel Length			1,500				375							880
Decel Length	150				150					1,500				
Mainline Volume	3,090	2,620	2,620	3,320	3,320	3,140	3,140	3,920	3,920	3,920	3,320	3,320	3,280	3,280
On Ramp Volume			700				780					570		1,200
Off Ramp Volume	470				180					600		610		
Express Lane Volume	340	288	288	365	365	345	345	431	431	431	365	365	361	361
EL On Ramp Volume														
EL Off Ramp Volume														
Calculate Flow Rate in General Purpose Lanes (GP)														
GP Volume (vph)	2,750	2,332	3,032	2,955	2,955	2,795	3,575	3,489	3,489	3,489	2,955	3,525	2,919	4,119
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
GP Lanes	2	2	3	2	2	2	2	2	3	3	2	3	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,940	2,493	3,241	3,159	3,159	2,988	3,822	3,730	3,730	3,730	3,159	3,769	3,121	4,404
GP Flow (pcphpl)	1,470	1,247	1,080	1,580	1,580	1,494	1,911	1,865	1,243	1,243	1,580	1,256	1,561	2,202
Calculate Speed in General Purpose Lanes														
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes														
v/c ratio	0.63	0.53	0.46	0.67	0.67	0.64	0.81	0.79	0.53	0.53	0.67	0.53	0.66	0.94
Speed (mph)	64.9	65.0	65.0	64.5	64.5	64.9	61.3	61.9	65.0	65.0	64.5	65.0	64.6	55.9
Density (pcphpl)	22.6	19.2	16.6	24.5	24.5	23.0	31.2	30.1	19.1	19.1	24.5	19.3	24.1	39.4
LOS	C	C	B	C	C	C	D	D	C	C	C	C	C	E
Calculate Operations for Entering GP Lanes														
GP_{IN} Vol (pcph)			2,505				2,937		3,730			3,156		3,087
GP_{IN} Cap (pcph)			4,700				4,700		4,700			4,700		4,700
GP_{IN} v/c ratio			0.53				0.62		0.79			0.67		0.66
Calculate Operations for Exiting GP Lanes														
GP_{OUT} Vol (pcph)	2,221				2,861					3,033		3,099		
GP_{OUT} Cap (pcph)	4,700				4,700					4,700		4,700		
GP_{OUT} v/c ratio	0.47				0.61					0.65		0.66		

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14



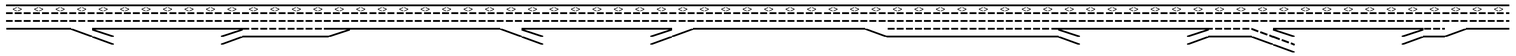
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Flow Rate in Express Lanes (EL)														
EL Volume (vph)	340	288	288	365	365	345	345	431	431	431	365	365	361	361
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	0.89	0.89
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	386	327	327	414	414	392	392	489	489	489	414	414	409	409
EL Flow (pcphpl)	386	327	327	414	414	392	392	489	489	489	414	414	409	409
Calculate Speed in Express Lanes														
Lane Width (ft)														
Shoulder Width														
TRD														
f_{LW}														
f_{LC}														
Calc'd FFS														
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes														
EL_{IN} v/c ratio	0.22	0.19	0.19	0.24	0.24	0.22	0.22	0.28	0.28	0.28	0.24	0.24	0.23	0.23
Calculate On Ramp Flow Rate														
On Volume (vph)			700				780					570		1,200
PHF			0.96				0.89					0.93		0.92
Total Lanes			1				1					1		1
Terrain			Level				Level					Level		Level
Grade %			0.0%				0.0%					0.0%		0.0%
Grade Length (mi)			0.00				0.00					0.00		0.00
Truck & Bus %			2.0%				2.0%					0.0%		2.0%
RV %			0.0%				0.0%					0.0%		0.0%
E_T			1.5				1.5					1.5		1.5
E_R			1.2				1.2					1.2		1.2
f_{HV}			0.990				0.990					1.000		0.990
f_p			1.00				1.00					1.00		1.00
On Flow (pcph)			736				885					613		1,317
On Flow (pcphpl)			736				885					613		1,317
Calculate On Ramp Roadway Operations														
On Ramp Type			Right				Right					Right		Right
On Ramp Speed (mph)			25				45					45		45
On Ramp Cap (pcph)			1,900				2,100					2,100		2,100
On Ramp v/c ratio			0.39				0.42					0.29		0.63

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14



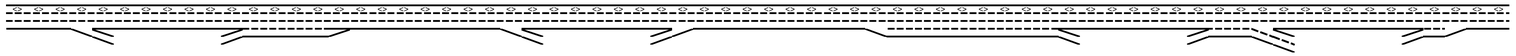
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Off Ramp Flow Rate														
Off Volume (vph)	470				180					600		610		
PHF	0.66				0.61					0.87		0.92		
Total Lanes	1				1					1		2		
Terrain	Level				Level					Level		Level		
Grade %	0.0%				0.0%					0.0%		0.0%		
Grade Length (mi)	0.00				0.00					0.00		0.00		
Truck & Bus %	2.0%				2.0%					2.0%		2.0%		
RV %	0.0%				0.0%					0.0%		0.0%		
E_T	1.5				1.5					1.5		1.5		
E_R	1.2				1.2					1.2		1.2		
f_{HV}	0.990				0.990					0.990		0.990		
f_p	1.00				1.00					1.00		1.00		
Off Flow (pcph)	719				298					697		670		
Off Flow (pcphpl)	719				298					697		335		
Calculate Off Ramp Roadway Operations														
Off Ramp Type	Right				Right					Right		Right		
Off Ramp Speed	45				45					45		25		
Off Ramp Cap (pcph)	2,100				2,100					2,100		3,800		
Off Ramp v/c ratio	0.34				0.14					0.33		0.18		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps														
Up Type			Off							On		Off		
Up Distance			1,250							5,200		2,550		
Up Flow (pcph)			719							885		697		
Down Type			Off							On		No		
Down Distance			7,900							1,500				
Down Flow (pcph)			298							1,317				
Calculate Merge Influence Area Operations														
Effective v_p (pcph)			2,505				2,937							3,087
Up Ramp L_{EQ}			265											
Down Ramp L_{EQ}			1,103											
P_{FM} (Eqn 13-3)			0.620				0.588							0.602
P_{FM} (Eqn 13-4)			0.681									#VALUE!		
P_{FM} (Eqn 13-5)			0.559											
P_{FM}			1.000				1.000							1.000
v_{12} (pcph)			2,505				2,937							3,087
v_3 (pcph)														
v_{34} (pcph)														
v_{12a} (pcph)			2,505				2,937							3,087
v_{R12a} (pcph)			3,241				3,822							4,404
Merge Speed Index			0.35				0.47							0.56
Merge Area Speed			57.0				54.3							52.1
Outer Lanes Volume														
Outer Lanes Speed														
Segment Speed			57.0				54.3							52.1
Merge v/c ratio			0.70				0.83							0.96
Merge Density			21.0				32.5							33.7
Merge LOS			C				D							D

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14



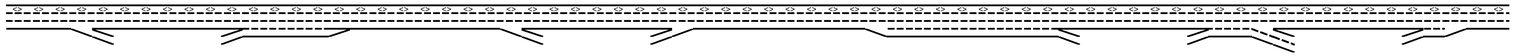
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Diverge Influence Area Operations														
Effective v_P (pcph)	2,940				3,159					3,730				
Up Ramp L_{EQ}										8,523				
Down Ramp L_{EQ}										1,703				
P_{FD} (Eqn 13-9)	0.653				0.667					0.635				
P_{FD} (Eqn 13-10)										0.674				
P_{FD} (Eqn 13-11)			#VALUE!											
P_{FD}	1.000				1.000					0.674				
v_{12} (pcph)	2,940				3,159					2,742				
v_3 (pcph)										988				
v_{3A} (pcph)														
v_{12a} (pcph)	2,940				3,159					2,742				
Diverge Speed Index	0.36				0.32					0.36				
Diverge Area Speed	56.7				57.5					56.7				
Outer Lanes Volume										988				
Outer Lanes Speed										71.3				
Segment Speed	56.7				57.5					60.0				
Diverge v/c ratio	0.67				0.72					0.62				
Diverge Density	28.2				30.1					14.3				
Diverge LOS	D				D					B				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments														
On to Off Volume (vph)												107		
PHF												0.94		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												1.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.995		
f_P												1.00		
On to Off Flow (pcph)												114		
Calculate On Ramp to Mainline Flow Rate for Weave Segments														
On to ML Volume (vph)												463		
PHF												0.93		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												0.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												1.000		
f_P												1.00		
On to ML Flow (pcph)												498		
Calculate Mainline to Off Ramp Flow Rate for Weave Segments														
ML to Off Volume (vph)												503		
PHF												0.92		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												2.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.990		
f_P												1.00		
ML to Off Flow (pcph)												553		
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments														
GP to GP Volume (vph)												2,451		
PHF												0.94		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												1.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.995		
f_P												1.00		
GP to GP Flow (pcph)												2,621		

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14



Key

<> Express Lane (HOV)

No Trucks

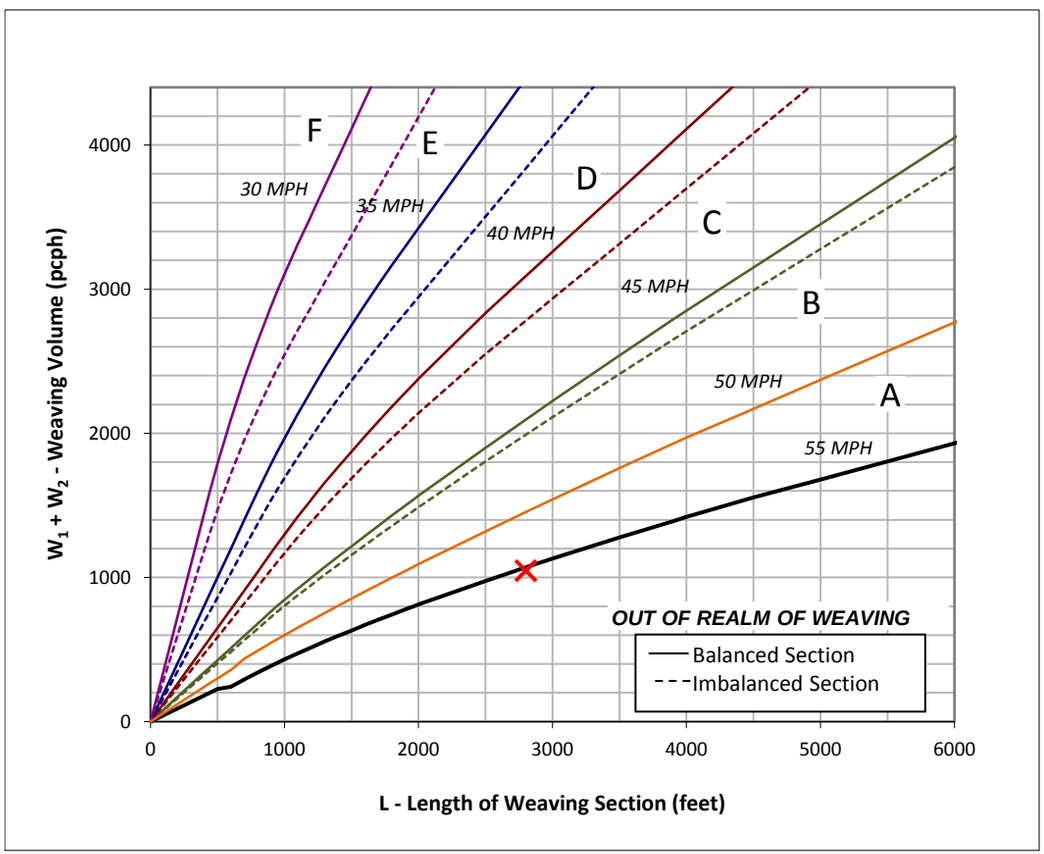
Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Weave Segment Operations														
Weave Type												One-sided		
Weave Length												1,800		
Segment Lanes												2		
Weave Lanes												2		
Weave Flow (pcph)												1,051		
Non-Weave Flow												2,735		
Segment Flow												3,786		
Max Weave Length												5,345		
Length Check												OK		
Ideal Weave Capacity												2,079		
f_{HV}												0.995		
f_{P}												1.000		
Capacity Condition 1												4,137		
Capacity Condition 2												8,602		
Weave v/c ratio												0.91		
Interchange Density												1		
Lane Changes On to ML												1		
Lane Changes ML to Off												0		
Lane Changes On to Off												0		
Min Lane Change Rate												498		
Weave LC Rate												1,153		
Non-Weave LC Rate 1												1,154		
Non-Weave LC Rate 2												2,299		
Non-Weave LC Rate 3												-269		
Segment LC Rate												2,307		
Weave Intensity Factor												0.275		
Weave Speed												54.2		
Non-Weave Speed												52.3		
Segment Speed												52.8		
Weave Density												35.8		
Weave LOS												E		
Summarize Segment Operations														
Segment v/c ratio	0.67	0.53	0.70	0.67	0.72	0.64	0.83	0.79	0.53	0.62	0.67	0.91	0.66	0.96
Segment Density	28.2	19.2	21.0	24.5	30.1	23.0	32.5	30.1	19.1	14.3	24.5	35.8	24.1	33.7
Segment LOS	D	C	C	C	D	C	D	D	C	B	C	E	C	D
Over Capacity														

Leisch Method for Weaving Analysis

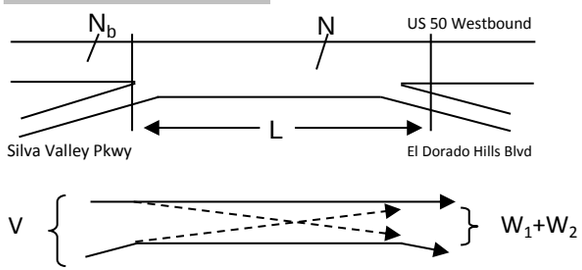
Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	2
Length of Weaving Section (feet)	L	2,800

Project Information	
Project	Central El Dorado Hills SP
Scenario	Near Tern No Project AM Peak Hour
Freeway	US 50 Westbound
On-ramp	Silva Valley Pkwy
Off-ramp	El Dorado Hills Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,890	Volume (vph)*	502	Volume (vph)*	542
Truck Percentage	2%	Truck Percentage	0%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,929	Volume (pcph)	502	Volume (pcph)	547



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? *If optional exit lane, then "Y". Otherwise "N".*	Y
2. In the chart to the left, which two speed curves is the red "x" between?	**55 MPH** and -
If left of the 30 MPH curve, LOS is F. Select "-".	
If below the 55 MPH curve, out of the realm of weaving.	
3. Interpolated Weaving Speed (S_w, mph)	-
4. Weaving Intensity Factor (k)	-
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	-
6. Level of Service (LOS)	F

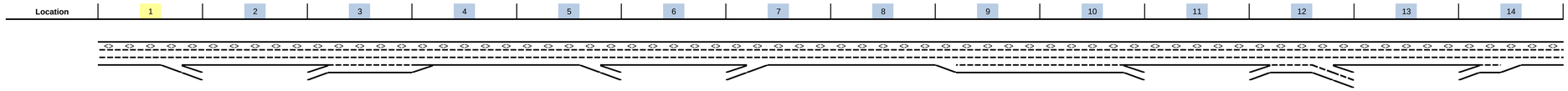
The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Project: Central El Dorado Hills Specific Plan **Alternative:** Near Term No Project Conditions
Freeway Corridor: Westbound US 50 **Time Period:** PM Peak Hour

Data Entry Value
Calculated Value



Key
<> Express Lane (HOV)
No Trucks

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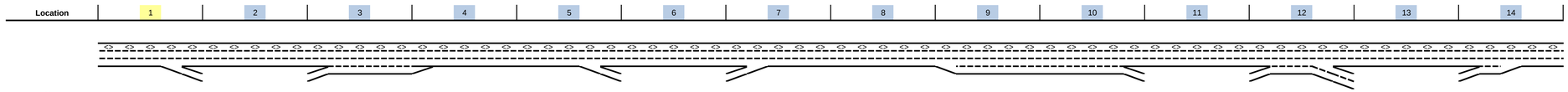
Define Freeway Segment														
Type	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Basic	Diverge	Basic	Weave	Basic	Merge
Length (ft)	1,500	1,250	1,500	4,900	1,500	2,350	1,500	1,700	500	1,500	2,550	2,800	2,300	1,500
Accel Length			1,500				375							880
Decel Length	150				150					1,500				
Mainline Volume	3,120	2,610	2,610	3,040	3,040	2,810	2,810	3,150	3,150	3,150	2,290	2,290	2,170	2,170
On Ramp Volume			430				340					210		1,030
Off Ramp Volume	510				230					860		330		
Express Lane Volume	250	209	209	243	243	225	225	252	252	252	183	183	174	174
EL On Ramp Volume														
EL Off Ramp Volume														
Calculate Flow Rate in General Purpose Lanes (GP)														
GP Volume (vph)	2,870	2,401	2,831	2,797	2,797	2,585	2,925	2,898	2,898	2,898	2,107	2,317	1,996	3,026
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	0.96	0.96
GP Lanes	2	2	3	2	2	2	2	2	3	3	2	3	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	3,020	2,526	2,979	2,942	2,942	2,720	3,078	3,049	3,049	3,049	2,217	2,437	2,100	3,184
GP Flow (pcphpl)	1,510	1,263	993	1,471	1,471	1,360	1,539	1,524	1,016	1,016	1,108	812	1,050	1,592
Calculate Speed in General Purpose Lanes														
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes														
v/c ratio	0.64	0.54	0.42	0.63	0.63	0.58	0.65	0.65	0.43	0.43	0.47	0.35	0.45	0.68
Speed (mph)	64.8	65.0	65.0	64.9	64.9	65.0	64.7	64.8	65.0	65.0	65.0	65.0	65.0	64.5
Density (pcphpl)	23.3	19.4	15.3	22.7	22.7	20.9	23.8	23.5	15.6	15.6	17.1	12.5	16.2	24.7
LOS	C	C	B	C	C	C	C	C	B	B	B	B	B	C
Calculate Operations for Entering GP Lanes														
GP_{IN} Vol (pcph)			2,496				2,720		3,049			2,204		2,117
GP_{IN} Cap (pcph)			4,700				4,700		4,700			4,700		4,700
GP_{IN} v/c ratio			0.53				0.58		0.65			0.47		0.45
Calculate Operations for Exiting GP Lanes														
GP_{OUT} Vol (pcph)	2,441				2,641					2,093		2,096		
GP_{OUT} Cap (pcph)	4,700				4,700					4,700		4,700		
GP_{OUT} v/c ratio	0.52				0.56					0.45		0.45		



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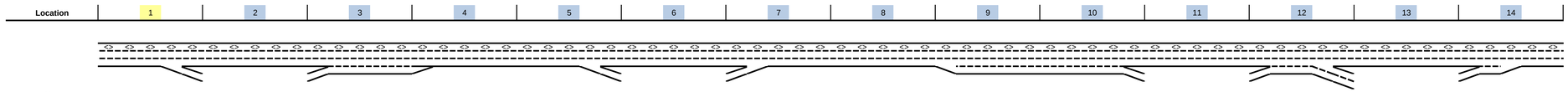
Calculate Flow Rate in Express Lanes (EL)														
EL Volume (vph)	250	209	209	243	243	225	225	252	252	252	183	183	174	174
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	280	234	234	273	273	252	252	283	283	283	206	206	195	195
EL Flow (pcphpl)	280	234	234	273	273	252	252	283	283	283	206	206	195	195
Calculate Speed in Express Lanes														
Lane Width (ft)														
Shoulder Width														
TRD														
f_{LW}														
f_{LC}														
Calc'd FFS														
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes														
EL_{IN} v/c ratio	0.16	0.13	0.13	0.16	0.16	0.14	0.14	0.16	0.16	0.16	0.12	0.12	0.11	0.11
Calculate On Ramp Flow Rate														
On Volume (vph)			430				340					210		1,030
PHF			0.9				0.96					0.9		0.97
Total Lanes			1				1					1		1
Terrain			Level				Level					Level		Level
Grade %			0.0%				0.0%					0.0%		0.0%
Grade Length (mi)			0.00				0.00					0.00		0.00
Truck & Bus %			2.0%				2.0%					0.0%		1.0%
RV %			0.0%				0.0%					0.0%		0.0%
E_T			1.5				1.5					1.5		1.5
E_R			1.2				1.2					1.2		1.2
f_{HV}			0.990				0.990					1.000		0.995
f_p			1.00				1.00					1.00		1.00
On Flow (pcph)			483				358					233		1,067
On Flow (pcphpl)			483				358					233		1,067
Calculate On Ramp Roadway Operations														
On Ramp Type			Right				Right					Right		Right
On Ramp Speed (mph)			25				45					45		45
On Ramp Cap (pcph)			1,900				2,100					2,100		2,100
On Ramp v/c ratio			0.25				0.17					0.11		0.51



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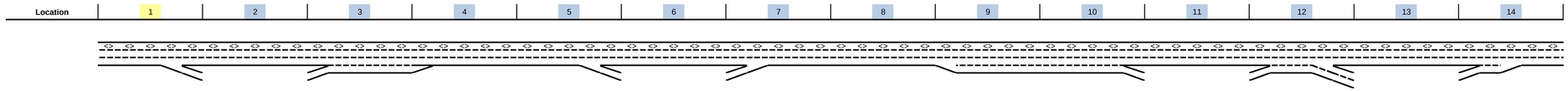
Calculate Off Ramp Flow Rate														
Off Volume (vph)	510				230					860		330		
PHF	0.89				0.77					0.9		0.97		
Total Lanes	1				1					1		2		
Terrain	Level				Level					Level		Level		
Grade %	0.0%				0.0%					0.0%		0.0%		
Grade Length (mi)	0.00				0.00					0.00		0.00		
Truck & Bus %	2.0%				2.0%					0.0%		1.0%		
RV %	0.0%				0.0%					0.0%		0.0%		
E_T	1.5				1.5					1.5		1.5		
E_R	1.2				1.2					1.2		1.2		
f_{HV}	0.990				0.990					1.000		0.995		
f_p	1.00				1.00					1.00		1.00		
Off Flow (pcph)	579				302					956		342		
Off Flow (pcphpl)	579				302					956		171		
Calculate Off Ramp Roadway Operations														
Off Ramp Type	Right				Right					Right		Right		
Off Ramp Speed	45				45					45		25		
Off Ramp Cap (pcph)	2,100				2,100					2,100		3,800		
Off Ramp v/c ratio	0.28				0.14					0.46		0.09		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps														
Up Type			Off							On		Off		
Up Distance			1,250							5,200		2,550		
Up Flow (pcph)			579							358		956		
Down Type			Off							On		No		
Down Distance			7,900							1,500				
Down Flow (pcph)			302							1,067				
Calculate Merge Influence Area Operations														
Effective v_P (pcph)			2,496				2,720							2,117
Up Ramp L_{EQ}			208											
Down Ramp L_{EQ}			1,117											
P_{FM} (Eqn 13-3)			0.620				0.588							0.602
P_{FM} (Eqn 13-4)			0.685									#VALUE!		
P_{FM} (Eqn 13-5)			0.559											
P_{FM}			1.000				1.000							1.000
v_{12} (pcph)			2,496				2,720							2,117
v_3 (pcph)														
v_{34} (pcph)														
v_{12a} (pcph)			2,496				2,720							2,117
v_{R12a} (pcph)			2,979				3,078							3,184
Merge Speed Index			0.32				0.37							0.34
Merge Area Speed			57.6				56.4							57.3
Outer Lanes Volume														
Outer Lanes Speed														
Segment Speed			57.6				56.4							57.3
Merge v/c ratio			0.65				0.67							0.69
Merge Density			19.1				27.0							24.3
Merge LOS			B				C							C

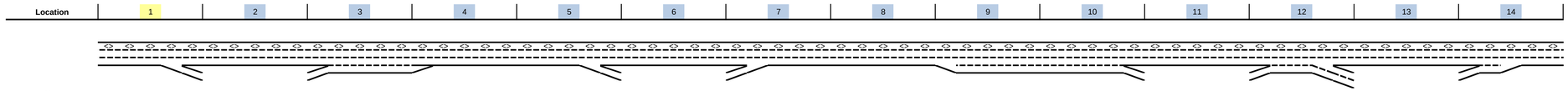


Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Diverge Influence Area Operations														
Effective v_P (pcph)	3,020				2,942					3,049				
Up Ramp L_{EQ}										5,222				
Down Ramp L_{EQ}										1,525				
P_{FD} (Eqn 13-9)	0.658				0.673					0.640				
P_{FD} (Eqn 13-10)										0.640				
P_{FD} (Eqn 13-11)			#VALUE!											
P_{FD}	1.000				1.000					0.640				
v_{12} (pcph)	3,020				2,942					2,295				
v_3 (pcph)										754				
v_{34} (pcph)														
v_{12a} (pcph)	3,020				2,942					2,295				
Diverge Speed Index	0.35				0.33					0.38				
Diverge Area Speed	56.9				57.5					56.2				
Outer Lanes Volume										754				
Outer Lanes Speed										71.3				
Segment Speed	56.9				57.5					59.3				
Diverge v/c ratio	0.69				0.67					0.52				
Diverge Density	28.9				28.2					10.5				
Diverge LOS	D				D					B				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments														
On to Off Volume (vph)												88		
PHF												0.96		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												0.5%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.998		
f_p												1.00		
On to Off Flow (pcph)												91		
Calculate On Ramp to Mainline Flow Rate for Weave Segments														
On to ML Volume (vph)												122		
PHF												0.9		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												0.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												1.000		
f_p												1.00		
On to ML Flow (pcph)												136		
Calculate Mainline to Off Ramp Flow Rate for Weave Segments														
ML to Off Volume (vph)												242		
PHF												0.97		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												1.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.995		
f_p												1.00		
ML to Off Flow (pcph)												251		



Key

<> Express Lane (HOV)

No Trucks

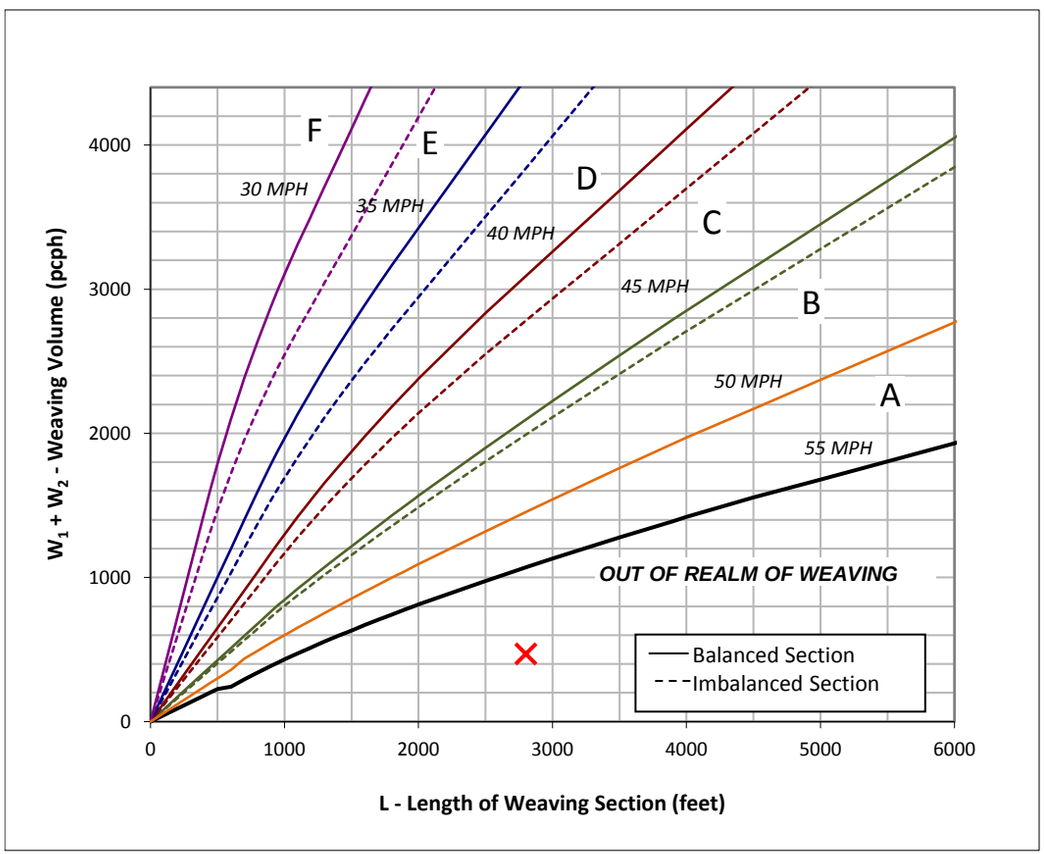
Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments														
GP to GP Volume (vph)												1,864		
PHF												0.96		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												2.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.990		
f_p												1.00		
GP to GP Flow (pcph)												1,961		
Calculate Weave Segment Operations														
Weave Type												One-sided		
Weave Length												1,800		
Segment Lanes												2		
Weave Lanes												2		
Weave Flow (pcph)												387		
Non-Weave Flow												2,053		
Segment Flow												2,440		
Max Weave Length												4,118		
Length Check												OK		
Ideal Weave Capacity												2,173		
f_{HV}												0.991		
f_p												1.000		
Capacity Condition 1												4,308		
Capacity Condition 2												14,995		
Weave v/c ratio												0.56		
Interchange Density												2		
Lane Changes On to ML												1		
Lane Changes ML to Off												0		
Lane Changes On to Off												0		
Min Lane Change Rate												136		
Weave LC Rate												773		
Non-Weave LC Rate 1												1,013		
Non-Weave LC Rate 2												2,147		
Non-Weave LC Rate 3												35		
Segment LC Rate												1,786		
Weave Intensity Factor												0.225		
Weave Speed												55.8		
Non-Weave Speed												58.2		
Segment Speed												57.8		
Weave Density												21.1		
Weave LOS												C		
Summarize Segment Operations														
Segment v/c ratio	0.69	0.54	0.65	0.63	0.67	0.58	0.67	0.65	0.43	0.52	0.47	0.56	0.45	0.69
Segment Density	28.9	19.4	19.1	22.7	28.2	20.9	27.0	23.5	15.6	10.5	17.1	21.1	16.2	24.3
Segment LOS	D	C	B	C	D	C	C	C	B	B	B	C	B	C
Over Capacity														

Leisch Method for Weaving Analysis

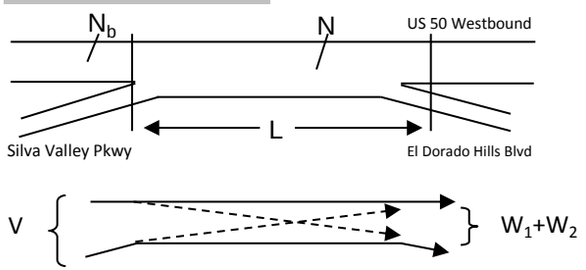
Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	2
Length of Weaving Section (feet)	L	2,800

Project Information	
Project	Central El Dorado Hills SP
Scenario	Existing PM Peak Hour
Freeway	US 50 Westbound
On-ramp	Silva Valley Pkwy
Off-ramp	El Dorado Hills Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	2,500	Volume (vph)*	174	Volume (vph)*	294
Truck Percentage	2%	Truck Percentage	0%	Truck Percentage	1%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	2,525	Volume (pcph)	174	Volume (pcph)	296



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   If optional exit lane, then "Y". Otherwise "N".
2. In the chart to the left, which two speed curves is the red "x" between?
   55 MPH and **-**
   If left of the 30 MPH curve, LOS is F. Select "-".
   If below the 55 MPH curve, out of the realm of weaving.
3. Interpolated Weaving Speed (S_w, mph) **-**
4. Weaving Intensity Factor (k) **-**
5. Service Volume (SV, pcph)
   $SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ **-**
6. Level of Service (LOS) **F**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	220	220	30	670	80	250	190	10	100	290	350
Future Volume (veh/h)	150	220	220	30	670	80	250	190	10	100	290	350
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		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	156	229	63	33	744	17	298	226	8	118	341	257
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.90	0.90	0.90	0.84	0.84	0.84	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	1019	454	41	881	393	356	1611	57	145	811	688
Arrive On Green	0.06	0.29	0.29	0.02	0.25	0.25	0.10	0.46	0.44	0.08	0.44	0.44
Sat Flow, veh/h	3442	3539	1578	1774	3539	1580	3442	3487	123	1774	1863	1581
Grp Volume(v), veh/h	156	229	63	33	744	17	298	114	120	118	341	257
Grp Sat Flow(s),veh/h/ln	1721	1770	1578	1774	1770	1580	1721	1770	1841	1774	1863	1581
Q Serve(g_s), s	4.9	5.4	3.3	2.0	22.0	0.9	9.3	4.1	4.1	7.2	13.9	12.1
Cycle Q Clear(g_c), s	4.9	5.4	3.3	2.0	22.0	0.9	9.3	4.1	4.1	7.2	13.9	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	214	1019	454	41	881	393	356	817	850	145	811	688
V/C Ratio(X)	0.73	0.22	0.14	0.80	0.84	0.04	0.84	0.14	0.14	0.82	0.42	0.37
Avail Cap(c_a), veh/h	375	1062	473	145	965	431	563	817	850	306	811	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	29.8	29.1	53.5	39.3	31.4	48.4	17.0	17.1	49.7	21.5	20.9
Incr Delay (d2), s/veh	1.8	0.0	0.1	12.1	5.9	0.0	3.3	0.4	0.3	4.2	1.6	1.5
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(50%),veh/ln	2.4	2.6	1.4	1.1	11.5	0.4	4.6	2.1	2.2	3.7	7.5	5.5
LnGrp Delay(d),s/veh	52.4	29.9	29.1	65.6	45.2	31.4	51.7	17.4	17.4	53.9	23.1	22.5
LnGrp LOS	D	C	C	E	D	C	D	B	B	D	C	C
Approach Vol, veh/h		448			794			532			716	
Approach Delay, s/veh		37.6			45.8			36.6			27.9	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	35.7	15.4	52.4	10.8	31.4	13.0	54.8
Change Period (Y+Rc), s	4.0	5.7	4.0	* 5.9	4.0	5.7	4.0	* 5.9
Max Green Setting (Gmax), s	9.0	31.3	18.0	* 33	12.0	28.3	19.0	* 31
Max Q Clear Time (g_c+I1), s	4.0	7.4	11.3	15.9	6.9	24.0	9.2	6.1
Green Ext Time (p_c), s	0.0	3.8	0.0	2.8	0.0	1.7	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.2
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	300	20	70	730	40	40	60	50	120	250	130
Future Volume (veh/h)	10	300	20	70	730	40	40	60	50	120	250	130
Number	1	6	16	5	2	12	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		1.00	1.00		1.00	1.00		0.99	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	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	12	357	22	79	820	44	61	91	41	150	312	25
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.66	0.66	0.66	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	475	29	362	832	45	201	137	62	147	307	390
Arrive On Green	0.00	0.27	0.25	0.20	0.48	0.45	0.11	0.11	0.10	0.25	0.25	0.25
Sat Flow, veh/h	1774	1737	107	1774	1752	94	1774	1213	547	595	1238	1577
Grp Volume(v), veh/h	12	0	379	79	0	864	61	0	132	462	0	25
Grp Sat Flow(s),veh/h/ln	1774	0	1844	1774	0	1846	1774	0	1760	1833	0	1577
Q Serve(g_s), s	0.3	0.0	18.6	3.7	0.0	45.7	3.1	0.0	7.1	24.5	0.0	1.2
Cycle Q Clear(g_c), s	0.3	0.0	18.6	3.7	0.0	45.7	3.1	0.0	7.1	24.5	0.0	1.2
Prop In Lane	1.00		0.06	1.00		0.05	1.00		0.31	0.32		1.00
Lane Grp Cap(c), veh/h	5	0	504	362	0	877	201	0	199	454	0	390
V/C Ratio(X)	2.62	0.00	0.75	0.22	0.00	0.99	0.30	0.00	0.66	1.02	0.00	0.06
Avail Cap(c_a), veh/h	260	0	1062	362	0	877	439	0	436	454	0	390
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	32.9	32.8	0.0	25.7	40.3	0.0	42.3	37.2	0.0	28.5
Incr Delay (d2), s/veh	817.7	0.0	4.8	0.2	0.0	26.8	0.3	0.0	1.4	46.8	0.0	0.0
Initial Q Delay(d3),s/veh	54.0	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	1.2	0.0	10.1	1.8	0.0	29.6	1.5	0.0	3.5	18.3	0.0	0.5
LnGrp Delay(d),s/veh	921.1	0.0	37.7	33.0	0.0	52.5	40.6	0.0	43.7	84.1	0.0	28.5
LnGrp LOS	F		D	C		D	D		D	F		C
Approach Vol, veh/h		391			943			193			487	
Approach Delay, s/veh		64.8			50.9			42.7			81.2	
Approach LOS		E			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.3	51.0		28.5	24.2	31.1		15.2
Change Period (Y+Rc), s	3.5	6.0		5.5	3.5	6.0		5.5
Max Green Setting (Gmax), s	15.6	45.0		23.0	15.0	55.0		23.0
Max Q Clear Time (g_c+I1), s	2.3	47.7		26.5	5.7	20.6		9.1
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	4.5		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	60.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	270	190	80	550	20	280	60	60	10	40	10
Future Volume (veh/h)	10	270	190	80	550	20	280	60	60	10	40	10
Number	1	6	16	5	2	12	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		1.00	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	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	290	55	88	604	21	394	85	48	13	52	5
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.91	0.91	0.91	0.71	0.71	0.71	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	704	597	114	771	27	471	296	167	18	73	7
Arrive On Green	0.01	0.38	0.38	0.06	0.43	0.41	0.27	0.27	0.26	0.05	0.05	0.05
Sat Flow, veh/h	1774	1863	1579	1774	1789	62	1774	1117	631	338	1352	130
Grp Volume(v), veh/h	11	290	55	88	0	625	394	0	133	70	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1579	1774	0	1852	1774	0	1748	1820	0	0
Q Serve(g_s), s	0.4	7.7	1.5	3.3	0.0	19.5	14.1	0.0	4.1	2.5	0.0	0.0
Cycle Q Clear(g_c), s	0.4	7.7	1.5	3.3	0.0	19.5	14.1	0.0	4.1	2.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.36	0.19		0.07
Lane Grp Cap(c), veh/h	20	704	597	114	0	798	471	0	464	98	0	0
V/C Ratio(X)	0.56	0.41	0.09	0.77	0.00	0.78	0.84	0.00	0.29	0.71	0.00	0.00
Avail Cap(c_a), veh/h	317	1436	1217	317	0	1427	677	0	667	407	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.0	15.4	13.4	30.9	0.0	16.4	23.3	0.0	19.7	31.2	0.0	0.0
Incr Delay (d2), s/veh	17.3	0.4	0.1	8.0	0.0	1.7	5.4	0.0	0.2	6.9	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	0.3	4.0	0.7	1.9	0.0	10.3	7.6	0.0	2.0	1.5	0.0	0.0
LnGrp Delay(d),s/veh	50.3	15.8	13.5	38.9	0.0	18.1	28.7	0.0	19.9	38.1	0.0	0.0
LnGrp LOS	D	B	B	D		B	C		B	D		
Approach Vol, veh/h		356			713			527			70	
Approach Delay, s/veh		16.5			20.7			26.5			38.1	
Approach LOS		B			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	4.7	32.9		7.6	8.3	29.3		21.8
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.6
Max Green Setting (Gmax), s	12.0	50.0		15.0	12.0	50.0		25.0
Max Q Clear Time (g_c+I1), s	2.4	21.5		4.5	5.3	9.7		16.1
Green Ext Time (p_c), s	0.0	5.8		0.1	0.1	6.0		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection 4 **El Dorado Hills Blvd/Francisco Way-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	370	377	101.9%	41.2	16.5	D
	Through	150	161	107.1%	14.3	1.9	B
	Right Turn	40	42	105.8%	7.6	1.7	A
	Subtotal	560	580	103.6%	31.4	11.5	C
SB	Left Turn	130	143	109.8%	20.5	8.3	C
	Through	300	331	110.4%	36.2	10.3	D
	Right Turn	10	12	124.0%	27.4	11.2	C
	Subtotal	440	486	110.5%	31.2	9.5	C
EB	Left Turn	10	11	106.0%	8.2	4.9	A
	Through	60	64	106.0%	12.0	1.4	B
	Right Turn	460	495	107.6%	3.6	0.5	A
	Subtotal	530	569	107.4%	4.8	0.5	A
WB	Left Turn	50	63	125.6%	16.0	3.8	B
	Through	70	89	126.9%	17.0	3.4	B
	Right Turn	50	68	135.4%	13.8	3.3	B
	Subtotal	170	219	129.0%	15.7	3.0	B
Total		1,700	1,855	109.1%	21.5	4.5	C

Intersection	
Intersection Delay, s/veh	88.7
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations			↕				↕				↕				↕	
Traffic Vol, veh/h	0	40	10	90	0	230	10	80	0	30	200	80	0	40	250	20
Future Vol, veh/h	0	40	10	90	0	230	10	80	0	30	200	80	0	40	250	20
Peak Hour Factor	0.92	0.68	0.68	0.68	0.92	0.70	0.70	0.70	0.92	0.63	0.63	0.63	0.92	0.69	0.69	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	59	15	132	0	329	14	114	0	48	317	127	0	58	362	29
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	23.9	94.1	113.8	85.4
HCM LOS	C	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	29%	72%	13%
Vol Thru, %	65%	7%	3%	81%
Vol Right, %	26%	64%	25%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	310	140	320	310
LT Vol	30	40	230	40
Through Vol	200	10	10	250
RT Vol	80	90	80	20
Lane Flow Rate	492	206	457	449
Geometry Grp	1	1	1	1
Degree of Util (X)	1.131	0.529	1.067	1.036
Departure Headway (Hd)	8.677	10.122	8.901	9.001
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	423	358	411	409
Service Time	6.677	8.122	6.901	7.001
HCM Lane V/C Ratio	1.163	0.575	1.112	1.098
HCM Control Delay	113.8	23.9	94.1	85.4
HCM Lane LOS	F	C	F	F
HCM 95th-tile Q	17.1	3	14.5	13.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	520	170	360	390	330	870
Future Volume (veh/h)	520	170	360	390	330	870
Number	7	14	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	722	128	434	292	367	967
Adj No. of Lanes	1	1	2	0	2	2
Peak Hour Factor	0.72	0.72	0.83	0.83	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	751	670	548	366	548	1745
Arrive On Green	0.42	0.42	0.27	0.25	0.16	0.49
Sat Flow, veh/h	1774	1583	2113	1348	3442	3632
Grp Volume(v), veh/h	722	128	380	346	367	967
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1599	1721	1770
Q Serve(g_s), s	37.9	4.9	19.0	19.4	9.6	18.2
Cycle Q Clear(g_c), s	37.9	4.9	19.0	19.4	9.6	18.2
Prop In Lane	1.00	1.00		0.84	1.00	
Lane Grp Cap(c), veh/h	751	670	480	433	548	1745
V/C Ratio(X)	0.96	0.19	0.79	0.80	0.67	0.55
Avail Cap(c_a), veh/h	753	672	870	786	900	1745
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	26.8	17.3	32.4	33.3	37.8	16.9
Incr Delay (d2), s/veh	23.5	0.1	1.1	1.3	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.3	2.1	9.4	8.7	4.6	8.9
LnGrp Delay(d),s/veh	50.3	17.4	33.5	34.6	38.4	17.1
LnGrp LOS	D	B	C	C	D	B
Approach Vol, veh/h	850		726			1334
Approach Delay, s/veh	45.3		34.0			23.0
Approach LOS	D		C			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	21.2	29.9		44.5		51.2		
Change Period (Y+Rc), s	6.0	* 6		4.6		6.0		
Max Green Setting (Gmax), s	25.0	* 45		40.0		45.0		
Max Q Clear Time (g_c+I1), s	11.6	21.4		39.9		20.2		
Green Ext Time (p_c), s	3.6	2.5		0.0		4.8		

Intersection Summary	
HCM 2010 Ctrl Delay	32.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	0	280	0	0	0	490	240	0	0	170	400
Future Volume (veh/h)	90	0	280	0	0	0	490	240	0	0	170	400
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)	0.97		1.00	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	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	158	0	0	0	0	0	544	267	0	0	189	40
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.57	0.57	0.57	0.78	0.78	0.78	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	263	284	241	4	4	0	636	1248	0	4	415	347
Arrive On Green	0.15	0.00	0.00	0.00	0.00	0.00	0.36	0.67	0.00	0.00	0.22	0.22
Sat Flow, veh/h	1728	1863	1583	1774	1863	0	1774	1863	0	1774	1863	1555
Grp Volume(v), veh/h	158	0	0	0	0	0	544	267	0	0	189	40
Grp Sat Flow(s),veh/h/ln	1728	1863	1583	1774	1863	0	1774	1863	0	1774	1863	1555
Q Serve(g_s), s	3.8	0.0	0.0	0.0	0.0	0.0	12.8	2.5	0.0	0.0	4.0	0.9
Cycle Q Clear(g_c), s	3.8	0.0	0.0	0.0	0.0	0.0	12.8	2.5	0.0	0.0	4.0	0.9
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	263	284	241	4	4	0	636	1248	0	4	415	347
V/C Ratio(X)	0.60	0.00	0.00	0.00	0.00	0.00	0.86	0.21	0.00	0.00	0.45	0.12
Avail Cap(c_a), veh/h	1556	1678	1426	1574	1653	0	2165	1707	0	787	1707	1425
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	0.0	0.0	0.0	0.0	13.4	2.9	0.0	0.0	15.1	14.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.0	0.0	0.0	2.6	0.1	0.0	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	0.0	0.0	0.0	6.7	1.3	0.0	0.0	2.1	0.4
LnGrp Delay(d),s/veh	18.6	0.0	0.0	0.0	0.0	0.0	16.0	2.9	0.0	0.0	15.7	14.1
LnGrp LOS	B						B	A			B	B
Approach Vol, veh/h		158			0			811			229	
Approach Delay, s/veh		18.6			0.0			11.7			15.4	
Approach LOS		B						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	10.0	34.2		10.9	20.1	14.1		0.0
Change Period (Y+Rc), s	4.0	5.3		4.6	4.0	5.3		4.0
Max Green Setting (Gmax), s	20.0	40.0		40.0	55.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	10.8	4.5		5.8	14.8	6.0		0.0
Green Ext Time (p_c), s	0.0	2.6		0.2	1.4	2.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	170	50	660	1350	40
Future Volume (veh/h)	60	170	50	660	1350	40
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			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	1900
Adj Flow Rate, veh/h	80	0	53	695	1534	44
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.75	0.75	0.95	0.95	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	106	94	58	2832	2450	70
Arrive On Green	0.06	0.00	0.03	0.80	0.70	0.67
Sat Flow, veh/h	1774	1583	1774	3632	3607	101
Grp Volume(v), veh/h	80	0	53	695	771	807
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1845
Q Serve(g_s), s	2.5	0.0	1.7	2.8	13.3	13.5
Cycle Q Clear(g_c), s	2.5	0.0	1.7	2.8	13.3	13.5
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	106	94	58	2832	1234	1286
V/C Ratio(X)	0.76	0.00	0.91	0.25	0.63	0.63
Avail Cap(c_a), veh/h	772	689	890	3334	1667	1738
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	27.5	1.4	4.6	4.7
Incr Delay (d2), s/veh	10.9	0.0	23.1	0.0	0.6	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	1.6	0.0	1.2	1.3	6.4	6.9
LnGrp Delay(d),s/veh	37.3	0.0	50.5	1.5	5.2	5.2
LnGrp LOS	D		D	A	A	A
Approach Vol, veh/h	80			748	1578	
Approach Delay, s/veh	37.3			4.9	5.2	
Approach LOS	D			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		49.6		7.4	5.9	43.7		
Change Period (Y+Rc), s		5.7		3.8	3.6	5.7		
Max Green Setting (Gmax), s		52.0		25.0	29.0	52.0		
Max Q Clear Time (g_c+I1), s		4.8		4.5	3.7	15.5		
Green Ext Time (p_c), s		26.1		0.2	0.1	22.6		

Intersection Summary	
HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	40	200	80	50	10	80	530	70	10	1120	470
Future Volume (veh/h)	180	40	200	80	50	10	80	530	70	10	1120	470
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		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	191	43	17	190	119	19	91	602	71	11	1191	469
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	45	217	206	129	21	104	1727	203	14	1229	468
Arrive On Green	0.14	0.14	0.14	0.20	0.20	0.19	0.06	0.54	0.53	0.01	0.49	0.48
Sat Flow, veh/h	1461	329	1576	1038	650	104	1774	3190	376	1774	2506	955
Grp Volume(v), veh/h	234	0	17	328	0	0	91	333	340	11	829	831
Grp Sat Flow(s),veh/h/ln	1790	0	1576	1792	0	0	1774	1770	1796	1774	1770	1692
Q Serve(g_s), s	18.1	0.0	1.3	25.0	0.0	0.0	7.1	14.8	15.0	0.9	62.6	68.3
Cycle Q Clear(g_c), s	18.1	0.0	1.3	25.0	0.0	0.0	7.1	14.8	15.0	0.9	62.6	68.3
Prop In Lane	0.82		1.00	0.58		0.06	1.00		0.21	1.00		0.56
Lane Grp Cap(c), veh/h	247	0	217	355	0	0	104	958	972	14	868	830
V/C Ratio(X)	0.95	0.00	0.08	0.92	0.00	0.00	0.87	0.35	0.35	0.79	0.96	1.00
Avail Cap(c_a), veh/h	247	0	217	355	0	0	104	958	972	76	868	830
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	59.6	0.0	52.3	54.8	0.0	0.0	65.0	18.1	18.2	69.0	34.0	36.0
Incr Delay (d2), s/veh	43.3	0.0	0.2	28.7	0.0	0.0	48.5	0.2	0.2	30.4	20.6	31.6
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	11.9	0.0	0.6	15.2	0.0	0.0	4.9	7.3	7.4	0.5	35.4	39.1
LnGrp Delay(d),s/veh	102.8	0.0	52.5	83.6	0.0	0.0	113.5	18.3	18.4	99.4	54.6	67.6
LnGrp LOS	F		D	F			F	B	B	F	D	F
Approach Vol, veh/h		251			328			764			1671	
Approach Delay, s/veh		99.4			83.6			29.7			61.4	
Approach LOS		F			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	79.4		31.6	12.2	72.3		23.2
Change Period (Y+Rc), s	3.7	5.7		4.6	3.7	5.7		5.3
Max Green Setting (Gmax), s	6.3	68.8		27.0	8.5	66.6		17.9
Max Q Clear Time (g_c+I1), s	2.9	17.0		27.0	9.1	70.3		20.1
Green Ext Time (p_c), s	0.0	29.9		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	58.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	30	300	610	40	120	170	510	210	110	1250	30
Future Volume (veh/h)	40	30	300	610	40	120	170	510	210	110	1250	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		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	33	58	413	394	119	185	554	0	120	1359	32
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	45	79	431	334	101	218	1570	702	149	1432	34
Arrive On Green	0.07	0.07	0.07	0.24	0.24	0.24	0.12	0.44	0.00	0.08	0.41	0.39
Sat Flow, veh/h	1774	607	1067	1774	1373	415	1774	3539	1583	1774	3534	83
Grp Volume(v), veh/h	43	0	91	413	0	513	185	554	0	120	680	711
Grp Sat Flow(s),veh/h/ln	1774	0	1674	1774	0	1788	1774	1770	1583	1774	1770	1848
Q Serve(g_s), s	2.4	0.0	5.5	23.7	0.0	25.0	10.5	10.6	0.0	6.8	38.2	38.3
Cycle Q Clear(g_c), s	2.4	0.0	5.5	23.7	0.0	25.0	10.5	10.6	0.0	6.8	38.2	38.3
Prop In Lane	1.00		0.64	1.00		0.23	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	131	0	124	431	0	434	218	1570	702	149	717	749
V/C Ratio(X)	0.33	0.00	0.74	0.96	0.00	1.18	0.85	0.35	0.00	0.80	0.95	0.95
Avail Cap(c_a), veh/h	431	0	407	431	0	434	431	1777	795	431	717	749
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	0.0	46.7	38.5	0.0	39.0	44.2	18.9	0.0	46.3	29.6	29.6
Incr Delay (d2), s/veh	0.5	0.0	3.2	32.9	0.0	102.9	3.6	0.2	0.0	3.8	22.1	21.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.6	15.5	0.0	24.7	5.4	5.2	0.0	3.5	22.9	24.1
LnGrp Delay(d),s/veh	45.8	0.0	49.8	71.4	0.0	141.9	47.8	19.1	0.0	50.1	51.6	51.3
LnGrp LOS	D		D	E		F	D	B		D	D	D
Approach Vol, veh/h		134			926			739			1511	
Approach Delay, s/veh		48.5			110.5			26.3			51.4	
Approach LOS		D			F			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	12.7	49.7		11.6	16.6	45.7		29.0
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	25.0	50.0		25.0	25.0	40.0		25.0
Max Q Clear Time (g_c+I1), s	7.8	12.6		7.5	12.5	40.3		27.0
Green Ext Time (p_c), s	0.1	25.3		0.3	0.2	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.2
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	300	50	10	640	70	10
Future Vol, veh/h	300	50	10	640	70	10
Conflicting Peds, #/hr	0	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	76	76	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	366	61	13	842	89	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	427	0	1264	398
Stage 1	-	-	-	-	396	-
Stage 2	-	-	-	-	868	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1132	-	187	652
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	411	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1130	-	185	651
Mov Cap-2 Maneuver	-	-	-	-	185	-
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	406	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	39.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	203	-	-	1130	-
HCM Lane V/C Ratio	0.499	-	-	0.012	-
HCM Control Delay (s)	39.2	-	-	8.2	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	2.5	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	160	90	170	460	440	160	270	120	250	340	120
Future Volume (veh/h)	110	160	90	170	460	440	160	270	120	250	340	120
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	141	205	39	198	535	368	258	435	0	301	410	111
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.62	0.62	0.62	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	904	169	234	677	465	294	730	326	335	633	170
Arrive On Green	0.10	0.30	0.29	0.13	0.34	0.32	0.17	0.21	0.00	0.19	0.23	0.22
Sat Flow, veh/h	1774	2977	556	1774	2007	1379	1774	3539	1583	1774	2760	740
Grp Volume(v), veh/h	141	120	124	198	472	431	258	435	0	301	261	260
Grp Sat Flow(s),veh/h/ln	1774	1770	1763	1774	1770	1616	1774	1770	1583	1774	1770	1730
Q Serve(g_s), s	7.4	4.8	5.0	10.3	22.8	22.9	13.4	10.5	0.0	15.7	12.6	12.9
Cycle Q Clear(g_c), s	7.4	4.8	5.0	10.3	22.8	22.9	13.4	10.5	0.0	15.7	12.6	12.9
Prop In Lane	1.00		0.32	1.00		0.85	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	175	537	535	234	597	545	294	730	326	335	406	397
V/C Ratio(X)	0.81	0.22	0.23	0.85	0.79	0.79	0.88	0.60	0.00	0.90	0.64	0.65
Avail Cap(c_a), veh/h	376	774	771	376	774	707	376	1360	609	376	680	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	24.6	24.8	40.0	28.3	28.8	38.5	33.9	0.0	37.4	32.9	33.3
Incr Delay (d2), s/veh	6.4	0.2	0.2	7.8	3.8	4.1	16.2	0.6	0.0	21.6	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	2.4	2.4	5.6	11.6	10.8	7.9	5.2	0.0	9.7	6.3	6.3
LnGrp Delay(d),s/veh	48.1	24.7	24.9	47.8	32.0	33.0	54.7	34.5	0.0	59.0	34.2	34.6
LnGrp LOS	D	C	C	D	C	C	D	C		E	C	C
Approach Vol, veh/h		385			1101			693			822	
Approach Delay, s/veh		33.4			35.2			42.0			43.4	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	23.5	16.5	32.7	19.6	25.7	13.3	35.8
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	20.0	35.0	20.0	40.0	20.0	35.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	17.7	12.5	12.3	7.0	15.4	14.9	9.4	24.9
Green Ext Time (p_c), s	0.2	5.3	0.2	7.3	0.2	5.2	0.2	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	38.8
HCM 2010 LOS	D

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	360	332	92.2%	203.9	61.9	F
	Through	750	732	97.6%	14.7	2.3	B
	Right Turn	60	57	94.7%	11.4	3.8	B
	Subtotal	1,170	1,121	95.8%	71.7	19.1	E
SB	Left Turn	110	95	86.4%	253.2	40.4	F
	Through	1,405	1,286	91.5%	250.0	32.1	F
	Right Turn	270	250	92.6%	261.7	30.2	F
	Subtotal	1,785	1,631	91.4%	252.1	31.2	F
EB	Left Turn	80	69	86.3%	333.3	65.2	F
	Through	80	75	94.3%	369.1	67.4	F
	Right Turn						
	Subtotal	160	144	90.3%	353.5	66.4	F
WB	Left Turn	120	123	102.1%	54.5	6.6	D
	Through	80	85	105.8%	54.9	10.5	D
	Right Turn	50	56	111.2%	36.4	9.9	D
	Subtotal	250	263	105.1%	51.2	6.7	D
Total		3,365	3,159	93.9%	175.4	22.0	F

Intersection 15 **El Dorado Hills Bld/US 50 WB Ramps-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	804	825	102.6%	51.6	7.0	D
	Through	784	807	102.9%	19.7	7.6	B
	Right Turn	50	57	113.8%	8.1	3.5	A
	Subtotal	1,638	1,689	103.1%	34.9	3.7	C
SB	Left Turn	54	51	94.4%	73.9	13.6	E
	Through	1,031	955	92.6%	40.9	10.4	D
	Right Turn	440	405	92.1%	25.0	6.7	C
	Subtotal	1,525	1,411	92.5%	37.6	8.7	D
EB	Left Turn	342	286	83.6%	119.9	24.1	F
	Through	50	43	86.4%	116.3	29.9	F
	Right Turn	281	267	94.9%	1.3	0.1	A
	Subtotal	673	596	88.5%	66.1	11.1	E
WB	Left Turn	91	85	93.2%	57.9	10.9	E
	Through	30	31	104.0%	72.8	18.6	E
	Right Turn	40	43	108.5%	7.0	3.5	A
	Subtotal	161	159	99.0%	47.6	7.9	D
Total		3,997	3,855	96.5%	40.7	3.0	D

Intersection 16 **Latrobe Rd/US 50 EB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	1,508	1,562	103.6%	9.2	2.4	A
	Right Turn	101	106	105.0%	7.4	2.2	A
	Subtotal	1,609	1,669	103.7%	9.1	2.3	A
SB	Left Turn	290	263	90.8%	39.6	6.0	D
	Through	1,115	1,044	93.7%	23.5	4.8	C
	Right Turn						
	Subtotal	1,405	1,308	93.1%	26.9	3.3	C
EB	Left Turn						
	Through						
	Right Turn	1,054	1,091	103.5%	23.4	6.1	C
	Subtotal	1,054	1,091	103.5%	23.4	6.1	C
WB	Left Turn						
	Through						
	Right Turn	130	129	99.2%	4.3	0.1	A
	Subtotal	130	129	99.2%	4.3	0.1	A
Total		4,198	4,196	99.9%	18.2	2.3	B

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	62	67	108.1%	43.8	7.5	D
	Through	1,320	1,369	103.7%	25.5	3.0	C
	Right Turn	110	110	99.7%	5.2	1.3	A
	Subtotal	1,492	1,546	103.6%	24.9	2.8	C
SB	Left Turn	419	410	97.8%	40.7	6.5	D
	Through	1,550	1,529	98.6%	15.6	1.8	B
	Right Turn	200	196	98.1%	4.5	0.6	A
	Subtotal	2,169	2,135	98.4%	19.5	1.8	B
EB	Left Turn	20	18	92.0%	40.4	10.2	D
	Through	10	11	114.0%	34.4	13.5	C
	Right Turn	10	11	111.0%	13.2	16.0	B
	Subtotal	40	41	102.3%	33.4	6.1	C
WB	Left Turn	91	95	104.2%	39.9	6.7	D
	Through	30	31	102.3%	37.9	16.1	D
	Right Turn	260	272	104.7%	18.1	7.5	B
	Subtotal	381	398	104.4%	24.8	7.5	C
Total		4,082	4,119	100.9%	22.2	1.7	C

Intersection 18 **Latrobe Rd/White Rock Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	80	83	104.1%	70.1	8.1	E
	Through	880	916	104.1%	28.3	3.1	C
	Right Turn	220	228	103.6%	10.9	1.9	B
	Subtotal	1,180	1,227	104.0%	27.9	2.6	C
SB	Left Turn	102	101	98.7%	60.9	9.6	E
	Through	1,100	1,087	98.8%	26.2	2.1	C
	Right Turn	450	448	99.4%	15.6	3.3	B
	Subtotal	1,652	1,635	99.0%	25.6	2.2	C
EB	Left Turn	432	449	103.8%	59.5	8.5	E
	Through	220	231	105.0%	56.2	6.0	E
	Right Turn	40	37	92.0%	36.3	8.7	D
	Subtotal	692	716	103.5%	57.3	6.8	E
WB	Left Turn	340	344	101.1%	53.5	5.3	D
	Through	170	173	101.9%	59.4	7.4	E
	Right Turn	180	188	104.2%	8.9	3.6	A
	Subtotal	690	705	102.1%	42.9	4.6	D
Total		4,214	4,283	101.6%	34.7	1.1	C

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	1	107	421	11	20	452	200	84	10	10	50	10	153
Future Volume (veh/h)	1	107	421	11	20	452	200	84	10	10	50	10	153
Number		5	2	12	1	6	16	7	4	14	3	8	18
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		0.97
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h		129	507	8	25	565	216	98	12	0	54	11	2
Adj No. of Lanes		1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor		0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		167	2704	1208	38	1732	660	135	99	0	77	31	6
Arrive On Green		0.09	0.76	0.76	0.02	0.69	0.68	0.08	0.05	0.00	0.04	0.02	0.02
Sat Flow, veh/h		1774	3539	1581	1774	2506	956	1774	1863	0	1774	1527	278
Grp Volume(v), veh/h		129	507	8	25	399	382	98	12	0	54	0	13
Grp Sat Flow(s),veh/h/ln		1774	1770	1581	1774	1770	1692	1774	1863	0	1774	0	1805
Q Serve(g_s), s		9.6	5.3	0.2	1.9	12.1	12.5	7.3	0.8	0.0	4.1	0.0	1.0
Cycle Q Clear(g_c), s		9.6	5.3	0.2	1.9	12.1	12.5	7.3	0.8	0.0	4.1	0.0	1.0
Prop In Lane		1.00		1.00	1.00		0.56	1.00		0.00	1.00		0.15
Lane Grp Cap(c), veh/h		167	2704	1208	38	1223	1170	135	99	0	77	0	36
V/C Ratio(X)		0.77	0.19	0.01	0.66	0.33	0.33	0.73	0.12	0.00	0.70	0.00	0.36
Avail Cap(c_a), veh/h		263	2704	1208	79	1223	1170	197	317	0	302	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)		0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh		59.7	4.4	3.8	65.6	8.3	8.6	61.0	60.9	0.0	63.7	0.0	65.3
Incr Delay (d2), s/veh		2.5	0.1	0.0	7.2	0.7	0.7	2.8	0.5	0.0	11.2	0.0	5.9
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		4.8	2.7	0.1	1.0	6.1	6.1	3.7	0.4	0.0	2.2	0.0	0.5
LnGrp Delay(d),s/veh		62.2	4.5	3.8	72.8	9.0	9.3	63.8	61.5	0.0	74.9	0.0	71.2
LnGrp LOS		E	A	A	E	A	A	E	E		E		E
Approach Vol, veh/h			644			806			110			67	
Approach Delay, s/veh			16.1			11.2			63.5			74.2	
Approach LOS			B			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	107.1	9.8	11.2	16.7	97.3	14.3	6.7
Change Period (Y+Rc), s	4.5	6.0	4.5	4.5	* 5.2	6.0	* 5.2	4.5
Max Green Setting (Gmax), s	5.5	65.0	22.5	22.5	* 19	51.0	* 14	30.5
Max Q Clear Time (g_c+I1), s	3.9	7.3	6.1	2.8	11.6	14.5	9.3	3.0
Green Ext Time (p_c), s	0.0	13.5	0.1	0.1	0.0	12.3	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.2
HCM 2010 LOS	B

Notes

User approved ignoring U-Turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	350	50	100	430	50	130	10	190	30	10	10
Future Volume (veh/h)	10	350	50	100	430	50	130	10	190	30	10	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	393	53	145	623	69	151	12	6	37	12	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.69	0.69	0.69	0.86	0.86	0.86	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	7	686	93	173	837	93	228	150	75	108	113	0
Arrive On Green	0.00	0.43	0.39	0.10	0.51	0.48	0.13	0.13	0.12	0.06	0.06	0.00
Sat Flow, veh/h	1774	1607	217	1774	1648	182	1774	1169	585	1774	1863	0
Grp Volume(v), veh/h	11	0	446	145	0	692	151	0	18	37	12	0
Grp Sat Flow(s),veh/h/ln	1774	0	1824	1774	0	1830	1774	0	1754	1774	1863	0
Q Serve(g_s), s	0.2	0.0	10.4	4.5	0.0	16.7	4.5	0.0	0.5	1.1	0.3	0.0
Cycle Q Clear(g_c), s	0.2	0.0	10.4	4.5	0.0	16.7	4.5	0.0	0.5	1.1	0.3	0.0
Prop In Lane	1.00		0.12	1.00		0.10	1.00		0.33	1.00		0.00
Lane Grp Cap(c), veh/h	7	0	779	173	0	930	228	0	225	108	113	0
V/C Ratio(X)	1.68	0.00	0.57	0.84	0.00	0.74	0.66	0.00	0.08	0.34	0.11	0.00
Avail Cap(c_a), veh/h	778	0	1535	778	0	1517	1118	0	1106	1118	1174	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.8	0.0	12.2	24.8	0.0	10.9	23.2	0.0	21.5	25.2	24.8	0.0
Incr Delay (d2), s/veh	353.9	0.0	0.9	4.1	0.0	1.2	4.1	0.0	0.2	2.3	0.5	0.0
Initial Q Delay(d3),s/veh	108.6	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	0.7	0.0	5.4	2.4	0.0	8.6	2.5	0.0	0.3	0.6	0.2	0.0
LnGrp Delay(d),s/veh	490.3	0.0	13.1	28.9	0.0	12.1	27.3	0.0	21.6	27.5	25.3	0.0
LnGrp LOS	F		B	C		B	C		C	C	C	
Approach Vol, veh/h		457			837			169			49	
Approach Delay, s/veh		24.6			15.0			26.7			27.0	
Approach LOS		C			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	4.2	33.1		11.2	9.4	27.9		7.4
Change Period (Y+Rc), s	3.5	* 6		* 4.2	3.5	6.0		4.2
Max Green Setting (Gmax), s	25.6	* 45		* 35	25.0	45.0		35.0
Max Q Clear Time (g_c+I1), s	2.2	18.7		6.5	6.5	12.4		3.1
Green Ext Time (p_c), s	0.0	8.3		0.7	0.1	8.9		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	40	20	700	1490	10
Future Vol, veh/h	0	40	20	700	1490	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	43	22	761	1620	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	815	1630	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	321	394	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	321	394	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	394	-	321	-	-
HCM Lane V/C Ratio	0.055	-	0.135	-	-
HCM Control Delay (s)	14.7	-	18	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	40	640	40	20	1380
Future Vol, veh/h	0	40	640	40	20	1380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	43	696	43	22	1500

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	370	0	0	739	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	627	-	-	863	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	627	-	-	863	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	627	863	-
HCM Lane V/C Ratio	-	-	0.069	0.025	-
HCM Control Delay (s)	-	-	11.2	9.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	330	20	20	680	10	0	0	20	0	0	90
Future Vol, veh/h	0	330	20	20	680	10	0	0	20	0	0	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	359	22	22	739	11	0	0	22	0	0	98

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	380	0	0	-	-	370	-	-	745
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	-	-	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.218	-	-	-	-	3.318	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	1178	-	-	0	0	676	0	0	414
Stage 1	0	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1178	-	-	-	-	676	-	-	414
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	10.5	16.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	676	-	-	1178	-	-	414
HCM Lane V/C Ratio	0.032	-	-	0.018	-	-	0.236
HCM Control Delay (s)	10.5	-	-	8.1	-	-	16.4
HCM Lane LOS	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	0.9

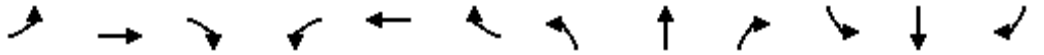
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	400	580	20	20	10
Future Vol, veh/h	10	400	580	20	20	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	435	630	22	22	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	652	0	-	0	880	326
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	239	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	930	-	-	-	287	670
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	778	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	930	-	-	-	284	670
Mov Cap-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	769	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	930	-	-	-	352
HCM Lane V/C Ratio	0.012	-	-	-	0.093
HCM Control Delay (s)	8.9	-	-	-	16.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	460	0	140	70	400	0	0	270	580
Future Volume (veh/h)	0	0	0	460	0	140	70	400	0	0	270	580
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	0	0	1881	1881
Adj Flow Rate, veh/h				529	0	32	91	519	0	0	290	147
Adj No. of Lanes				2	0	1	1	2	0	0	2	1
Peak Hour Factor				0.87	0.87	0.87	0.77	0.77	0.77	0.93	0.93	0.93
Percent Heavy Veh, %				2	2	2	2	2	0	0	1	1
Cap, veh/h				920	0	411	241	1870	0	0	1024	458
Arrive On Green				0.26	0.00	0.26	0.14	0.53	0.00	0.00	0.29	0.29
Sat Flow, veh/h				3548	0	1583	1774	3632	0	0	3668	1599
Grp Volume(v), veh/h				529	0	32	91	519	0	0	290	147
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1787	1599
Q Serve(g_s), s				4.9	0.0	0.6	1.8	3.1	0.0	0.0	2.4	2.7
Cycle Q Clear(g_c), s				4.9	0.0	0.6	1.8	3.1	0.0	0.0	2.4	2.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				920	0	411	241	1870	0	0	1024	458
V/C Ratio(X)				0.57	0.00	0.08	0.38	0.28	0.00	0.00	0.28	0.32
Avail Cap(c_a), veh/h				2993	0	1336	1186	4958	0	0	5007	2240
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				12.1	0.0	10.5	14.8	4.9	0.0	0.0	10.4	10.6
Incr Delay (d2), s/veh				0.2	0.0	0.0	0.4	0.0	0.0	0.0	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
%ile BackOfQ(50%),veh/ln				2.4	0.0	0.3	0.9	1.4	0.0	0.0	1.2	1.2
LnGrp Delay(d),s/veh				12.4	0.0	10.6	15.2	4.9	0.0	0.0	10.5	10.7
LnGrp LOS				B		B	B	A			B	B
Approach Vol, veh/h					561			610			437	
Approach Delay, s/veh					12.3			6.5			10.6	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.9			9.1	14.8		13.8
Change Period (Y+Rc), s		6.8			* 4.2	6.8		5.8
Max Green Setting (Gmax), s		50.0			* 25	50.0		30.0
Max Q Clear Time (g_c+I1), s		5.1			3.8	4.7		6.9
Green Ext Time (p_c), s		1.7			0.1	1.7		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	40	350	390	550	180
Future Volume (veh/h)	80	40	350	390	550	180
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1881	1881	1863	1863
Adj Flow Rate, veh/h	85	8	467	520	632	52
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	0.94	0.94	0.75	0.75	0.87	0.87
Percent Heavy Veh, %	5	5	1	1	2	2
Cap, veh/h	595	266	701	2250	1164	521
Arrive On Green	0.17	0.17	0.20	0.63	0.33	0.33
Sat Flow, veh/h	3447	1538	3476	3668	3632	1583
Grp Volume(v), veh/h	85	8	467	520	632	52
Grp Sat Flow(s),veh/h/ln	1723	1538	1738	1787	1770	1583
Q Serve(g_s), s	0.8	0.2	5.0	2.6	5.9	0.9
Cycle Q Clear(g_c), s	0.8	0.2	5.0	2.6	5.9	0.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	595	266	701	2250	1164	521
V/C Ratio(X)	0.14	0.03	0.67	0.23	0.54	0.10
Avail Cap(c_a), veh/h	2284	1019	2595	4666	4620	2067
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	14.2	13.9	14.9	3.2	11.1	9.4
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.2	2.4	1.2	2.8	0.4
LnGrp Delay(d),s/veh	14.2	13.9	15.3	3.3	11.2	9.4
LnGrp LOS	B	B	B	A	B	A
Approach Vol, veh/h	93			987	684	
Approach Delay, s/veh	14.2			9.0	11.1	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		29.5		11.0	12.2	17.3		
Change Period (Y+Rc), s		6.8		5.8	* 4.2	6.8		
Max Green Setting (Gmax), s		50.0		25.0	* 30	50.0		
Max Q Clear Time (g_c+I1), s		4.6		2.8	7.0	7.9		
Green Ext Time (p_c), s		2.6		0.1	0.8	2.6		

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	680	290	60	450	70	300	290	20	100	250	200
Future Volume (veh/h)	370	680	290	60	450	70	300	290	20	100	250	200
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		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	398	731	72	67	506	9	357	345	19	111	278	71
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.84	0.84	0.84	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	454	1017	454	86	722	322	414	1506	83	137	734	623
Arrive On Green	0.13	0.29	0.29	0.05	0.20	0.20	0.12	0.44	0.42	0.08	0.39	0.39
Sat Flow, veh/h	3442	3539	1578	1774	3539	1579	3442	3412	187	1774	1863	1581
Grp Volume(v), veh/h	398	731	72	67	506	9	357	178	186	111	278	71
Grp Sat Flow(s),veh/h/ln	1721	1770	1578	1774	1770	1579	1721	1770	1829	1774	1863	1581
Q Serve(g_s), s	12.5	20.4	3.7	4.1	14.6	0.5	11.2	6.9	7.0	6.8	11.7	3.1
Cycle Q Clear(g_c), s	12.5	20.4	3.7	4.1	14.6	0.5	11.2	6.9	7.0	6.8	11.7	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	454	1017	454	86	722	322	414	781	808	137	734	623
V/C Ratio(X)	0.88	0.72	0.16	0.78	0.70	0.03	0.86	0.23	0.23	0.81	0.38	0.11
Avail Cap(c_a), veh/h	501	1094	488	210	997	445	501	781	808	226	734	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	35.2	29.3	51.8	40.7	35.0	47.5	19.1	19.2	50.0	23.8	21.2
Incr Delay (d2), s/veh	14.1	1.7	0.1	5.6	0.5	0.0	11.0	0.7	0.7	4.3	1.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	10.2	1.6	2.1	7.2	0.2	5.9	3.5	3.7	3.5	6.3	1.4
LnGrp Delay(d),s/veh	60.9	36.9	29.3	57.4	41.2	35.1	58.5	19.8	19.8	54.2	25.2	21.5
LnGrp LOS	E	D	C	E	D	D	E	B	B	D	C	C
Approach Vol, veh/h		1201			582			721			460	
Approach Delay, s/veh		44.4			43.0			38.9			31.7	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	35.6	17.2	47.8	18.5	26.4	12.5	52.6
Change Period (Y+Rc), s	4.0	5.7	4.0	* 5.9	4.0	5.7	4.0	* 5.9
Max Green Setting (Gmax), s	13.0	32.3	16.0	* 30	16.0	29.3	14.0	* 31
Max Q Clear Time (g_c+I1), s	6.1	22.4	13.2	13.7	14.5	16.6	8.8	9.0
Green Ext Time (p_c), s	0.0	3.6	0.0	2.4	0.0	4.1	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	40.8
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	750	70	30	470	110	60	180	80	40	90	110
Future Volume (veh/h)	70	750	70	30	470	110	60	180	80	40	90	110
Number	1	6	16	5	2	12	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		1.00	1.00		1.00	1.00		0.99	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	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	75	806	0	36	560	57	71	214	90	45	101	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.84	0.84	0.84	0.84	0.84	0.84	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	928	0	38	659	67	364	255	107	66	147	184
Arrive On Green	0.12	0.50	0.00	0.02	0.40	0.38	0.21	0.21	0.19	0.12	0.12	0.00
Sat Flow, veh/h	1774	1863	0	1774	1663	169	1774	1244	523	565	1269	1583
Grp Volume(v), veh/h	75	806	0	36	0	617	71	0	304	146	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1832	1774	0	1767	1834	0	1583
Q Serve(g_s), s	3.9	38.5	0.0	2.0	0.0	30.9	3.3	0.0	16.6	7.7	0.0	0.0
Cycle Q Clear(g_c), s	3.9	38.5	0.0	2.0	0.0	30.9	3.3	0.0	16.6	7.7	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.30	0.31		1.00
Lane Grp Cap(c), veh/h	219	928	0	38	0	726	364	0	363	213	0	184
V/C Ratio(X)	0.34	0.87	0.00	0.95	0.00	0.85	0.20	0.00	0.84	0.68	0.00	0.00
Avail Cap(c_a), veh/h	256	1055	0	256	0	856	432	0	430	447	0	385
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	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.4	22.3	0.0	49.2	0.0	27.7	33.1	0.0	38.6	42.7	0.0	0.0
Incr Delay (d2), s/veh	0.7	8.3	0.0	48.0	0.0	8.7	0.1	0.0	10.4	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	21.9	0.0	1.5	0.0	17.4	1.6	0.0	9.2	4.0	0.0	0.0
LnGrp Delay(d),s/veh	41.1	30.7	0.0	97.2	0.0	36.4	33.2	0.0	49.0	44.2	0.0	0.0
LnGrp LOS	D	C		F		D	C		D	D		
Approach Vol, veh/h		881			653			375			146	
Approach Delay, s/veh		31.6			39.8			46.0			44.2	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.4	43.9		15.7	6.1	54.2		24.6
Change Period (Y+Rc), s	3.5	6.0		5.5	3.5	6.0		5.5
Max Green Setting (Gmax), s	15.0	45.0		23.0	15.0	55.0		23.0
Max Q Clear Time (g_c+I1), s	5.9	32.9		9.7	4.0	40.5		18.6
Green Ext Time (p_c), s	0.1	5.0		0.3	0.1	7.7		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	37.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	640	210	60	380	10	260	20	60	10	20	10
Future Volume (veh/h)	10	640	210	60	380	10	260	20	60	10	20	10
Number	1	6	16	5	2	12	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		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	10	667	132	65	413	11	289	22	9	14	29	0
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.90	0.90	0.90	0.69	0.69	0.69
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	873	740	83	912	24	361	256	105	22	45	0
Arrive On Green	0.01	0.47	0.47	0.05	0.51	0.48	0.20	0.20	0.19	0.04	0.04	0.00
Sat Flow, veh/h	1774	1863	1580	1774	1806	48	1774	1255	514	597	1236	0
Grp Volume(v), veh/h	10	667	132	65	0	424	289	0	31	43	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1580	1774	0	1854	1774	0	1769	1833	0	0
Q Serve(g_s), s	0.4	19.4	3.2	2.4	0.0	9.6	10.2	0.0	0.9	1.5	0.0	0.0
Cycle Q Clear(g_c), s	0.4	19.4	3.2	2.4	0.0	9.6	10.2	0.0	0.9	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.29	0.33		0.00
Lane Grp Cap(c), veh/h	18	873	740	83	0	937	361	0	360	67	0	0
V/C Ratio(X)	0.55	0.76	0.18	0.78	0.00	0.45	0.80	0.00	0.09	0.64	0.00	0.00
Avail Cap(c_a), veh/h	325	1470	1246	325	0	1463	693	0	691	420	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.3	14.4	10.1	30.9	0.0	10.4	24.8	0.0	21.2	31.1	0.0	0.0
Incr Delay (d2), s/veh	18.3	1.4	0.1	11.3	0.0	0.3	3.1	0.0	0.1	7.2	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(50%),veh/ln	0.3	10.2	1.4	1.4	0.0	4.9	5.3	0.0	0.5	0.9	0.0	0.0
LnGrp Delay(d),s/veh	50.6	15.8	10.2	42.2	0.0	10.8	27.9	0.0	21.3	38.4	0.0	0.0
LnGrp LOS	D	B	B	D		B	C		C	D		
Approach Vol, veh/h		809			489			320			43	
Approach Delay, s/veh		15.3			14.9			27.3			38.4	
Approach LOS		B			B			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	4.7	37.1		6.4	7.1	34.7		17.4
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.6
Max Green Setting (Gmax), s	12.0	50.0		15.0	12.0	50.0		25.0
Max Q Clear Time (g_c+I1), s	2.4	11.6		3.5	4.4	21.4		12.2
Green Ext Time (p_c), s	0.0	8.0		0.1	0.0	7.6		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection 4 **El Dorado Hills Blvd/Francisco Way-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	550	532	96.7%	26.9	7.6	C
	Through	340	345	101.5%	15.0	2.3	B
	Right Turn	20	19	94.0%	9.9	3.9	A
	Subtotal	910	896	98.5%	22.0	5.0	C
SB	Left Turn	20	20	98.5%	7.3	1.2	A
	Through	170	171	100.6%	14.4	1.5	B
	Right Turn	10	10	100.0%	8.1	3.8	A
	Subtotal	200	201	100.4%	13.4	1.3	B
EB	Left Turn	10	10	103.0%	8.4	3.6	A
	Through	40	37	92.0%	9.3	0.8	A
	Right Turn	480	475	98.9%	3.5	0.4	A
	Subtotal	530	522	98.5%	4.0	0.4	A
WB	Left Turn	30	31	103.0%	9.0	0.9	A
	Through	40	43	107.3%	9.5	1.4	A
	Right Turn	50	52	104.8%	7.1	1.4	A
	Subtotal	120	126	105.2%	8.4	1.0	A
Total		1,760	1,745	99.1%	14.4	2.5	B

Intersection	
Intersection Delay, s/veh	36.5
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations			↕				↕				↕				↕	
Traffic Vol, veh/h	0	20	10	50	0	110	10	60	0	80	290	150	0	70	220	90
Future Vol, veh/h	0	20	10	50	0	110	10	60	0	80	290	150	0	70	220	90
Peak Hour Factor	0.92	0.79	0.79	0.79	0.92	0.87	0.87	0.87	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	25	13	63	0	126	11	69	0	94	341	176	0	82	259	106
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.4	15.2	55.7	25.5
HCM LOS	B	C	F	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	25%	61%	18%
Vol Thru, %	56%	12%	6%	58%
Vol Right, %	29%	62%	33%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	520	80	180	380
LT Vol	80	20	110	70
Through Vol	290	10	10	220
RT Vol	150	50	60	90
Lane Flow Rate	612	101	207	447
Geometry Grp	1	1	1	1
Degree of Util (X)	0.982	0.206	0.411	0.754
Departure Headway (Hd)	5.776	7.339	7.143	6.075
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	624	486	501	595
Service Time	3.833	5.435	5.22	4.14
HCM Lane V/C Ratio	0.981	0.208	0.413	0.751
HCM Control Delay	55.7	12.4	15.2	25.5
HCM Lane LOS	F	B	C	D
HCM 95th-tile Q	14.4	0.8	2	6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	220	190	940	330	210	570
Future Volume (veh/h)	220	190	940	330	210	570
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	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	262	11	1000	331	241	655
Adj No. of Lanes	1	1	2	0	2	2
Peak Hour Factor	0.84	0.84	0.94	0.94	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	327	292	1234	405	465	2465
Arrive On Green	0.18	0.18	0.47	0.44	0.14	0.70
Sat Flow, veh/h	1774	1583	2707	858	3442	3632
Grp Volume(v), veh/h	262	11	675	656	241	655
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1702	1721	1770
Q Serve(g_s), s	9.5	0.4	21.9	22.5	4.4	4.6
Cycle Q Clear(g_c), s	9.5	0.4	21.9	22.5	4.4	4.6
Prop In Lane	1.00	1.00		0.50	1.00	
Lane Grp Cap(c), veh/h	327	292	836	804	465	2465
V/C Ratio(X)	0.80	0.04	0.81	0.82	0.52	0.27
Avail Cap(c_a), veh/h	1071	956	1237	1189	1279	2473
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	26.2	22.5	15.1	15.7	27.1	3.8
Incr Delay (d2), s/veh	1.7	0.0	1.5	1.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.2	10.8	10.8	2.1	2.2
LnGrp Delay(d),s/veh	28.0	22.5	16.6	17.4	27.4	3.8
LnGrp LOS	C	C	B	B	C	A
Approach Vol, veh/h	273		1331			896
Approach Delay, s/veh	27.8		17.0			10.2
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.1	35.8		16.4		50.9		
Change Period (Y+Rc), s	6.0	* 6		4.6		6.0		
Max Green Setting (Gmax), s	25.0	* 45		40.0		45.0		
Max Q Clear Time (g_c+I1), s	11.4	24.5		11.5		6.6		
Green Ext Time (p_c), s	2.8	5.3		0.4		3.0		

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	0	280	0	0	0	230	320	0	0	240	110
Future Volume (veh/h)	200	0	280	0	0	0	230	320	0	0	240	110
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)	0.98		0.98	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	1900	1863	1863	1863
Adj Flow Rate, veh/h	230	0	38	0	0	0	271	376	0	0	267	43
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.60	0.60	0.60	0.85	0.85	0.85	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	386	322	4	5	0	353	1110	0	4	555	466
Arrive On Green	0.21	0.00	0.21	0.00	0.00	0.00	0.20	0.60	0.00	0.00	0.30	0.30
Sat Flow, veh/h	1740	1863	1553	1774	1863	0	1774	1863	0	1774	1863	1562
Grp Volume(v), veh/h	230	0	38	0	0	0	271	376	0	0	267	43
Grp Sat Flow(s),veh/h/ln	1740	1863	1553	1774	1863	0	1774	1863	0	1774	1863	1562
Q Serve(g_s), s	4.9	0.0	0.8	0.0	0.0	0.0	5.9	4.2	0.0	0.0	4.8	0.8
Cycle Q Clear(g_c), s	4.9	0.0	0.8	0.0	0.0	0.0	5.9	4.2	0.0	0.0	4.8	0.8
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	386	322	4	5	0	353	1110	0	4	555	466
V/C Ratio(X)	0.64	0.00	0.12	0.00	0.00	0.00	0.77	0.34	0.00	0.00	0.48	0.09
Avail Cap(c_a), veh/h	1739	1862	1552	1747	1835	0	2402	1894	0	874	1894	1588
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	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	0.0	13.1	0.0	0.0	0.0	15.4	4.2	0.0	0.0	11.7	10.3
Incr Delay (d2), s/veh	0.7	0.0	0.1	0.0	0.0	0.0	2.6	0.1	0.0	0.0	0.5	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(50%),veh/ln	2.4	0.0	0.3	0.0	0.0	0.0	3.1	2.1	0.0	0.0	2.5	0.4
LnGrp Delay(d),s/veh	15.4	0.0	13.1	0.0	0.0	0.0	18.0	4.3	0.0	0.0	12.2	10.3
LnGrp LOS	B		B				B	A			B	B
Approach Vol, veh/h		268			0			647			310	
Approach Delay, s/veh		15.1			0.0			10.0			11.9	
Approach LOS		B						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	10.0	28.2		12.4	12.1	16.1		0.0
Change Period (Y+Rc), s	4.0	5.3		4.6	4.0	5.3		4.0
Max Green Setting (Gmax), s	20.0	40.0		40.0	55.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	10.3	6.2		6.9	7.9	6.8		0.0
Green Ext Time (p_c), s	0.0	3.8		0.4	0.6	3.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	100	180	1270	760	20
Future Volume (veh/h)	30	100	180	1270	760	20
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			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	1900
Adj Flow Rate, veh/h	34	1	196	1380	826	20
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.87	0.87	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	60	54	238	2909	2175	53
Arrive On Green	0.03	0.03	0.13	0.82	0.62	0.59
Sat Flow, veh/h	1774	1583	1774	3632	3625	86
Grp Volume(v), veh/h	34	1	196	1380	414	432
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1847
Q Serve(g_s), s	1.0	0.0	6.0	6.3	6.5	6.5
Cycle Q Clear(g_c), s	1.0	0.0	6.0	6.3	6.5	6.5
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	60	54	238	2909	1090	1138
V/C Ratio(X)	0.56	0.02	0.82	0.47	0.38	0.38
Avail Cap(c_a), veh/h	792	707	914	3422	1711	1786
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	25.9	23.4	1.4	5.3	5.4
Incr Delay (d2), s/veh	8.4	0.1	3.9	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	3.1	2.9	3.2	3.3
LnGrp Delay(d),s/veh	34.8	26.1	27.3	1.6	5.6	5.6
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	35			1576	846	
Approach Delay, s/veh	34.5			4.8	5.6	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		49.7		5.9	11.4	38.2		
Change Period (Y+Rc), s		5.7		3.8	3.6	5.7		
Max Green Setting (Gmax), s		52.0		25.0	29.0	52.0		
Max Q Clear Time (g_c+I1), s		8.3		3.0	8.0	8.5		
Green Ext Time (p_c), s		24.0		0.1	0.3	24.0		

Intersection Summary	
HCM 2010 Ctrl Delay	5.5
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	60	140	80	50	10	160	1040	90	10	690	170
Future Volume (veh/h)	400	60	140	80	50	10	160	1040	90	10	690	170
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		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	426	64	45	190	119	19	182	1182	96	11	734	165
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.42	0.42	0.42	0.88	0.88	0.88	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	450	68	458	206	129	21	202	1283	104	14	807	181
Arrive On Green	0.29	0.29	0.29	0.20	0.20	0.19	0.11	0.39	0.37	0.01	0.28	0.27
Sat Flow, veh/h	1552	233	1580	1038	650	104	1774	3315	269	1774	2871	645
Grp Volume(v), veh/h	490	0	45	328	0	0	182	630	648	11	452	447
Grp Sat Flow(s),veh/h/ln	1785	0	1580	1792	0	0	1774	1770	1815	1774	1770	1746
Q Serve(g_s), s	36.9	0.0	2.9	24.6	0.0	0.0	13.9	46.6	46.8	0.8	33.9	33.9
Cycle Q Clear(g_c), s	36.9	0.0	2.9	24.6	0.0	0.0	13.9	46.6	46.8	0.8	33.9	33.9
Prop In Lane	0.87		1.00	0.58		0.06	1.00		0.15	1.00		0.37
Lane Grp Cap(c), veh/h	517	0	458	356	0	0	202	685	702	14	497	491
V/C Ratio(X)	0.95	0.00	0.10	0.92	0.00	0.00	0.90	0.92	0.92	0.80	0.91	0.91
Avail Cap(c_a), veh/h	517	0	458	360	0	0	202	685	702	78	519	513
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	47.7	0.0	35.6	53.9	0.0	0.0	60.1	40.1	40.3	68.0	47.7	48.0
Incr Delay (d2), s/veh	26.9	0.0	0.1	27.5	0.0	0.0	37.0	17.8	17.9	30.5	19.7	20.0
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	22.1	0.0	1.3	14.9	0.0	0.0	8.9	26.1	26.9	0.5	19.3	19.1
LnGrp Delay(d),s/veh	74.6	0.0	35.7	81.5	0.0	0.0	97.1	57.9	58.1	98.5	67.4	68.0
LnGrp LOS	E		D	F			F	E	E	F	E	E
Approach Vol, veh/h		535			328			1460			910	
Approach Delay, s/veh		71.3			81.5			62.9			68.0	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	57.1		31.3	19.6	42.6		43.8
Change Period (Y+Rc), s	3.7	5.7		4.6	3.7	5.7		5.3
Max Green Setting (Gmax), s	6.3	48.2		27.0	15.9	38.6		38.5
Max Q Clear Time (g_c+I1), s	2.8	48.8		26.6	15.9	35.9		38.9
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	30	250	330	30	60	360	1250	660	80	740	50
Future Volume (veh/h)	40	30	250	330	30	60	360	1250	660	80	740	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	33	23	223	223	54	391	1359	0	87	804	51
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	51	36	336	274	66	420	1901	850	112	1227	78
Arrive On Green	0.05	0.05	0.05	0.19	0.19	0.19	0.24	0.54	0.00	0.06	0.36	0.35
Sat Flow, veh/h	1774	1024	713	1774	1449	351	1774	3539	1583	1774	3379	214
Grp Volume(v), veh/h	43	0	56	223	0	277	391	1359	0	87	421	434
Grp Sat Flow(s),veh/h/ln	1774	0	1737	1774	0	1800	1774	1770	1583	1774	1770	1824
Q Serve(g_s), s	2.4	0.0	3.2	11.6	0.0	14.7	21.5	28.8	0.0	4.8	19.8	19.8
Cycle Q Clear(g_c), s	2.4	0.0	3.2	11.6	0.0	14.7	21.5	28.8	0.0	4.8	19.8	19.8
Prop In Lane	1.00		0.41	1.00		0.19	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	89	0	87	336	0	341	420	1901	850	112	643	662
V/C Ratio(X)	0.48	0.00	0.64	0.66	0.00	0.81	0.93	0.71	0.00	0.78	0.66	0.66
Avail Cap(c_a), veh/h	445	0	436	445	0	451	445	1901	850	445	740	763
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	0.0	46.5	37.5	0.0	38.7	37.2	17.3	0.0	46.0	26.5	26.6
Incr Delay (d2), s/veh	1.5	0.0	2.9	3.2	0.0	9.6	24.8	1.5	0.0	4.4	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(50%),veh/ln	1.2	0.0	1.6	6.0	0.0	8.2	13.4	14.4	0.0	2.5	10.1	10.4
LnGrp Delay(d),s/veh	47.6	0.0	49.4	40.7	0.0	48.3	62.0	18.8	0.0	50.4	28.7	28.8
LnGrp LOS	D		D	D		D	E	B		D	C	C
Approach Vol, veh/h		99			500			1750			942	
Approach Delay, s/veh		48.6			44.9			28.4			30.8	
Approach LOS		D			D			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	10.3	57.5		9.0	27.6	40.2		22.9
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	25.0	50.0		25.0	25.0	40.0		25.0
Max Q Clear Time (g_c+I1), s	16.8	30.8		5.2	23.5	21.8		16.7
Green Ext Time (p_c), s	0.1	16.5		0.2	0.1	12.6		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

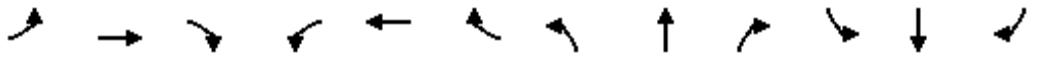
Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	730	50	10	340	50	10
Future Vol, veh/h	730	50	10	340	50	10
Conflicting Peds, #/hr	0	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	76	76	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	890	61	13	447	63	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	951	0	1395	923
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	474	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	722	-	156	327
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	721	-	153	326
Mov Cap-2 Maneuver	-	-	-	-	153	-
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	615	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	43
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	168	-	-	721	-
HCM Lane V/C Ratio	0.452	-	-	0.018	-
HCM Control Delay (s)	43	-	-	10.1	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	2.1	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	420	60	90	220	300	50	310	300	210	230	50
Future Volume (veh/h)	150	420	60	90	220	300	50	310	300	210	230	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	195	545	66	105	256	104	82	508	0	250	274	46
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.77	0.77	0.77	0.86	0.86	0.86	0.61	0.61	0.61	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	901	109	137	556	220	107	864	387	299	1071	177
Arrive On Green	0.14	0.28	0.26	0.08	0.22	0.21	0.06	0.24	0.00	0.17	0.35	0.33
Sat Flow, veh/h	1774	3180	384	1774	2477	979	1774	3539	1583	1774	3039	504
Grp Volume(v), veh/h	195	303	308	105	181	179	82	508	0	250	158	162
Grp Sat Flow(s),veh/h/ln	1774	1770	1794	1774	1770	1687	1774	1770	1583	1774	1770	1773
Q Serve(g_s), s	7.5	10.4	10.5	4.1	6.2	6.6	3.2	8.9	0.0	9.6	4.5	4.6
Cycle Q Clear(g_c), s	7.5	10.4	10.5	4.1	6.2	6.6	3.2	8.9	0.0	9.6	4.5	4.6
Prop In Lane	1.00		0.21	1.00		0.58	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	241	501	508	137	397	379	107	864	387	299	624	625
V/C Ratio(X)	0.81	0.60	0.61	0.77	0.46	0.47	0.77	0.59	0.00	0.84	0.25	0.26
Avail Cap(c_a), veh/h	503	1036	1050	503	1036	988	503	1822	815	503	911	912
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	21.8	22.0	31.9	23.6	24.1	32.7	23.5	0.0	28.4	16.2	16.4
Incr Delay (d2), s/veh	4.8	0.9	0.9	6.5	0.6	0.7	8.2	0.5	0.0	4.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	5.2	5.3	2.3	3.1	3.1	1.8	4.4	0.0	5.1	2.2	2.3
LnGrp Delay(d),s/veh	34.4	22.7	22.9	38.5	24.2	24.8	40.9	24.0	0.0	33.0	16.4	16.6
LnGrp LOS	C	C	C	D	C	C	D	C		C	B	B
Approach Vol, veh/h		806			465			590			570	
Approach Delay, s/veh		25.6			27.6			26.3			23.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	21.2	9.4	24.0	8.2	28.9	13.6	19.8
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	20.0	35.0	20.0	40.0	20.0	35.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	11.6	10.9	6.1	12.5	5.2	6.6	9.5	8.6
Green Ext Time (p_c), s	0.3	4.7	0.1	5.4	0.1	4.8	0.3	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	186	183	98.5%	70.7	9.9	E
	Through	1,377	1,384	100.5%	33.9	3.0	C
	Right Turn	171	170	99.4%	32.8	5.5	C
	Subtotal	1,734	1,737	100.2%	37.7	3.3	D
SB	Left Turn	150	147	98.1%	90.1	13.8	F
	Through	960	959	99.9%	42.8	7.0	D
	Right Turn	90	89	98.8%	39.6	8.6	D
	Subtotal	1,200	1,195	99.6%	48.3	6.7	D
EB	Left Turn	240	236	98.5%	83.7	24.6	F
	Through	130	123	94.8%	79.0	23.0	E
	Right Turn	450	445	98.9%	49.8	25.5	D
	Subtotal	820	805	98.1%	64.2	25.2	E
WB	Left Turn	111	113	101.5%	38.7	6.9	D
	Through	100	91	91.2%	108.3	47.4	F
	Right Turn	260	250	96.2%	97.5	56.2	F
	Subtotal	471	454	96.4%	84.2	39.2	F
Total		4,225	4,191	99.2%	51.0	7.4	D

Intersection 15 **El Dorado Hills Bld/US 50 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	983	962	97.8%	55.8	22.2	E
	Through	1,403	1,397	99.6%	16.3	2.4	B
	Right Turn	191	188	98.4%	13.6	2.4	B
	Subtotal	2,577	2,546	98.8%	31.5	9.3	C
SB	Left Turn	41	39	94.4%	99.5	28.2	F
	Through	1,213	1,196	98.6%	75.6	17.8	E
	Right Turn	271	274	101.2%	36.2	14.1	D
	Subtotal	1,525	1,509	98.9%	69.1	17.4	E
EB	Left Turn	251	255	101.6%	34.9	3.7	C
	Through	60	60	100.3%	37.1	9.5	D
	Right Turn	30	30	99.0%	0.9	0.1	A
	Subtotal	341	345	101.2%	32.7	4.1	C
WB	Left Turn	170	179	105.1%	41.5	6.7	D
	Through	60	62	102.5%	42.8	8.4	D
	Right Turn	80	81	100.9%	10.3	3.4	B
	Subtotal	310	321	103.5%	33.8	5.9	C
Total		4,753	4,721	99.3%	44.0	7.4	D

Intersection 16 **Latrobe Rd/US 50 EB Ramps-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	2,036	2,015	99.0%	16.9	4.1	B
	Right Turn	522	515	98.7%	17.2	3.9	B
	Subtotal	2,558	2,531	98.9%	16.9	3.9	B
SB	Left Turn	324	325	100.2%	25.7	1.8	C
	Through	1,090	1,077	98.8%	15.0	1.5	B
	Right Turn						
	Subtotal	1,414	1,402	99.1%	17.4	1.5	B
EB	Left Turn						
	Through						
	Right Turn	770	761	98.9%	33.1	8.2	C
	Subtotal	770	761	98.9%	33.1	8.2	C
WB	Left Turn						
	Through						
	Right Turn	540	537	99.5%	7.1	1.3	A
	Subtotal	540	537	99.5%	7.1	1.3	A
Total		5,282	5,231	99.0%	18.4	3.3	B

Intersection 17 **Latrobe Rd/Town Center Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	10	96.0%	56.0	17.2	E
	Through	1,732	1,699	98.1%	82.5	16.8	F
	Right Turn	91	90	98.8%	8.2	4.1	A
	Subtotal	1,833	1,799	98.1%	79.0	16.2	E
SB	Left Turn	457	447	97.8%	43.2	5.9	D
	Through	1,393	1,383	99.2%	13.8	2.5	B
	Right Turn	10	10	101.0%	1.4	1.0	A
	Subtotal	1,860	1,840	98.9%	21.2	3.3	C
EB	Left Turn	240	243	101.3%	33.6	4.3	C
	Through	30	26	87.7%	30.1	11.8	C
	Right Turn	90	90	99.7%	15.2	2.9	B
	Subtotal	360	359	99.8%	28.4	2.7	C
WB	Left Turn	71	76	106.5%	43.2	9.3	D
	Through	10	8	80.0%	47.7	28.7	D
	Right Turn	580	584	100.6%	18.0	3.6	B
	Subtotal	661	667	101.0%	21.4	4.8	C
Total		4,714	4,665	99.0%	44.4	6.4	D

Intersection 18 **Latrobe Rd/White Rock Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	63	64	100.8%	47.7	5.6	D
	Through	1,080	1,063	98.5%	33.1	7.4	C
	Right Turn	290	283	97.6%	19.2	5.4	B
	Subtotal	1,433	1,410	98.4%	30.8	6.7	C
SB	Left Turn	243	237	97.5%	42.1	9.7	D
	Through	890	888	99.8%	26.1	8.3	C
	Right Turn	420	420	100.1%	14.3	4.4	B
	Subtotal	1,553	1,546	99.5%	25.5	6.8	C
EB	Left Turn	550	550	100.0%	53.2	7.8	D
	Through	300	290	96.8%	34.3	3.2	C
	Right Turn	110	114	103.3%	23.2	4.1	C
	Subtotal	960	954	99.4%	43.7	4.2	D
WB	Left Turn	311	311	100.1%	35.7	3.2	D
	Through	330	327	99.1%	41.4	4.5	D
	Right Turn	200	193	96.4%	6.9	1.8	A
	Subtotal	841	831	98.8%	31.1	2.5	C
Total		4,787	4,741	99.0%	31.8	4.2	C

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	2	200	630	10	20	560	100	40	10	10	1	190	10	250
Future Volume (veh/h)	2	200	630	10	20	560	100	40	10	10	1	190	10	250
Number		5	2	12	1	6	16	7	4	14		3	8	18
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	1900		1863	1863	1900
Adj Flow Rate, veh/h		241	759	7	25	700	114	47	12	0		207	11	26
Adj No. of Lanes		1	2	1	1	2	0	1	1	0		1	1	0
Peak Hour Factor		0.83	0.83	0.83	0.80	0.80	0.80	0.86	0.86	0.86		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2		2	2	2
Cap, veh/h		263	2526	1129	38	1789	291	76	43	0		239	51	120
Arrive On Green		0.15	0.71	0.71	0.02	0.59	0.57	0.04	0.02	0.00		0.13	0.10	0.10
Sat Flow, veh/h		1774	3539	1581	1774	3048	496	1774	1863	0		1774	491	1159
Grp Volume(v), veh/h		241	759	7	25	406	408	47	12	0		207	0	37
Grp Sat Flow(s),veh/h/ln		1774	1770	1581	1774	1770	1774	1774	1863	0		1774	0	1650
Q Serve(g_s), s		18.1	10.5	0.2	1.9	16.6	16.8	3.5	0.9	0.0		15.4	0.0	2.8
Cycle Q Clear(g_c), s		18.1	10.5	0.2	1.9	16.6	16.8	3.5	0.9	0.0		15.4	0.0	2.8
Prop In Lane		1.00		1.00	1.00		0.28	1.00		0.00		1.00		0.70
Lane Grp Cap(c), veh/h		263	2526	1129	38	1038	1041	76	43	0		239	0	171
V/C Ratio(X)		0.92	0.30	0.01	0.66	0.39	0.39	0.62	0.28	0.00		0.87	0.00	0.22
Avail Cap(c_a), veh/h		263	2526	1129	79	1038	1041	197	338	0		302	0	379
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)		0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	0.00		1.00	0.00	1.00
Uniform Delay (d), s/veh		56.7	7.0	5.6	65.6	15.0	15.1	63.5	64.9	0.0		57.2	0.0	55.6
Incr Delay (d2), s/veh		27.8	0.2	0.0	7.2	1.1	1.1	3.0	3.5	0.0		18.8	0.0	0.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.9	5.1	0.1	1.0	8.4	8.5	1.8	0.5	0.0		8.8	0.0	1.3
LnGrp Delay(d),s/veh		84.5	7.3	5.6	72.8	16.1	16.2	66.6	68.4	0.0		76.0	0.0	56.3
LnGrp LOS		F	A	A	E	B	B	E	E			E		E
Approach Vol, veh/h			1007			839			59				244	
Approach Delay, s/veh			25.7			17.8			66.9				73.0	
Approach LOS			C			B			E				E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	100.4	22.2	5.6	24.0	83.2	9.8	18.0
Change Period (Y+Rc), s	4.5	6.0	4.5	4.5	* 5.2	6.0	* 5.2	4.5
Max Green Setting (Gmax), s	5.5	65.0	22.5	22.5	* 19	51.0	* 14	30.5
Max Q Clear Time (g_c+I1), s	3.9	12.5	17.4	2.9	20.1	18.8	5.5	4.8
Green Ext Time (p_c), s	0.0	18.1	0.3	0.2	0.0	15.1	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	410	120	180	440	110	90	40	140	130	40	50
Future Volume (veh/h)	50	410	120	180	440	110	90	40	140	130	40	50
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	55	451	125	231	564	136	111	49	62	144	44	20
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.78	0.78	0.78	0.81	0.81	0.81	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	603	167	262	776	187	192	81	102	212	145	66
Arrive On Green	0.03	0.43	0.41	0.15	0.54	0.52	0.11	0.11	0.11	0.12	0.12	0.12
Sat Flow, veh/h	1774	1404	389	1774	1450	350	1774	744	942	1774	1210	550
Grp Volume(v), veh/h	55	0	576	231	0	700	111	0	111	144	0	64
Grp Sat Flow(s),veh/h/ln	1774	0	1793	1774	0	1800	1774	0	1686	1774	0	1760
Q Serve(g_s), s	2.5	0.0	22.3	10.5	0.0	24.4	4.9	0.0	5.2	6.4	0.0	2.7
Cycle Q Clear(g_c), s	2.5	0.0	22.3	10.5	0.0	24.4	4.9	0.0	5.2	6.4	0.0	2.7
Prop In Lane	1.00		0.22	1.00		0.19	1.00		0.56	1.00		0.31
Lane Grp Cap(c), veh/h	60	0	770	262	0	963	192	0	183	212	0	211
V/C Ratio(X)	0.92	0.00	0.75	0.88	0.00	0.73	0.58	0.00	0.61	0.68	0.00	0.30
Avail Cap(c_a), veh/h	529	0	1025	529	0	1014	760	0	722	760	0	754
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.6	0.0	19.9	34.3	0.0	14.6	34.9	0.0	35.0	34.7	0.0	33.1
Incr Delay (d2), s/veh	17.9	0.0	2.5	3.8	0.0	2.5	3.4	0.0	4.0	4.7	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	11.4	5.4	0.0	12.7	2.6	0.0	2.6	3.4	0.0	1.4
LnGrp Delay(d),s/veh	57.5	0.0	22.4	38.1	0.0	17.2	38.3	0.0	39.1	39.3	0.0	34.1
LnGrp LOS	E		C	D		B	D		D	D		C
Approach Vol, veh/h		631			931			222			208	
Approach Delay, s/veh		25.5			22.4			38.7			37.7	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	48.7		12.9	16.1	39.3		13.8
Change Period (Y+Rc), s	3.5	* 6		* 4.2	3.5	6.0		4.2
Max Green Setting (Gmax), s	25.0	* 45		* 35	25.0	45.0		35.0
Max Q Clear Time (g_c+I1), s	4.5	26.4		7.2	12.5	24.3		8.4
Green Ext Time (p_c), s	0.0	8.6		1.2	0.2	9.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	30	40	1410	840	10
Future Vol, veh/h	0	30	40	1410	840	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	33	43	1533	913	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	462	924	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	547	735	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	547	735	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	735	-	547	-	-
HCM Lane V/C Ratio	0.059	-	0.06	-	-
HCM Control Delay (s)	10.2	-	12	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	20	1260	90	40	860
Future Vol, veh/h	0	20	1260	90	40	860
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	22	1370	98	43	935

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	734	0	0	1467	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	363	-	-	456	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	363	-	-	456	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	363	456	-
HCM Lane V/C Ratio	-	-	0.06	0.095	-
HCM Control Delay (s)	-	-	15.5	13.7	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.3	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	760	30	20	360	10	0	0	20	0	0	60
Future Vol, veh/h	0	760	30	20	360	10	0	0	20	0	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	826	33	22	391	11	0	0	22	0	0	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	859	0	0	-	-	842	-	-	397
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	-	-	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.218	-	-	-	-	3.318	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	782	-	-	0	0	364	0	0	652
Stage 1	0	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	782	-	-	-	-	364	-	-	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	15.5	11.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	364	-	-	782	-	-	652
HCM Lane V/C Ratio	0.06	-	-	0.028	-	-	0.1
HCM Control Delay (s)	15.5	-	-	9.7	-	-	11.1
HCM Lane LOS	C	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	-	0.3

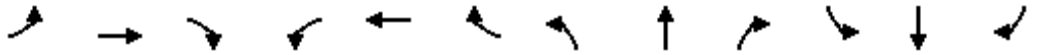
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	590	350	30	10	10
Future Vol, veh/h	20	590	350	30	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	641	380	33	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	413	0	-	0	761	207
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1142	-	-	-	342	799
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1142	-	-	-	335	799
Mov Cap-2 Maneuver	-	-	-	-	335	-
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	660	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1142	-	-	-	472
HCM Lane V/C Ratio	0.019	-	-	-	0.046
HCM Control Delay (s)	8.2	-	-	-	13
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	600	0	290	90	910	0	0	300	130
Future Volume (veh/h)	0	0	0	600	0	290	90	910	0	0	300	130
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				667	0	204	97	978	0	0	345	25
Adj No. of Lanes				2	0	1	1	2	0	0	2	1
Peak Hour Factor				0.90	0.90	0.90	0.93	0.93	0.93	0.87	0.87	0.87
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				994	0	444	250	1879	0	0	1010	452
Arrive On Green				0.27	0.00	0.27	0.14	0.52	0.00	0.00	0.28	0.28
Sat Flow, veh/h				3619	0	1615	1810	3705	0	0	3705	1615
Grp Volume(v), veh/h				667	0	204	97	978	0	0	345	25
Grp Sat Flow(s),veh/h/ln				1810	0	1615	1810	1805	0	0	1805	1615
Q Serve(g_s), s				6.4	0.0	4.1	1.9	7.0	0.0	0.0	3.0	0.4
Cycle Q Clear(g_c), s				6.4	0.0	4.1	1.9	7.0	0.0	0.0	3.0	0.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				994	0	444	250	1879	0	0	1010	452
V/C Ratio(X)				0.67	0.00	0.46	0.39	0.52	0.00	0.00	0.34	0.06
Avail Cap(c_a), veh/h				2946	0	1314	1167	4879	0	0	4879	2183
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				12.6	0.0	11.8	15.3	6.2	0.0	0.0	11.2	10.3
Incr Delay (d2), s/veh				0.3	0.0	0.3	0.4	0.1	0.0	0.0	0.1	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
%ile BackOfQ(50%),veh/ln				3.2	0.0	1.8	1.0	3.4	0.0	0.0	1.5	0.2
LnGrp Delay(d),s/veh				12.9	0.0	12.0	15.7	6.2	0.0	0.0	11.3	10.3
LnGrp LOS				B		B	B	A			B	B
Approach Vol, veh/h					871			1075			370	
Approach Delay, s/veh					12.7			7.1			11.2	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		24.3			9.4	14.9		14.7
Change Period (Y+Rc), s		6.8			* 4.2	6.8		5.8
Max Green Setting (Gmax), s		50.0			* 25	50.0		30.0
Max Q Clear Time (g_c+I1), s		9.0			3.9	5.0		8.4
Green Ext Time (p_c), s		3.2			0.1	3.2		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	390	70	260	610	770	130
Future Volume (veh/h)	390	70	260	610	770	130
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	438	19	283	663	811	45
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	0.89	0.89	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	757	338	601	2237	1311	586
Arrive On Green	0.21	0.21	0.17	0.62	0.36	0.36
Sat Flow, veh/h	3619	1615	3510	3705	3705	1615
Grp Volume(v), veh/h	438	19	283	663	811	45
Grp Sat Flow(s),veh/h/ln	1810	1615	1755	1805	1805	1615
Q Serve(g_s), s	5.1	0.4	3.4	4.0	8.6	0.9
Cycle Q Clear(g_c), s	5.1	0.4	3.4	4.0	8.6	0.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	757	338	601	2237	1311	586
V/C Ratio(X)	0.58	0.06	0.47	0.30	0.62	0.08
Avail Cap(c_a), veh/h	2075	926	2268	4077	4077	1824
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	16.6	14.8	17.5	4.1	12.2	9.8
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.4	1.7	1.9	4.3	0.4
LnGrp Delay(d),s/veh	16.9	14.8	17.7	4.2	12.4	9.8
LnGrp LOS	B	B	B	A	B	A
Approach Vol, veh/h	457			946	856	
Approach Delay, s/veh	16.8			8.2	12.3	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		33.0		13.8	12.0	21.0		
Change Period (Y+Rc), s		6.8		5.8	* 4.2	6.8		
Max Green Setting (Gmax), s		50.0		25.0	* 30	50.0		
Max Q Clear Time (g_c+I1), s		6.0		7.1	5.4	10.6		
Green Ext Time (p_c), s		3.5		0.8	0.5	3.5		

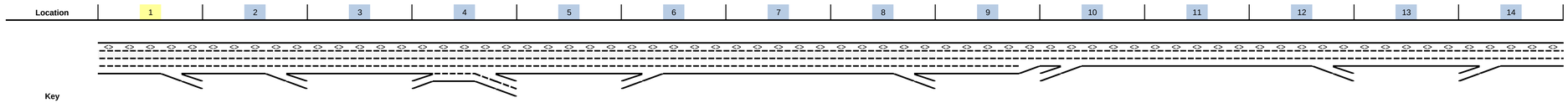
Intersection Summary	
HCM 2010 Ctrl Delay	11.5
HCM 2010 LOS	B

Notes

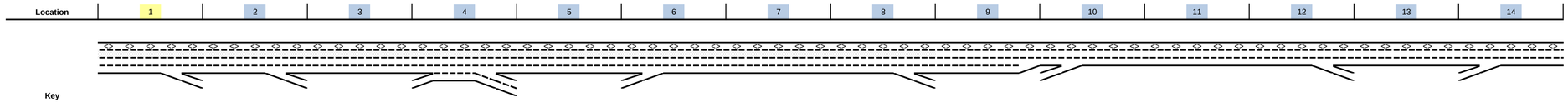
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Project: Central El Dorado Hills Specific Plan **Alternative:** Measure E Plus Project
Freeway Corridor: Eastbound US 50 **Time Period:** AM Peak Hour

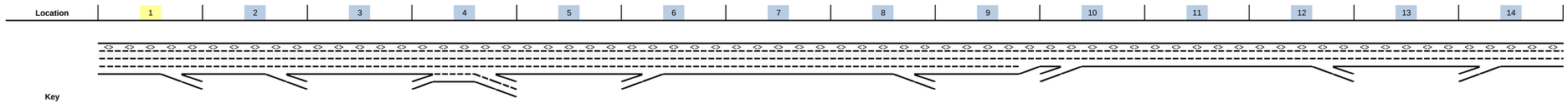
Data Entry Value
Calculated Value



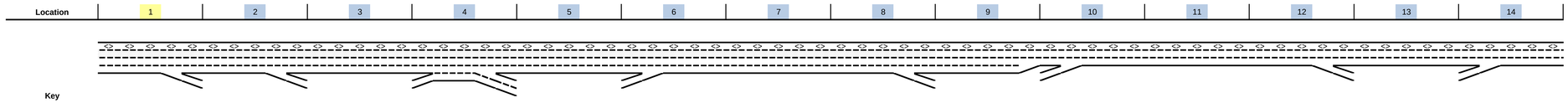
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Define Freeway Segment														
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	850	1,975	3,000	1,575	1,500	2,925	1,500	2,100	1,500	3,300	1,500	1,350	1,500
Accel Length						550				500				500
Decel Length	150	150						150				150		
Mainline Volume	2,550	1,496	1,366	1,366	1,637	1,637	2,167	2,167	1,887	1,887	2,097	2,097	1,877	1,877
On Ramp Volume				391		530				210				470
Off Ramp Volume	1,054	130		120				280				220		
Express Lane Volume	128	75	68	68	82	82	108	108	94	94	105	105	94	94
EL On Ramp Volume														
EL Off Ramp Volume														
Calculate Flow Rate in General Purpose Lanes (GP)														
GP Volume (vph)	2,423	1,421	1,298	1,689	1,555	2,085	2,059	2,059	1,793	2,003	1,992	1,992	1,783	2,253
PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
GP Lanes	3	3	3	4	3	3	3	3	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	5.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.980	0.980	0.980	0.980	0.980	0.980	0.862	0.980	0.980	0.980	0.980	0.980	0.980	0.980
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,840	1,666	1,521	1,980	1,823	2,445	2,745	2,414	2,102	2,348	2,336	2,336	2,091	2,642
GP Flow (pcphpl)	947	555	507	495	608	815	915	805	701	1,174	1,168	1,168	1,045	1,321
Calculate Speed in General Purpose Lanes														
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12	
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6	69.6	
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes														
v/c ratio	0.40	0.24	0.22	0.21	0.26	0.35	0.39	0.34	0.30	0.50	0.50	0.50	0.44	0.56
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Density (pcphpl)	14.6	8.5	7.8	7.6	9.4	12.5	14.1	12.4	10.8	18.1	18.0	18.0	16.1	20.3
LOS	B	A	A	A	A	B	B	B	A	C	B	B	B	C
Calculate Operations for Entering GP Lanes														
GP_{IN} Vol (pcph)				1,551		1,860				2,049				2,123
GP_{IN} Cap (pcph)				7,050		7,050				4,700				4,700
GP_{IN} v/c ratio				0.22		0.26				0.44				0.45
Calculate Operations for Exiting GP Lanes														
GP_{OUT} Vol (pcph)	1,683	1,524		1,849				2,031	2,102			2,091		
GP_{OUT} Cap (pcph)	7,050	7,050		7,050				7,050	4,700			4,700		
GP_{OUT} v/c ratio	0.24	0.22		0.26				0.29	0.45			0.44		



Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Flow Rate in Express Lanes (EL)														
EL Volume (vph)	128	75	68	68	82	82	108	108	94	94	105	105	94	94
PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	165	97	88	88	106	106	151	140	122	122	136	136	122	122
EL Flow (pcphpl)	165	97	88	88	106	106	151	140	122	122	136	136	122	122
Calculate Speed in Express Lanes														
Lane Width (ft)														
Shoulder Width														
TRD														
f_{LW}														
f_{LC}														
Calc'd FFS														
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes														
EL_{IN} v/c ratio	0.09	0.06	0.05	0.05	0.06	0.06	0.09	0.08	0.07	0.07	0.08	0.08	0.07	0.07
Calculate On Ramp Flow Rate														
On Volume (vph)				391		530				210				470
PHF				0.92		0.92				0.71				0.92
Total Lanes				1		1				1				1
Terrain				Level		Level				Level				Level
Grade %				0.0%		0.0%				0.0%				0.0%
Grade Length (mi)				0.00		0.00				0.00				0.00
Truck & Bus %				2.0%		3.0%				2.0%				3.0%
RV %				0.0%		0.0%				0.0%				0.0%
E_T				1.5		1.5				1.5				1.5
E_R				1.2		1.2				1.2				1.2
f_{HV}				0.990		0.985				0.990				0.985
f_p				1.00		1.00				1.00				1.00
On Flow (pcph)				429		585				299				519
On Flow (pcphpl)				429		585				299				519
Calculate On Ramp Roadway Operations														
On Ramp Type				Right		Right				Right				Right
On Ramp Speed (mph)				45		25				45				25
On Ramp Cap (pcph)				2,100		1,900				2,100				1,900
On Ramp v/c ratio				0.20		0.31				0.14				0.27



Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Off Ramp Flow Rate														
Off Volume (vph)	1,054	130		120				280				220		
PHF	0.92	0.92		0.94				0.74				0.91		
Total Lanes	1	1		2				1				1		
Terrain	Level	Level		Level				Level				Level		
Grade %	0.0%	0.0%		0.0%				0.0%				0.0%		
Grade Length (mi)	0.00	0.00		0.00				0.00				0.00		
Truck & Bus %	2.0%	2.0%		5.0%				2.0%				2.0%		
RV %	0.0%	0.0%		0.0%				0.0%				0.0%		
E_T	1.5	1.5		1.5				1.5				1.5		
E_R	1.2	1.2		1.2				1.2				1.2		
f_{HV}	0.990	0.990		0.976				0.990				0.990		
f_p	1.00	1.00		1.00				1.00				1.00		
Off Flow (pcph)	1,157	143		131				382				244		
Off Flow (pcphpl)	1,157	143		65				382				244		
Calculate Off Ramp Roadway Operations														
Off Ramp Type	Right	Right		Right				Right				Right		
Off Ramp Speed	45	25		45				45				45		
Off Ramp Cap (pcph)	2,100	1,900		4,200				2,100				2,100		
Off Ramp v/c ratio	0.55	0.08		0.03				0.18				0.12		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps														
Up Type		Off				No		No						
Up Distance		2,350												
Up Flow (pcph)		1,157												
Down Type	Off	On				On		On						
Down Distance	850	1,975				3,600		2,100						
Down Flow (pcph)	143	429				299		299						
Calculate Merge Influence Area Operations														
Effective v_P (pcph)						1,860				2,049				2,123
Up Ramp L_{EQ}														
Down Ramp L_{EQ}						1,773								
P_{FM} (Eqn 13-3)						0.593				0.592				0.592
P_{FM} (Eqn 13-4)		#VALUE!												
P_{FM} (Eqn 13-5)	0.593													
P_{FM}						0.593				1.000				1.000
v_{12} (pcph)						1,103				2,049				2,123
v_3 (pcph)						757								
v_{34} (pcph)														
v_{12a} (pcph)						1,103				2,049				2,123
v_{R12a} (pcph)						1,687				2,348				2,642
Merge Speed Index						0.31				0.32				0.35
Merge Area Speed						57.8				57.7				56.9
Outer Lanes Volume						757								
Outer Lanes Speed						64.1								
Segment Speed						59.6				57.7				56.9
Merge v/c ratio						0.37				0.51				0.57
Merge Density						14.9				20.5				22.7
Merge LOS						B				C				C



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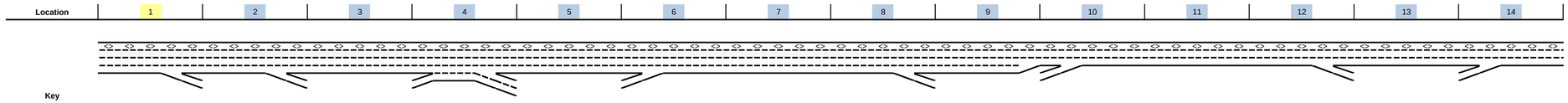
Calculate Diverge Influence Area Operations														
Effective v_P (pcph)	2,840	1,666						2,414				2,336		
Up Ramp L_{EQ}		11,750												
Down Ramp L_{EQ}	226	411						321						
P_{FD} (Eqn 13-9)	0.636	0.712						0.682				0.690		
P_{FD} (Eqn 13-10)														
P_{FD} (Eqn 13-11)	0.577													
P_{FD}	0.636	0.712						0.682				1.000		
v_{12} (pcph)	2,227	1,227						1,768				2,336		
v_3 (pcph)	613	439						646						
v_{34} (pcph)														
v_{12a} (pcph)	2,227	1,227						1,768				2,336		
Diverge Speed Index	0.40	0.57						0.33				0.32		
Diverge Area Speed	55.8	51.9						57.4				57.6		
Outer Lanes Volume	613	439						646						
Outer Lanes Speed	71.3	71.3						71.3						
Segment Speed	58.5	55.9						60.5				57.6		
Diverge v/c ratio	0.51	0.28						0.40				0.53		
Diverge Density	22.1	13.5						18.1				23.0		
Diverge LOS	C	B						B				C		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments														
On to Off Volume (vph)				78										
PHF				0.87										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				3.5%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.983										
f_P				1.00										
On to Off Flow (pcph)				91										
Calculate On Ramp to Mainline Flow Rate for Weave Segments														
On to ML Volume (vph)				313										
PHF				0.92										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				2.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.990										
f_P				1.00										
On to ML Flow (pcph)				343										
Calculate Mainline to Off Ramp Flow Rate for Weave Segments														
ML to Off Volume (vph)				42										
PHF				0.94										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				5.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.976										
f_P				1.00										
ML to Off Flow (pcph)				46										



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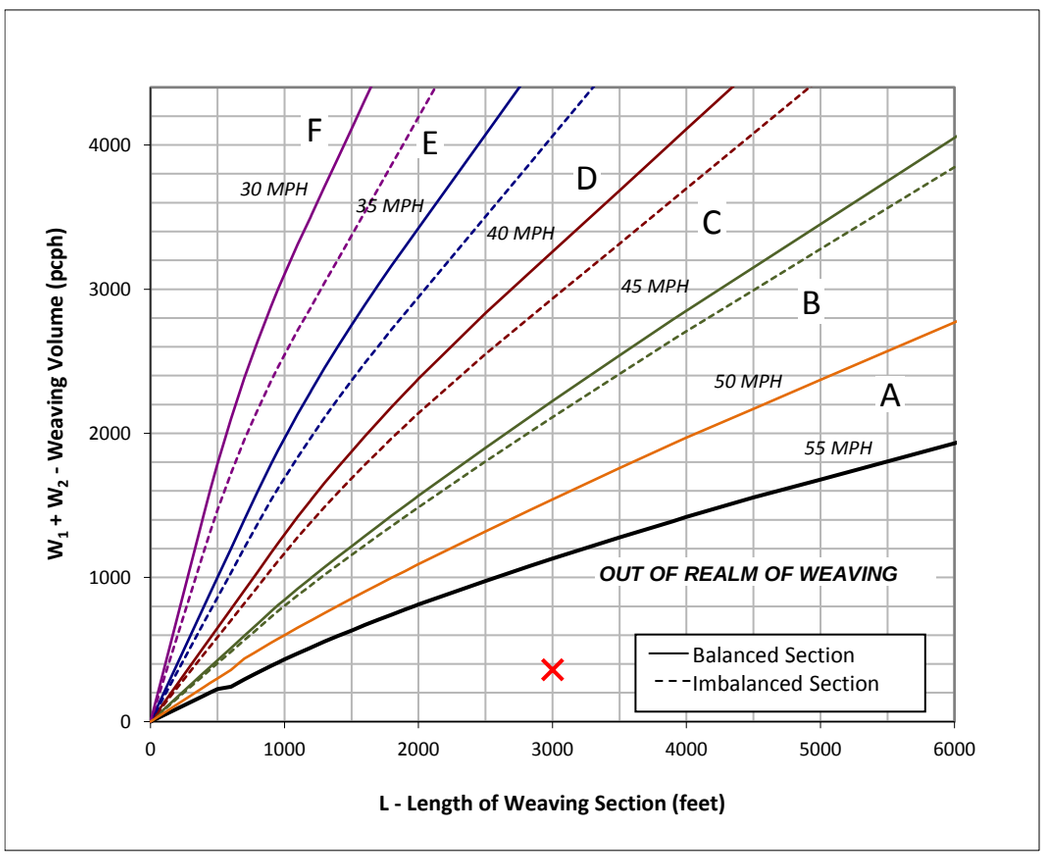
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments														
GP to GP Volume (vph)				1,256										
PHF				0.87										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				4.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.980										
f_p				1.00										
GP to GP Flow (pcph)				1,472										
Calculate Weave Segment Operations														
Weave Type				One-sided										
Weave Length				2,000										
Segment Lanes				3										
Weave Lanes				2										
Weave Flow (pcph)				389										
Non-Weave Flow				1,564										
Segment Flow				1,953										
Max Weave Length				4,528										
Length Check				OK										
Ideal Weave Capacity				2,157										
f_{HV}				0.982										
f_p				0.998										
Capacity Condition 1				6,343										
Capacity Condition 2				11,813										
Weave v/c ratio				0.30										
Interchange Density				2										
Lane Changes On to ML				1										
Lane Changes ML to Off				0										
Lane Changes On to Off				0										
Min Lane Change Rate				343										
Weave LC Rate				977										
Non-Weave LC Rate 1				828										
Non-Weave LC Rate 2				2,038										
Non-Weave LC Rate 3				-427										
Segment LC Rate				1,805										
Weave Intensity Factor				0.208										
Weave Speed				56.4										
Non-Weave Speed				59.4										
Segment Speed				58.8										
Weave Density				11.1										
Weave LOS				B										
Summarize Segment Operations														
Segment v/c ratio	0.51	0.28	0.22	0.30	0.26	0.37	0.39	0.40	0.30	0.51	0.50	0.53	0.44	0.57
Segment Density	22.1	13.5	7.8	11.1	9.4	14.9	14.1	18.1	10.8	20.5	18.0	23.0	16.1	22.7
Segment LOS	C	B	A	B	A	B	B	B	A	C	B	C	B	C
Over Capacity														

Leisch Method for Weaving Analysis

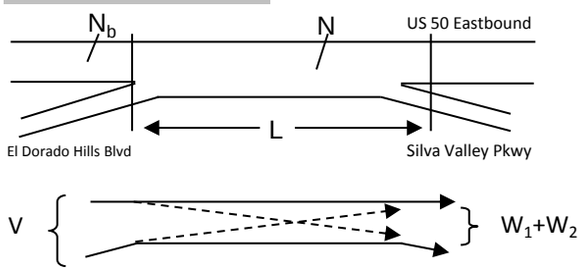
Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,000

Project Information	
Project	Central El Dorado Hills SP
Scenario	Near-Term Plus Project AM Peak Hour
Freeway	US 50 Eastbound
On-ramp	El Dorado Hills Blvd
Off-ramp	Silva Valley Pkwy

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	1,757	Volume (vph)*	313	Volume (vph)*	42
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	5%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	1,792	Volume (pcph)	316	Volume (pcph)	43



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)?	Y
If optional exit lane, then "Y". Otherwise "N".	
2. In the chart to the left, which two speed curves is the red "x" between?	**55 MPH** and -
If left of the 30 MPH curve, LOS is F. Select "-".	
If below the 55 MPH curve, out of the realm of weaving.	
3. Interpolated Weaving Speed (S_w, mph)	-
4. Weaving Intensity Factor (k)	-
5. Service Volume (SV, pcph)	
SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	-
6. Level of Service (LOS)	F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

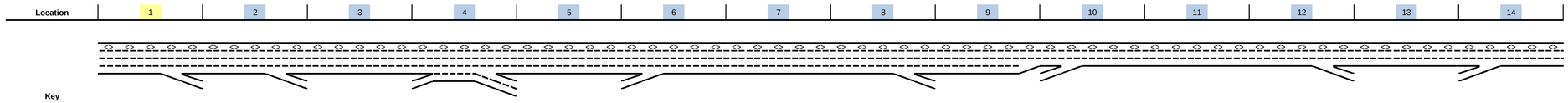
Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Project: Central El Dorado Hills Specific Plan **Alternative:** Near Term Plus Project Conditions

Freeway Corridor: Eastbound US 50 **Time Period:** PM Peak Hour

Data Entry Value

Calculated Value



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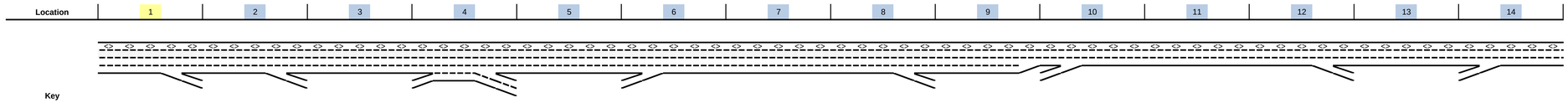
Define Freeway Segment														
Type	Diverge	Diverge	Basic	Weave	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge
Length (ft)	1,500	850	1,975	3,000	1,575	1,500	2,925	1,500	2,100	1,500	3,300	1,500	1,350	1,500
Accel Length						550				500				500
Decel Length	150	150						150				150		
Mainline Volume	4,420	3,650	3,110	3,110	3,495	3,495	3,885	3,885	3,265	3,265	3,405	3,405	2,815	2,815
On Ramp Volume				845		390				140				360
Off Ramp Volume	770	540		460				620				590		
Express Lane Volume	486	402	342	342	384	384	427	427	359	359	375	375	310	310
EL On Ramp Volume														
EL Off Ramp Volume														
Calculate Flow Rate in General Purpose Lanes (GP)														
GP Volume (vph)	3,934	3,249	2,768	3,613	3,111	3,501	3,458	3,458	2,906	3,046	3,030	3,030	2,505	2,865
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	0.97	0.97
GP Lanes	3	3	3	4	3	3	3	3	3	2	2	2	2	2
Terrain	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	6.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.952	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	4,076	3,366	2,868	3,743	3,223	3,627	3,743	3,582	3,011	3,156	3,140	3,140	2,596	2,969
GP Flow (pcphpl)	1,359	1,122	956	936	1,074	1,209	1,248	1,194	1,004	1,578	1,570	1,570	1,298	1,484
Calculate Speed in General Purpose Lanes														
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	67.3	67.3	67.3	67.3	67.3	67.3	67.3	69.6	69.6	69.6	69.6	69.6	69.6	69.6
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes														
v/c ratio	0.58	0.48	0.41	0.40	0.46	0.51	0.53	0.51	0.43	0.67	0.67	0.67	0.55	0.63
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	64.6	64.6	64.6	65.0	64.9
Density (pcphpl)	20.9	17.3	14.7	14.4	16.5	18.6	19.2	18.4	15.4	24.4	24.3	24.3	20.0	22.9
LOS	C	B	B	B	B	C	C	C	B	C	C	C	C	C
Calculate Operations for Entering GP Lanes														
GP_{IN} Vol (pcph)				2,868		3,111				2,985				2,574
GP_{IN} Cap (pcph)				7,050		7,050				4,700				4,700
GP_{IN} v/c ratio				0.41		0.44				0.64				0.55
Calculate Operations for Exiting GP Lanes														
GP_{OUT} Vol (pcph)	3,278	2,806		3,226				2,937	3,011			2,492		
GP_{OUT} Cap (pcph)	7,050	7,050		7,050				7,050	4,700			4,700		
GP_{OUT} v/c ratio	0.46	0.40		0.46				0.42	0.64			0.53		



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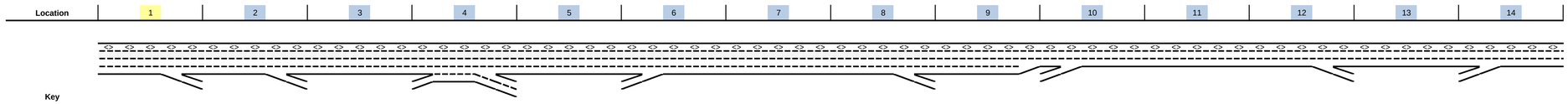
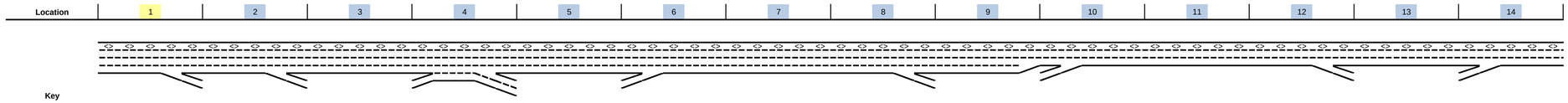
Calculate Flow Rate in Express Lanes (EL)														
EL Volume (vph)	486	402	342	342	384	384	427	427	359	359	375	375	310	310
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	5.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	6.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.917	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	546	451	384	384	431	431	518	480	403	403	420	420	347	347
EL Flow (pcphpl)	546	451	384	384	431	431	518	480	403	403	420	420	347	347
Calculate Speed in Express Lanes														
Lane Width (ft)														
Shoulder Width														
TRD														
f_{LW}														
f_{LC}														
Calc'd FFS														
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes														
EL_{IN} v/c ratio	0.31	0.26	0.22	0.22	0.25	0.25	0.30	0.27	0.23	0.23	0.24	0.24	0.20	0.20
Calculate On Ramp Flow Rate														
On Volume (vph)				845		390				140				360
PHF				0.97		0.76				0.83				0.92
Total Lanes				1		1				1				1
Terrain				Level		Level				Level				Level
Grade %				0.0%		0.0%				0.0%				0.0%
Grade Length (mi)				0.00		0.00				0.00				0.00
Truck & Bus %				1.0%		1.0%				2.0%				2.0%
RV %				0.0%		0.0%				0.0%				0.0%
E_T				1.5		1.5				1.5				1.5
E_R				1.2		1.2				1.2				1.2
f_{HV}				0.995		0.995				0.990				0.990
f_p				1.00		1.00				1.00				1.00
On Flow (pcph)				875		516				170				395
On Flow (pcphpl)				875		516				170				395
Calculate On Ramp Roadway Operations														
On Ramp Type				Right		Right				Right				Right
On Ramp Speed (mph)				45		25				45				25
On Ramp Cap (pcph)				2,100		1,900				2,100				1,900
On Ramp v/c ratio				0.42		0.27				0.08				0.21



Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Off Ramp Flow Rate														
Off Volume (vph)	770	540		460				620				590		
PHF	0.97	0.97		0.89				0.97				0.92		
Total Lanes	1	1		2				1				1		
Terrain	Level	Level		Level				Level				Level		
Grade %	0.0%	0.0%		0.0%				0.0%				0.0%		
Grade Length (mi)	0.00	0.00		0.00				0.00				0.00		
Truck & Bus %	1.0%	1.0%		0.0%				2.0%				2.0%		
RV %	0.0%	0.0%		0.0%				0.0%				0.0%		
E_T	1.5	1.5		1.5				1.5				1.5		
E_R	1.2	1.2		1.2				1.2				1.2		
f_{HV}	0.995	0.995		1.000				0.990				0.990		
f_p	1.00	1.00		1.00				1.00				1.00		
Off Flow (pcph)	798	559		517				646				648		
Off Flow (pcphpl)	798	559		258				646				648		
Calculate Off Ramp Roadway Operations														
Off Ramp Type	Right	Right		Right				Right				Right		
Off Ramp Speed	45	25		45				45				45		
Off Ramp Cap (pcph)	2,100	1,900		4,200				2,100				2,100		
Off Ramp v/c ratio	0.38	0.29		0.12				0.31				0.31		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps														
Up Type		Off				No		No						
Up Distance		2,350												
Up Flow (pcph)		798												
Down Type	Off	On				On		On						
Down Distance	850	1,975				3,600		2,100						
Down Flow (pcph)	559	875				170		170						
Calculate Merge Influence Area Operations														
Effective v_P (pcph)						3,111				2,985				2,574
Up Ramp L_{EQ}														
Down Ramp L_{EQ}						1,011								
P_{FM} (Eqn 13-3)						0.593				0.592				0.592
P_{FM} (Eqn 13-4)		#VALUE!												
P_{FM} (Eqn 13-5)	0.722													
P_{FM}						0.593				1.000				1.000
v_{12} (pcph)						1,845				2,985				2,574
v_3 (pcph)						1,267								
v_{34} (pcph)														
v_{12a} (pcph)						1,845				2,985				2,574
v_{R12a} (pcph)						2,360				3,156				2,969
Merge Speed Index						0.33				0.37				0.37
Merge Area Speed						57.3				56.5				56.4
Outer Lanes Volume						1,267								
Outer Lanes Speed						62.2								
Segment Speed						58.9				56.5				56.4
Merge v/c ratio						0.51				0.69				0.65
Merge Density						20.2				26.9				25.3
Merge LOS						C				C				C

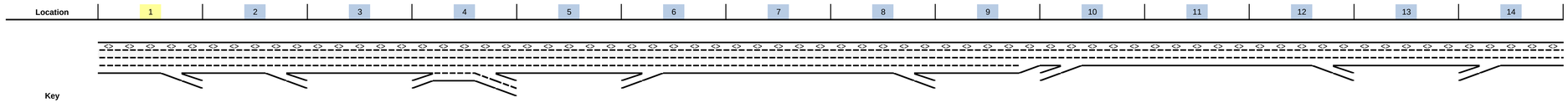


Key

<> Express Lane (HOV)

No Trucks

Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate Diverge Influence Area Operations														
Effective v_P (pcph)	4,076	3,366						3,582				3,140		
Up Ramp L_{EQ}		7,534												
Down Ramp L_{EQ}	771	1,047						214						
P_{FD} (Eqn 13-9)	0.621	0.650						0.641				0.652		
P_{FD} (Eqn 13-10)														
P_{FD} (Eqn 13-11)	0.613													
P_{FD}	0.621	0.650						0.641				1.000		
v_{12} (pcph)	2,835	2,384						2,527				3,140		
v_3 (pcph)	1,241	982						1,055						
v_{34} (pcph)														
v_{12a} (pcph)	2,835	2,384						2,527				3,140		
Diverge Speed Index	0.37	0.61						0.36				0.36		
Diverge Area Speed	56.5	51.0						56.8				56.8		
Outer Lanes Volume	1,241	982						1,055						
Outer Lanes Speed	70.4	71.3						71.1						
Segment Speed	60.1	55.6						60.4				56.8		
Diverge v/c ratio	0.64	0.54						0.57				0.71		
Diverge Density	27.3	23.4						24.6				29.9		
Diverge LOS	C	C						C				D		
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments														
On to Off Volume (vph)				158										
PHF				0.97										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				0.5%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.998										
f_P				1.00										
On to Off Flow (pcph)				163										
Calculate On Ramp to Mainline Flow Rate for Weave Segments														
On to ML Volume (vph)				687										
PHF				0.97										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				1.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.995										
f_P				1.00										
On to ML Flow (pcph)				712										
Calculate Mainline to Off Ramp Flow Rate for Weave Segments														
ML to Off Volume (vph)				302										
PHF				0.89										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				0.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				1.000										
f_P				1.00										
ML to Off Flow (pcph)				339										



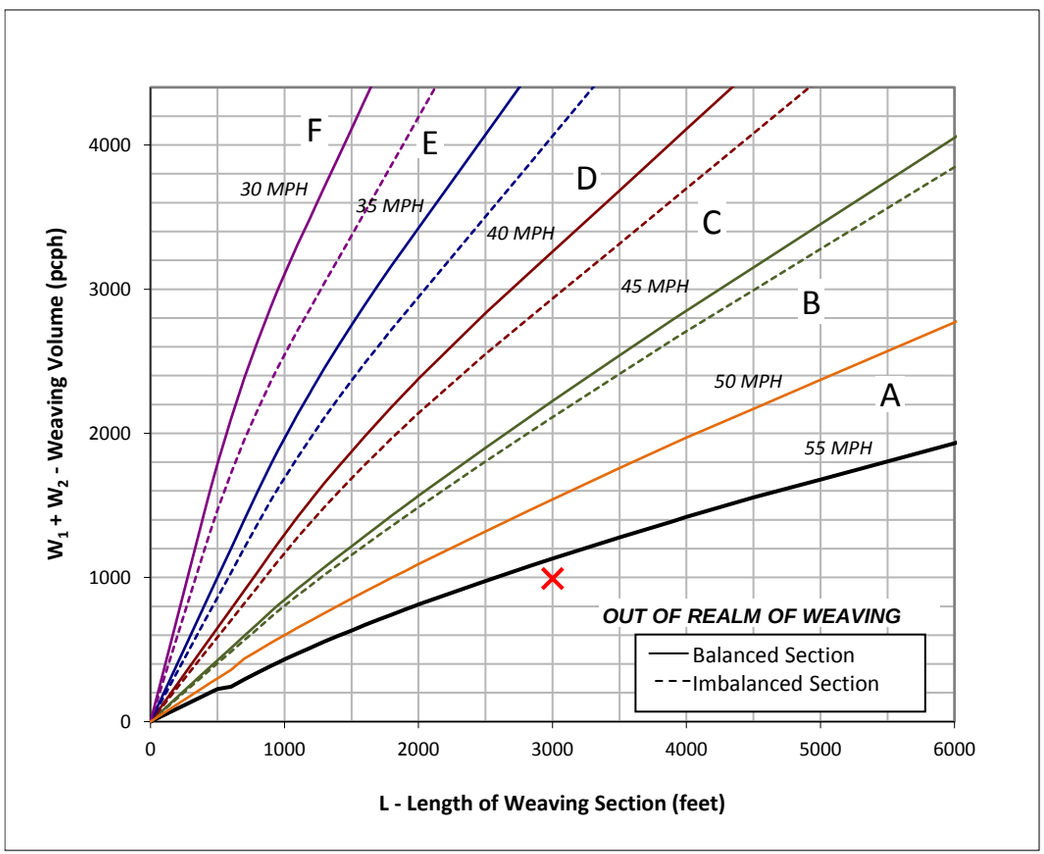
Name	Latrobe Rd off-ramp	El Dorado Hills Blvd off-ramp	El Dorado Hills Blvd off to on-ramp	El Dorado Hills Blvd to Silva Valley Pkwy	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy on-ramp (loop)	Silva Valley Pkwy to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to Cambridge Rd	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments														
GP to GP Volume (vph)				2,466										
PHF				0.97										
Terrain				Level										
Grade %				0.0%										
Grade Length (mi)				0.00										
Truck & Bus %				1.0%										
RV %				0.0%										
E_T				1.5										
E_R				1.2										
f_{HV}				0.995										
f_p				1.00										
GP to GP Flow (pcph)				2,555										
Calculate Weave Segment Operations														
Weave Type				One-sided										
Weave Length				2,000										
Segment Lanes				3										
Weave Lanes				2										
Weave Flow (pcph)				1,051										
Non-Weave Flow				2,718										
Segment Flow				3,769										
Max Weave Length				5,358										
Length Check				OK										
Ideal Weave Capacity				2,093										
f_{HV}				0.996										
f_p				0.999										
Capacity Condition 1				6,246										
Capacity Condition 2				8,561										
Weave v/c ratio				0.60										
Interchange Density				2										
Lane Changes On to ML				1										
Lane Changes ML to Off				0										
Lane Changes On to Off				0										
Min Lane Change Rate				712										
Weave LC Rate				1,345										
Non-Weave LC Rate 1				1,066										
Non-Weave LC Rate 2				2,295										
Non-Weave LC Rate 3				664										
Segment LC Rate				2,412										
Weave Intensity Factor				0.262										
Weave Speed				54.6										
Non-Weave Speed				53.8										
Segment Speed				54.1										
Weave Density				23.2										
Weave LOS				C										
Summarize Segment Operations														
Segment v/c ratio	0.64	0.54	0.41	0.60	0.46	0.51	0.53	0.57	0.43	0.69	0.67	0.71	0.55	0.65
Segment Density	27.3	23.4	14.7	23.2	16.5	20.2	19.2	24.6	15.4	26.9	24.3	29.9	20.0	25.3
Segment LOS	C	C	B	C	B	C	C	C	B	C	C	D	C	C
Over Capacity														

Leisch Method for Weaving Analysis

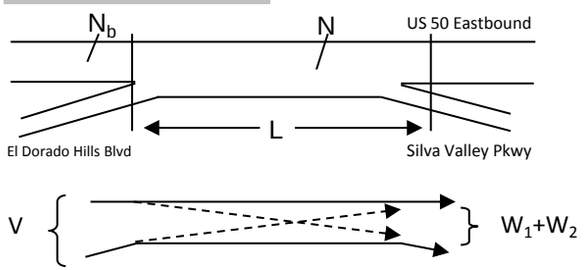
Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3,000

Project Information	
Project	Central El Dorado Hills SP
Scenario	Near Term Plus Project PM Peak Hour
Freeway	US 50 Eastbound
On-ramp	El Dorado Hills Blvd
Off-ramp	Silva Valley Pkwy

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,955	Volume (vph)*	687	Volume (vph)*	302
Truck Percentage	1%	Truck Percentage	1%	Truck Percentage	0%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,975	Volume (pcph)	690	Volume (pcph)	302



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)?	Y
If optional exit lane, then "Y". Otherwise "N".	
2. In the chart to the left, which two speed curves is the red "x" between?	**55 MPH** and -
If left of the 30 MPH curve, LOS is F. Select "-".	
If below the 55 MPH curve, out of the realm of weaving.	
3. Interpolated Weaving Speed (S_w, mph)	-
4. Weaving Intensity Factor (k)	-
5. Service Volume (SV, pcph)	
SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	-
6. Level of Service (LOS)	F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

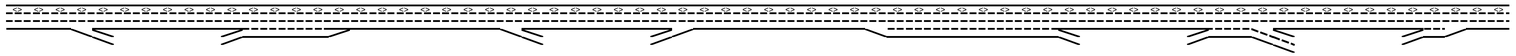
* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Project: Central El Dorado Hills Specific Plan **Alternative:** Measure E Plus Project Conditions
Freeway Corridor: Westbound US 50 **Time Period:** AM Peak Hour

Data Entry Value
Calculated Value

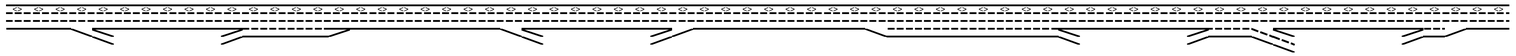
Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14



Key
<> Express Lane (HOV)
No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Define Freeway Segment														
Type	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Basic	Diverge	Basic	Weave	Basic	Merge
Length (ft)	1,500	1,250	1,500	4,900	1,500	2,350	1,500	1,700	500	1,500	2,550	2,800	2,300	1,500
Accel Length			1,500				375							880
Decel Length	150				150					1,500				
Mainline Volume	3,092	2,622	2,622	3,332	3,332	3,142	3,142	3,892	3,892	3,892	3,292	3,292	3,269	3,269
On Ramp Volume			710				750					650		1,271
Off Ramp Volume	470				190					600		673		
Express Lane Volume	340	288	288	367	367	346	346	428	428	428	362	362	360	360
EL On Ramp Volume														
EL Off Ramp Volume														
Calculate Flow Rate in General Purpose Lanes (GP)														
GP Volume (vph)	2,752	2,334	3,044	2,965	2,965	2,796	3,546	3,464	3,464	3,464	2,930	3,580	2,909	4,180
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
GP Lanes	2	2	3	2	2	2	2	2	3	3	2	3	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,942	2,495	3,254	3,171	3,171	2,990	3,792	3,703	3,703	3,703	3,132	3,827	3,111	4,469
GP Flow (pcphpl)	1,471	1,247	1,085	1,585	1,585	1,495	1,896	1,852	1,234	1,234	1,566	1,276	1,555	2,235
Calculate Speed in General Purpose Lanes														
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	67.3	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes														
v/c ratio	0.63	0.53	0.46	0.67	0.67	0.64	0.81	0.79	0.53	0.53	0.67	0.54	0.66	0.95
Speed (mph)	64.9	65.0	65.0	64.5	64.5	64.9	61.5	62.1	65.0	65.0	64.6	65.0	64.7	55.1
Density (pcphpl)	22.7	19.2	16.7	24.6	24.6	23.0	30.8	29.8	19.0	19.0	24.2	19.6	24.1	40.5
LOS	C	C	B	C	C	C	D	D	C	C	C	C	C	E
Calculate Operations for Entering GP Lanes														
GP_{IN} Vol (pcph)			2,507				2,940		3,703			3,129		3,074
GP_{IN} Cap (pcph)			4,700				4,700		4,700			4,700		4,700
GP_{IN} v/c ratio			0.53				0.63		0.79			0.67		0.65
Calculate Operations for Exiting GP Lanes														
GP_{OUT} Vol (pcph)	2,223				2,856					3,007		3,089		
GP_{OUT} Cap (pcph)	4,700				4,700					4,700		4,700		
GP_{OUT} v/c ratio	0.47				0.61					0.64		0.66		

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14



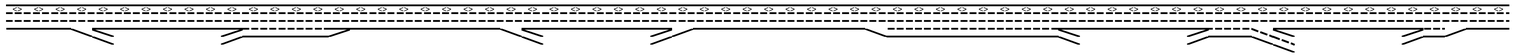
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Flow Rate in Express Lanes (EL)														
EL Volume (vph)	340	288	288	367	367	346	346	428	428	428	362	362	360	360
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	0.89	0.89
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	386	327	327	416	416	392	392	486	486	486	411	411	408	408
EL Flow (pcphpl)	386	327	327	416	416	392	392	486	486	486	411	411	408	408
Calculate Speed in Express Lanes														
Lane Width (ft)														
Shoulder Width														
TRD														
f_{LW}														
f_{LC}														
Calc'd FFS														
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes														
EL_{IN} v/c ratio	0.22	0.19	0.19	0.24	0.24	0.22	0.22	0.28	0.28	0.28	0.23	0.23	0.23	0.23
Calculate On Ramp Flow Rate														
On Volume (vph)			710				750					650		1,271
PHF			0.96				0.89					0.93		0.92
Total Lanes			1				1					1		1
Terrain			Level				Level					Level		Level
Grade %			0.0%				0.0%					0.0%		0.0%
Grade Length (mi)			0.00				0.00					0.00		0.00
Truck & Bus %			2.0%				2.0%					0.0%		2.0%
RV %			0.0%				0.0%					0.0%		0.0%
E_T			1.5				1.5					1.5		1.5
E_R			1.2				1.2					1.2		1.2
f_{HV}			0.990				0.990					1.000		0.990
f_p			1.00				1.00					1.00		1.00
On Flow (pcph)			747				851					699		1,395
On Flow (pcphpl)			747				851					699		1,395
Calculate On Ramp Roadway Operations														
On Ramp Type			Right				Right					Right		Right
On Ramp Speed (mph)			25				45					45		45
On Ramp Cap (pcph)			1,900				2,100					2,100		2,100
On Ramp v/c ratio			0.39				0.41					0.33		0.66

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14



Key

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No Trucks

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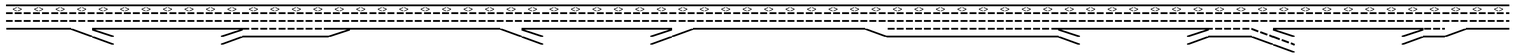
Calculate Off Ramp Flow Rate														
Off Volume (vph)	470				190					600		673		
PHF	0.66				0.61					0.87		0.92		
Total Lanes	1				1					1		2		
Terrain	Level				Level					Level		Level		
Grade %	0.0%				0.0%					0.0%		0.0%		
Grade Length (mi)	0.00				0.00					0.00		0.00		
Truck & Bus %	2.0%				2.0%					2.0%		2.0%		
RV %	0.0%				0.0%					0.0%		0.0%		
E_T	1.5				1.5					1.5		1.5		
E_R	1.2				1.2					1.2		1.2		
f_{HV}	0.990				0.990					0.990		0.990		
f_p	1.00				1.00					1.00		1.00		
Off Flow (pcph)	719				315					697		739		
Off Flow (pcphpl)	719				315					697		369		
Calculate Off Ramp Roadway Operations														
Off Ramp Type	Right				Right					Right		Right		
Off Ramp Speed	45				45					45		25		
Off Ramp Cap (pcph)	2,100				2,100					2,100		3,800		
Off Ramp v/c ratio	0.34				0.15					0.33		0.19		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps														
Up Type			Off							On		Off		
Up Distance			1,250							5,200		2,550		
Up Flow (pcph)			719							851		697		
Down Type			Off							On		No		
Down Distance			7,900							1,500				
Down Flow (pcph)			315							1,395				
Calculate Merge Influence Area Operations														
Effective v_p (pcph)			2,507				2,940							3,074
Up Ramp L_{EQ}			267											
Down Ramp L_{EQ}			1,165											
P_{FM} (Eqn 13-3)			0.620				0.588							0.602
P_{FM} (Eqn 13-4)			0.681									#VALUE!		
P_{FM} (Eqn 13-5)			0.559											
P_{FM}			1.000				1.000							1.000
v_{12} (pcph)			2,507				2,940							3,074
v_3 (pcph)														
v_{34} (pcph)														
v_{12a} (pcph)			2,507				2,940							3,074
v_{R12a} (pcph)			3,254				3,792							4,469
Merge Speed Index			0.35				0.46							0.58
Merge Area Speed			57.0				54.4							51.6
Outer Lanes Volume														
Outer Lanes Speed														
Segment Speed			57.0				54.4							51.6
Merge v/c ratio			0.71				0.82							0.97
Merge Density			21.1				32.3							34.2
Merge LOS			C				D							D

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14



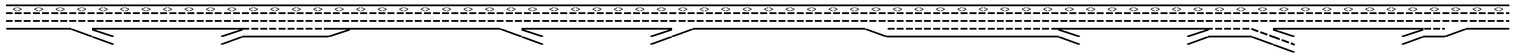
Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Diverge Influence Area Operations														
Effective v_F (pcph)	2,942				3,171					3,703				
Up Ramp L_{EQ}										8,244				
Down Ramp L_{EQ}										1,802				
P_{FD} (Eqn 13-9)	0.653				0.666					0.635				
P_{FD} (Eqn 13-10)										0.671				
P_{FD} (Eqn 13-11)			#VALUE!											
P_{FO}	1.000				1.000					0.671				
v_{12} (pcph)	2,942				3,171					2,715				
v_3 (pcph)										988				
v_{3A} (pcph)														
v_{12a} (pcph)	2,942				3,171					2,715				
Diverge Speed Index	0.36				0.33					0.36				
Diverge Area Speed	56.7				57.5					56.7				
Outer Lanes Volume										988				
Outer Lanes Speed										71.3				
Segment Speed	56.7				57.5					60.0				
Diverge v/c ratio	0.67				0.72					0.62				
Diverge Density	28.2				30.2					14.1				
Diverge LOS	D				D					B				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments														
On to Off Volume (vph)												122		
PHF												0.94		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												1.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.995		
f_P												1.00		
On to Off Flow (pcph)												130		
Calculate On Ramp to Mainline Flow Rate for Weave Segments														
On to ML Volume (vph)												528		
PHF												0.93		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												0.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												1.000		
f_P												1.00		
On to ML Flow (pcph)												568		
Calculate Mainline to Off Ramp Flow Rate for Weave Segments														
ML to Off Volume (vph)												551		
PHF												0.92		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												2.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.990		
f_P												1.00		
ML to Off Flow (pcph)												605		
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments														
GP to GP Volume (vph)												2,378		
PHF												0.94		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												1.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.995		
f_P												1.00		
GP to GP Flow (pcph)												2,543		

Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14



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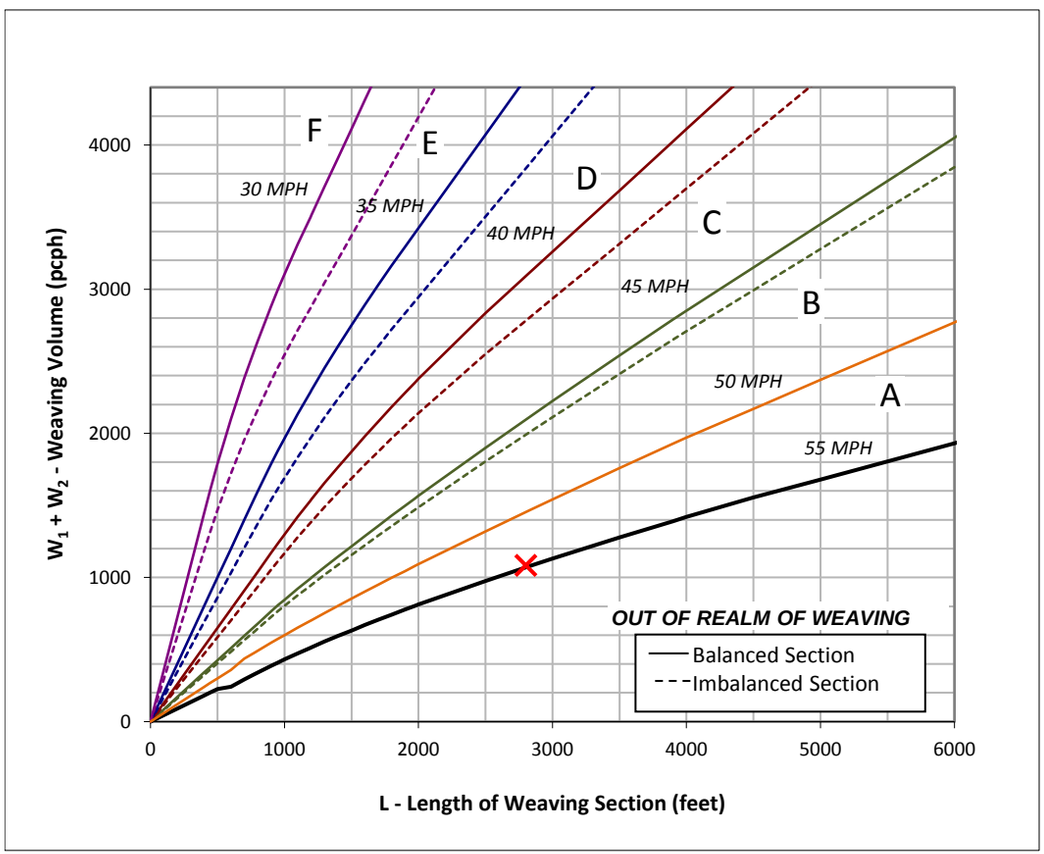
Calculate Weave Segment Operations														
Weave Type												One-sided		
Weave Length												1,800		
Segment Lanes												2		
Weave Lanes												2		
Weave Flow (pcph)												1,174		
Non-Weave Flow												2,673		
Segment Flow												3,846		
Max Weave Length												5,639		
Length Check												OK		
Ideal Weave Capacity												2,056		
f_{HV}												0.995		
f_{P}												1.000		
Capacity Condition 1												4,092		
Capacity Condition 2												7,826		
Weave v/c ratio												0.94		
Interchange Density												1		
Lane Changes On to ML												1		
Lane Changes ML to Off												0		
Lane Changes On to Off												0		
Min Lane Change Rate												568		
Weave LC Rate												1,223		
Non-Weave LC Rate 1												1,141		
Non-Weave LC Rate 2												2,285		
Non-Weave LC Rate 3												-300		
Segment LC Rate												2,364		
Weave Intensity Factor												0.280		
Weave Speed												54.1		
Non-Weave Speed												51.7		
Segment Speed												52.4		
Weave Density												36.7		
Weave LOS												E		
Summarize Segment Operations														
Segment v/c ratio	0.67	0.53	0.71	0.67	0.72	0.64	0.82	0.79	0.53	0.62	0.67	0.94	0.66	0.97
Segment Density	28.2	19.2	21.1	24.6	30.2	23.0	32.3	29.8	19.0	14.1	24.2	36.7	24.1	34.2
Segment LOS	D	C	C	C	D	C	D	D	C	B	C	E	C	D
Over Capacity														

Leisch Method for Weaving Analysis

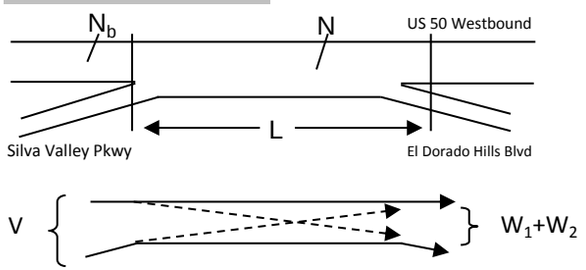
Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	2
Length of Weaving Section (feet)	L	2,800

Project Information	
Project	Central El Dorado Hills SP
Scenario	Near Term Plus Project AM Peak Hour
Freeway	US 50 Westbound
On-ramp	Silva Valley Pkwy
Off-ramp	El Dorado Hills Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	3,942	Volume (vph)*	528	Volume (vph)*	551
Truck Percentage	2%	Truck Percentage	0%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,981	Volume (pcph)	528	Volume (pcph)	557



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? *If optional exit lane, then "Y". Otherwise "N".*	Y
2. In the chart to the left, which two speed curves is the red "x" between?	**55 MPH** and -
If left of the 30 MPH curve, LOS is F. Select "-".	
If below the 55 MPH curve, out of the realm of weaving.	
3. Interpolated Weaving Speed (S_w, mph)	-
4. Weaving Intensity Factor (k)	-
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	-
6. Level of Service (LOS)	F

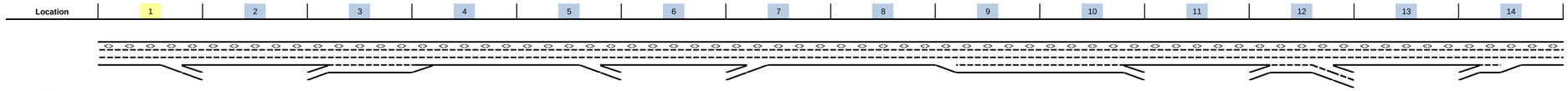
The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Project: Central El Dorado Hills Specific Plan **Alternative:** Near Term Plus Project Conditions
Freeway Corridor: Westbound US 50 **Time Period:** PM Peak Hour

Data Entry Value
Calculated Value



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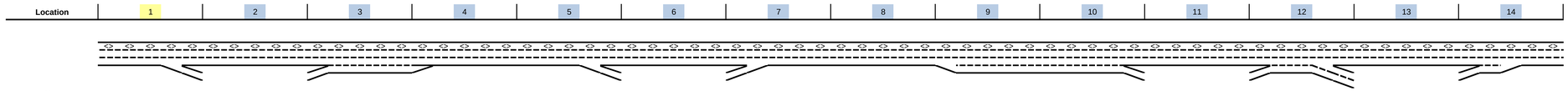
Define Freeway Segment														
Type	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Basic	Basic	Diverge	Basic	Weave	Basic	Merge
Length (ft)	1,500	1,250	1,500	4,900	1,500	2,350	1,500	1,700	500	1,500	2,550	2,800	2,300	1,500
Accel Length			1,500				375							880
Decel Length	150				150					1,500				
Mainline Volume	2,887	2,377	2,377	2,807	2,807	2,577	2,577	2,917	2,917	2,917	2,027	2,027	1,906	1,906
On Ramp Volume			430				340					220		1,314
Off Ramp Volume	510				230					890		341		
Express Lane Volume	231	190	190	225	225	206	206	233	233	233	162	162	152	152
EL On Ramp Volume														
EL Off Ramp Volume														
Calculate Flow Rate in General Purpose Lanes (GP)														
GP Volume (vph)	2,656	2,187	2,617	2,582	2,582	2,371	2,711	2,684	2,684	2,684	1,865	2,085	1,754	3,068
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	0.96	0.96
GP Lanes	2	2	3	2	2	2	2	2	3	3	2	3	2	2
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GP Flow (pcph)	2,794	2,301	2,753	2,717	2,717	2,494	2,852	2,823	2,823	2,823	1,962	2,193	1,845	3,227
GP Flow (pcphpl)	1,397	1,150	918	1,358	1,358	1,247	1,426	1,412	941	941	981	731	922	1,614
Calculate Speed in General Purpose Lanes														
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Shoulder Width	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
TRD	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calc'd FFS	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	67.3	67.3
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in General Purpose Lanes														
v/c ratio	0.59	0.49	0.39	0.58	0.58	0.53	0.61	0.60	0.40	0.40	0.42	0.31	0.39	0.69
Speed (mph)	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	64.4
Density (pcphpl)	21.5	17.7	14.1	20.9	20.9	19.2	21.9	21.7	14.5	14.5	15.1	11.2	14.2	25.1
LOS	C	B	B	C	C	C	C	C	B	B	B	B	B	C
Calculate Operations for Entering GP Lanes														
GP_{IN} Vol (pcph)			2,271				2,494		2,823			1,949		1,866
GP_{IN} Cap (pcph)			4,700				4,700		4,700			4,700		4,700
GP_{IN} v/c ratio			0.48				0.53		0.60			0.41		0.40
Calculate Operations for Exiting GP Lanes														
GP_{OUT} Vol (pcph)	2,216				2,415					1,835		1,840		
GP_{OUT} Cap (pcph)	4,700				4,700					4,700		4,700		
GP_{OUT} v/c ratio	0.47				0.51					0.39		0.39		

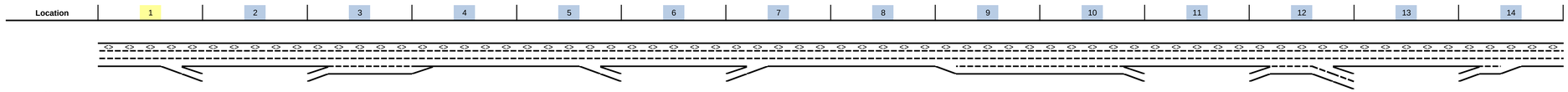


Key

<> Express Lane (HOV)

No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Flow Rate in Express Lanes (EL)														
EL Volume (vph)	231	190	190	225	225	206	206	233	233	233	162	162	152	152
PHF	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Express Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Terrain	Level	Level	Level	Level	Level	Level	Level	Grade	Level	Level	Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck & Bus %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
f_{HV}	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
f_p	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL Flow (pcph)	259	213	213	252	252	231	231	262	262	262	182	182	171	171
EL Flow (pcphpl)	259	213	213	252	252	231	231	262	262	262	182	182	171	171
Calculate Speed in Express Lanes														
Lane Width (ft)														
Shoulder Width														
TRD														
f_{LW}														
f_{LC}														
Calc'd FFS														
Measured FFS	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
FFS	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Calculate Operations in Express Lanes														
EL_{IN} v/c ratio	0.15	0.12	0.12	0.14	0.14	0.13	0.13	0.15	0.15	0.15	0.10	0.10	0.10	0.10
Calculate On Ramp Flow Rate														
On Volume (vph)			430				340					220		1,314
PHF			0.9				0.96					0.9		0.97
Total Lanes			1				1					1		1
Terrain			Level				Level					Level		Level
Grade %			0.0%				0.0%					0.0%		0.0%
Grade Length (mi)			0.00				0.00					0.00		0.00
Truck & Bus %			2.0%				2.0%					0.0%		1.0%
RV %			0.0%				0.0%					0.0%		0.0%
E_T			1.5				1.5					1.5		1.5
E_R			1.2				1.2					1.2		1.2
f_{HV}			0.990				0.990					1.000		0.995
f_p			1.00				1.00					1.00		1.00
On Flow (pcph)			483				358					244		1,361
On Flow (pcphpl)			483				358					244		1,361
Calculate On Ramp Roadway Operations														
On Ramp Type			Right				Right					Right		Right
On Ramp Speed (mph)			25				45					45		45
On Ramp Cap (pcph)			1,900				2,100					2,100		2,100
On Ramp v/c ratio			0.25				0.17					0.12		0.65



Key

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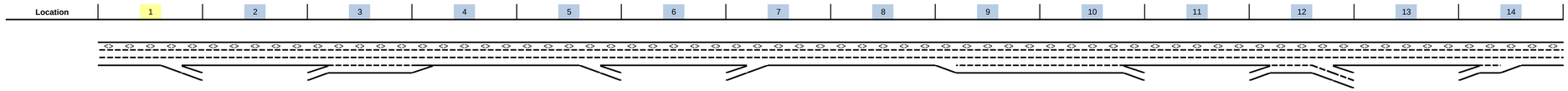
No Trucks

Name	Cambridge Rd off-ramp	Cambridge Rd off to on-ramp	Cambridge Rd on-ramp	Cambridge Rd to Bass Lake Rd	Bass Lake Rd off-ramp	Bass Lake Rd off to on-ramp	Bass Lake Rd on-ramp	Bass Lake Rd to lane add	Lane add to Silva Valley Pkwy	Silva Valley Pkwy off-ramp	Silva Valley Pkwy off to on-ramp	Silva Valley Pkwy to El Dorado Hills Blvd	El Dorado Hills Blvd off to on	El Dorado Hilld Blvd on-ramp
Calculate Off Ramp Flow Rate														
Off Volume (vph)	510				230					890		341		
PHF	0.89				0.77					0.9		0.97		
Total Lanes	1				1					1		2		
Terrain	Level				Level					Level		Level		
Grade %	0.0%				0.0%					0.0%		0.0%		
Grade Length (mi)	0.00				0.00					0.00		0.00		
Truck & Bus %	2.0%				2.0%					0.0%		1.0%		
RV %	0.0%				0.0%					0.0%		0.0%		
E_T	1.5				1.5					1.5		1.5		
E_R	1.2				1.2					1.2		1.2		
f_{HV}	0.990				0.990					1.000		0.995		
f_p	1.00				1.00					1.00		1.00		
Off Flow (pcph)	579				302					989		353		
Off Flow (pcphpl)	579				302					989		177		
Calculate Off Ramp Roadway Operations														
Off Ramp Type	Right				Right					Right		Right		
Off Ramp Speed	45				45					45		25		
Off Ramp Cap (pcph)	2,100				2,100					2,100		3,800		
Off Ramp v/c ratio	0.28				0.14					0.47		0.09		
Determine Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps														
Up Type			Off							On		Off		
Up Distance			1,250							5,200		2,550		
Up Flow (pcph)			579							358		989		
Down Type			Off							On		No		
Down Distance			7,900							1,500				
Down Flow (pcph)			302							1,361				
Calculate Merge Influence Area Operations														
Effective v_P (pcph)			2,271				2,494							1,866
Up Ramp L_{EQ}			160											
Down Ramp L_{EQ}			1,117											
P_{FM} (Eqn 13-3)			0.620				0.588							0.602
P_{FM} (Eqn 13-4)			0.688									#VALUE!		
P_{FM} (Eqn 13-5)			0.559											
P_{FM}			1.000				1.000							1.000
v_{12} (pcph)			2,271				2,494							1,866
v_3 (pcph)														
v_{34} (pcph)														
v_{12a} (pcph)			2,271				2,494							1,866
v_{R12a} (pcph)			2,753				2,852							3,227
Merge Speed Index			0.31				0.35							0.34
Merge Area Speed			57.9				56.8							57.2
Outer Lanes Volume														
Outer Lanes Speed														
Segment Speed			57.9				56.8							57.2
Merge v/c ratio			0.60				0.62							0.70
Merge Density			17.3				25.2							24.5
Merge LOS			B				C							C



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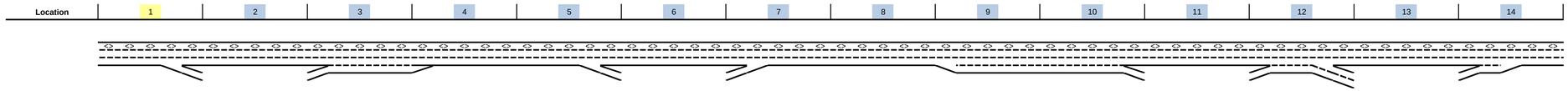
Calculate Diverge Influence Area Operations														
Effective v_P (pcph)	2,794				2,717					2,823				
Up Ramp L_{EQ}										5,885				
Down Ramp L_{EQ}										1,960				
P_{FD} (Eqn 13-9)	0.664				0.678					0.644				
P_{FD} (Eqn 13-10)										0.648				
P_{FD} (Eqn 13-11)			#VALUE!											
P_{FD}	1.000				1.000					0.648				
v_{12} (pcph)	2,794				2,717					2,178				
v_3 (pcph)										645				
v_{34} (pcph)														
v_{12a} (pcph)	2,794				2,717					2,178				
Diverge Speed Index	0.35				0.33					0.39				
Diverge Area Speed	56.9				57.5					56.1				
Outer Lanes Volume										645				
Outer Lanes Speed										71.3				
Segment Speed	56.9				57.5					59.0				
Diverge v/c ratio	0.64				0.62					0.50				
Diverge Density	26.9				26.3					9.5				
Diverge LOS	C				C					A				
Calculate On Ramp to Off Ramp Flow Rate for Weave Segments														
On to Off Volume (vph)												92		
PHF												0.96		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												0.5%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.998		
f_p												1.00		
On to Off Flow (pcph)												96		
Calculate On Ramp to Mainline Flow Rate for Weave Segments														
On to ML Volume (vph)												128		
PHF												0.9		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												0.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												1.000		
f_p												1.00		
On to ML Flow (pcph)												143		
Calculate Mainline to Off Ramp Flow Rate for Weave Segments														
ML to Off Volume (vph)												249		
PHF												0.97		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												1.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.995		
f_p												1.00		
ML to Off Flow (pcph)												258		



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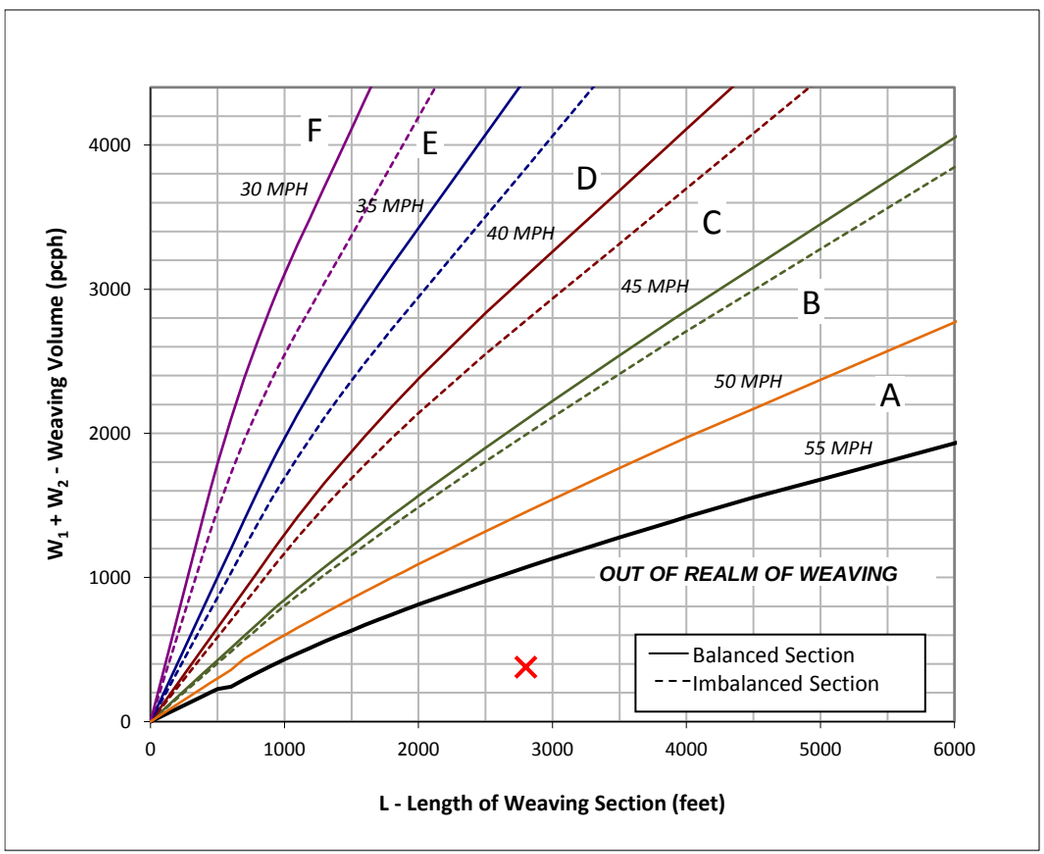
Calculate General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segments														
GP to GP Volume (vph)												1,616		
PHF												0.96		
Terrain												Level		
Grade %												0.0%		
Grade Length (mi)												0.00		
Truck & Bus %												2.0%		
RV %												0.0%		
E_T												1.5		
E_R												1.2		
f_{HV}												0.990		
f_p												1.00		
GP to GP Flow (pcph)												1,700		
Calculate Weave Segment Operations														
Weave Type												One-sided		
Weave Length												1,800		
Segment Lanes												2		
Weave Lanes												2		
Weave Flow (pcph)												401		
Non-Weave Flow												1,796		
Segment Flow												2,196		
Max Weave Length												4,358		
Length Check												OK		
Ideal Weave Capacity												2,154		
f_{HV}												0.992		
f_p												1.000		
Capacity Condition 1												4,273		
Capacity Condition 2												13,043		
Weave v/c ratio												0.51		
Interchange Density												2		
Lane Changes On to ML												1		
Lane Changes ML to Off												0		
Lane Changes On to Off												0		
Min Lane Change Rate												143		
Weave LC Rate												779		
Non-Weave LC Rate 1												960		
Non-Weave LC Rate 2												2,089		
Non-Weave LC Rate 3												-175		
Segment LC Rate												1,740		
Weave Intensity Factor												0.220		
Weave Speed												56.0		
Non-Weave Speed												58.7		
Segment Speed												58.2		
Weave Density												18.9		
Weave LOS												B		
Summarize Segment Operations														
Segment v/c ratio	0.64	0.49	0.60	0.58	0.62	0.53	0.62	0.60	0.40	0.50	0.42	0.51	0.39	0.70
Segment Density	26.9	17.7	17.3	20.9	26.3	19.2	25.2	21.7	14.5	9.5	15.1	18.9	14.2	24.5
Segment LOS	C	B	B	C	C	C	C	C	B	A	B	B	B	C
Over Capacity														

Leisch Method for Weaving Analysis

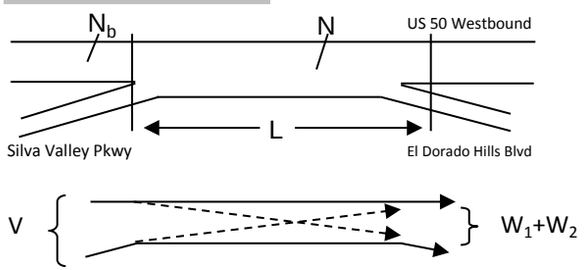
Data Input		
Number of Entering Mainline Lanes	N_b	3
Number of Lanes in Weaving Section	N	2
Length of Weaving Section (feet)	L	2,800

Project Information	
Project	Central El Dorado Hills SP
Scenario	Near Term Plus Project PM Peak Hour
Freeway	US 50 Westbound
On-ramp	Silva Valley Pkwy
Off-ramp	El Dorado Hills Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	2,247	Volume (vph)*	128	Volume (vph)*	249
Truck Percentage	2%	Truck Percentage	0%	Truck Percentage	1%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	2,269	Volume (pcph)	128	Volume (pcph)	250



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**
   If optional exit lane, then "Y". Otherwise "N".
2. In the chart to the left, which two speed curves is the red "x" between?
   55 MPH and **-**
   If left of the 30 MPH curve, LOS is F. Select "-".
   If below the 55 MPH curve, out of the realm of weaving.
3. Interpolated Weaving Speed (S_w, mph) **-**
4. Weaving Intensity Factor (k) **-**
5. Service Volume (SV, pcph)
   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] **-**
6. Level of Service (LOS) **F**

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	10	90	230	10	80	30	200	80	40	250	20
Future Volume (veh/h)	40	10	90	230	10	80	30	200	80	40	250	20
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		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	15	6	329	14	93	48	317	98	58	362	25
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.68	0.68	0.68	0.70	0.70	0.70	0.63	0.63	0.63	0.69	0.69	0.69
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	21	8	393	17	111	67	411	127	76	528	36
Arrive On Green	0.06	0.06	0.06	0.30	0.30	0.30	0.04	0.30	0.30	0.04	0.31	0.31
Sat Flow, veh/h	1307	332	133	1306	56	369	1774	1365	422	1774	1722	119
Grp Volume(v), veh/h	80	0	0	436	0	0	48	0	415	58	0	387
Grp Sat Flow(s),veh/h/ln	1772	0	0	1731	0	0	1774	0	1787	1774	0	1841
Q Serve(g_s), s	2.4	0.0	0.0	12.9	0.0	0.0	1.5	0.0	11.6	1.8	0.0	10.1
Cycle Q Clear(g_c), s	2.4	0.0	0.0	12.9	0.0	0.0	1.5	0.0	11.6	1.8	0.0	10.1
Prop In Lane	0.74		0.07	0.75		0.21	1.00		0.24	1.00		0.06
Lane Grp Cap(c), veh/h	113	0	0	520	0	0	67	0	539	76	0	564
V/C Ratio(X)	0.71	0.00	0.00	0.84	0.00	0.00	0.72	0.00	0.77	0.76	0.00	0.69
Avail Cap(c_a), veh/h	516	0	0	694	0	0	129	0	716	129	0	738
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	0.0	17.9	0.0	0.0	26.1	0.0	17.4	26.0	0.0	16.7
Incr Delay (d2), s/veh	8.0	0.0	0.0	6.8	0.0	0.0	13.2	0.0	3.7	14.6	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	7.0	0.0	0.0	1.0	0.0	6.2	1.2	0.0	5.3
LnGrp Delay(d),s/veh	33.2	0.0	0.0	24.8	0.0	0.0	39.3	0.0	21.1	40.6	0.0	18.5
LnGrp LOS	C			C			D		C	D		B
Approach Vol, veh/h		80			436			463			445	
Approach Delay, s/veh		33.2			24.8			23.0			21.3	
Approach LOS		C			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	6.3	20.5		7.5	6.1	20.8		20.5
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	22.0		16.0	4.0	22.0		22.0
Max Q Clear Time (g_c+I1), s	3.8	13.6		4.4	3.5	12.1		14.9
Green Ext Time (p_c), s	0.0	2.9		0.2	0.0	3.3		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	23.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	50	110	10	60	80	290	150	70	220	90
Future Volume (veh/h)	20	10	50	110	10	60	80	290	150	70	220	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	25	13	0	126	11	40	94	341	150	82	259	86
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.87	0.87	0.87	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	24	0	176	15	56	119	462	203	104	493	164
Arrive On Green	0.04	0.04	0.00	0.14	0.14	0.14	0.07	0.38	0.38	0.06	0.37	0.37
Sat Flow, veh/h	1186	617	0	1231	107	391	1774	1226	539	1774	1338	444
Grp Volume(v), veh/h	38	0	0	177	0	0	94	0	491	82	0	345
Grp Sat Flow(s),veh/h/ln	1803	0	0	1729	0	0	1774	0	1766	1774	0	1783
Q Serve(g_s), s	0.9	0.0	0.0	4.1	0.0	0.0	2.2	0.0	10.0	1.9	0.0	6.3
Cycle Q Clear(g_c), s	0.9	0.0	0.0	4.1	0.0	0.0	2.2	0.0	10.0	1.9	0.0	6.3
Prop In Lane	0.66		0.00	0.71		0.23	1.00		0.31	1.00		0.25
Lane Grp Cap(c), veh/h	69	0	0	247	0	0	119	0	665	104	0	657
V/C Ratio(X)	0.55	0.00	0.00	0.72	0.00	0.00	0.79	0.00	0.74	0.79	0.00	0.52
Avail Cap(c_a), veh/h	691	0	0	663	0	0	255	0	973	170	0	897
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	0.0	0.0	17.1	0.0	0.0	19.2	0.0	11.2	19.4	0.0	10.3
Incr Delay (d2), s/veh	6.7	0.0	0.0	3.9	0.0	0.0	11.1	0.0	1.7	12.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	2.2	0.0	0.0	1.4	0.0	5.1	1.3	0.0	3.2
LnGrp Delay(d),s/veh	26.4	0.0	0.0	20.9	0.0	0.0	30.3	0.0	12.9	31.6	0.0	11.0
LnGrp LOS	C			C			C		B	C		B
Approach Vol, veh/h		38			177			585			427	
Approach Delay, s/veh		26.4			20.9			15.7			14.9	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	19.7		5.6	6.8	19.4		10.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	6.0	21.0		16.0
Max Q Clear Time (g_c+I1), s	3.9	12.0		2.9	4.2	8.3		6.1
Green Ext Time (p_c), s	0.0	3.7		0.1	0.0	4.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	360	357	99.1%	121.8	53.2	F
	Through	750	750	100.0%	14.9	1.8	B
	Right Turn	60	59	97.8%	12.2	4.4	B
	Subtotal	1,170	1,166	99.6%	46.6	18.0	D
SB	Left Turn	110	109	98.9%	107.5	34.7	F
	Through	1,405	1,403	99.8%	87.7	32.4	F
	Right Turn	270	269	99.6%	83.1	34.3	F
	Subtotal	1,785	1,780	99.7%	88.1	32.4	F
EB	Left Turn	80	82	102.0%	114.3	47.1	F
	Through	80	80	99.9%	150.0	42.5	F
	Right Turn						
	Subtotal	160	162	100.9%	132.0	44.9	F
WB	Left Turn	120	115	95.6%	53.1	7.0	D
	Through	80	85	106.3%	50.0	9.6	D
	Right Turn	50	49	98.0%	30.2	8.4	C
	Subtotal	250	249	99.5%	47.9	5.6	D
Total		3,365	3,356	99.7%	72.2	20.7	E

Intersection 13 **El Dorado Hills Blvd/Saratoga Way-Park Dr** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	186	184	99.1%	86.8	38.0	F
	Through	1,377	1,384	100.5%	37.3	5.1	D
	Right Turn	171	170	99.2%	36.6	7.8	D
	Subtotal	1,734	1,738	100.2%	42.7	8.3	D
SB	Left Turn	150	145	96.9%	93.0	13.6	F
	Through	960	986	102.7%	43.2	9.2	D
	Right Turn	90	94	104.0%	18.0	7.0	B
	Subtotal	1,200	1,225	102.1%	47.6	9.6	D
EB	Left Turn	240	230	95.7%	78.4	36.7	E
	Through	130	128	98.3%	86.3	43.5	F
	Right Turn	450	450	99.9%	52.4	38.4	D
	Subtotal	820	807	98.4%	65.2	38.9	E
WB	Left Turn	111	114	102.5%	38.3	9.4	D
	Through	100	98	97.6%	82.7	51.8	F
	Right Turn	260	260	100.0%	67.7	63.7	E
	Subtotal	471	472	100.1%	64.8	46.2	E
Total		4,225	4,241	100.4%	51.4	12.4	D