Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Transportation Impact Study

Montano de El Dorado
El Dorado Hills, California

February 1, 2019

Prepared for:

Montano Ventures I, LLC

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EXECUTIVE SUMMARY

This report documents the results of a transportation impact study completed for the Montano de El Dorado retail center (the "proposed project" or "project"). The project represents an expansion of the existing Montano de El Dorado retail center located in the southeast corner of the Latrobe Road intersection with White Rock Road in El Dorado Hills. The purpose of this impact study is to identify potential environmental impacts to transportation facilities as required by the California Environmental Quality Act (CEQA). This study was performed in accordance with the El Dorado County Community Development Agency's *Transportation Impact Study Guidelines*, and the scope of work required by the County.

The existing center is comprised of approximately 41,300-square feet (sf) of commercial uses. The project proposes up to 82,500-sf of additional commercial uses and a 100-room hotel. Existing access to the site will be provided at the existing intersection of the White Rock Road and Post Street. Three additional driveways will serve the site; one existing right-in/right-out driveway along White Rock Road, one new right-in/right-out driveway along Latrobe Road at the south end of the project site, and one new left-in/right-in/right-out driveway along Latrobe Road. The following transportation facilities are included in this evaluation:

Intersections:

1. El Dorado Hills Blvd @ Saratoga Way
2. El Dorado Hills Blvd @ US-50 WB Ramps
3. Latrobe Rd @ US-50 EB Ramps
4. Latrobe Rd @ Town Center Blvd
5. Latrobe Rd @ White Rock Rd
6. Latrobe Rd @ Site Access Dwy (Future)
7. Latrobe Rd @ Golden Foothill Pkwy (North)
8. Latrobe Rd @ Suncast Ln
9. Latrobe Rd @ Golden Foothill Pkwy (South)/Clubview Drive
10. White Rock Rd @ Four Seasons Dr/Stonebriar Dr
11. White Rock Rd @Windfield Way/Town Center Blvd
12. White Rock Rd @ Post St
13. White Rock Rd @ Valley View Pkwy
14. Silva Valley Pkwy @ Tong Road
15. Silva Valley Pkwy @ US-50 WB Ramps
16. Silva Valley Pkwy @ US-50 EB Ramps

Roadway Segments:

1. Latrobe Road, between White Rock Road and Golden Foothill Parkway (North)
2. White Rock Rd, between Latrobe Road and Post Street
3. White Rock Rd, between Post Street and Valley View Parkway

Freeway Facilities:

1. US-50 Mainline
    a. Eastbound, west of El Dorado Hills Boulevard/Latrobe Road
    b. Westbound, west of El Dorado Hills Boulevard/Latrobe Road
    c. Eastbound, between Latrobe Road off-ramp and Latrobe Road on-ramp
    d. Westbound, between El Dorado Hills Blvd off-ramp and El Dorado Hills Blvd on-ramp
    e. Eastbound, east of El Dorado Hills Boulevard/Latrobe Road
    f. Westbound, east of El Dorado Hills Boulevard/Latrobe Road
    g. Eastbound, between Silva Valley Parkway off-ramp and Silva Valley Parkway on-ramp (Near-Term/Cumulative Only)
    h. Westbound, between Silva Valley Parkway off-ramp and Silva Valley Parkway on-ramp (Near-Term/Cumulative Only)

i. Eastbound, east of Silva Valley Parkway (Near-Term/Cumulative Only)
j. Westbound, east of Silva Valley Parkway (Near-Term/Cumulative Only)

2. US-50 Ramps
   k. Eastbound, diverge to Latrobe Road
   l. Eastbound, diverge to El Dorado Hills Boulevard
   m. Eastbound, merge from Latrobe Road
   n. Eastbound, diverge to Silva Valley Parkway (Near-Term/Cumulative Only)
   o. Eastbound, merge from Silva Valley Parkway (Near-Term/Cumulative Only)
   p. Eastbound, merge from Silva Valley Parkway (Cumulative Only)
   q. Westbound, diverge to Silva Valley Parkway (Near-Term/Cumulative Only)
   r. Westbound, merge from Silva Valley Parkway (Cumulative Only)
   s. Westbound, merge from Silva Valley Parkway (Near-Term/Cumulative Only)
   t. Westbound, diverge to El Dorado Hills Boulevard/Latrobe Road
   u. Westbound, merge from El Dorado Hills Boulevard/Latrobe Road

Based on the County's requirements, this transportation impact study was conducted for the study facilities for the following scenarios:

A. Existing Conditions
B. Existing plus Proposed Project Conditions
C. Near-Term (2025) Conditions
D. Near-Term (2025) plus Proposed Project Conditions
E. Cumulative (2035) Conditions
F. Cumulative (2035) plus Proposed Project Conditions

Significant findings of this study include:

- The proposed project is estimated to generate approximately 4,400 new daily trips, with 128 new trips occurring during the AM peak-hour, and 382 new trips occurring during the PM peak-hour.
- The County's Travel Demand Model (TDM) does not account for the project's proposed land uses and, because the County's TDM does not assume the project's employment growth in TAZ 172, the *General Plan's* cumulative traffic analysis cannot serve as the basis for the Cumulative (2035) traffic analysis of the project. As such, Cumulative (2035) conditions are included in this evaluation.
- As defined by the County, the addition of the proposed project to the Existing, Near-Term (2025), and Cumulative (2035) scenarios significantly worsens conditions at multiple study intersections. All of these impacts can be mitigated to be ***less than significant***.

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INTRODUCTION

This report documents the results of a transportation impact study completed for the Montano de El Dorado retail center (the "proposed project" or "project"). The project represents an expansion of the existing Montano de El Dorado retail center located in the southeast corner of the Latrobe Road intersection with White Rock Road in El Dorado Hills. The purpose of this impact study is to identify potential environmental impacts to transportation facilities as required by the California Environmental Quality Act (CEQA). This study was performed in accordance with the El Dorado County Community Development Agency's *Transportation Impact Study Guidelines*[1], and the scope of work required by the County[2].

The remaining sections of this report document the proposed project, analysis methodologies, impacts and mitigation, and general study conclusions.

PROJECT DESCRIPTION

The existing center is comprised of approximately 41,300-square feet (sf) of commercial uses. The project proposes up to 82,500-sf of additional commercial uses and a 100-room hotel. Existing access to the site will be provided at the existing intersection of the White Rock Road and Post Street. Three additional driveways will serve the site; one existing right-in/right-out driveway along White Rock Road, one new right-in/right-out driveway along Latrobe Road at the south end of the project site, and one new left-in/right-in/right-out driveway along Latrobe Road. The project location is shown in **Figure 1**, and the proposed project site plan is shown in **Figure 2**. The following transportation facilities are included in this evaluation:

Intersections:

1. El Dorado Hills Blvd @ Saratoga Wy
2. El Dorado Hills Blvd @ US-50 WB Ramps
3. Latrobe Rd @ US-50 EB Ramps
4. Latrobe Rd @ Town Center Blvd
5. Latrobe Rd @ White Rock Rd
6. Latrobe Rd @ Site Access Dwy (Future)
7. Latrobe Rd @ Golden Foothill Pkwy (North)
8. Latrobe Rd @ Suncast Ln
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11. White Rock Rd @Windfield Wy/ Town Center Blvd
12. White Rock Rd @ Post St
13. White Rock Rd @ Valley View Pkwy
14. Silva Valley Pkwy @ Tong Road
15. Silva Valley Pkwy @ US-50 WB Ramps
16. Silva Valley Pkwy @ US-50 EB Ramps

Figure 3 illustrates the study intersections facilities, existing traffic control, and existing lane configurations.

Roadway Segments:

1. Latrobe Road, between White Rock Road and Golden Foothill Parkway (North)
2. White Rock Rd, between Latrobe Road and Post Street
3. White Rock Rd, between Post Street and Valley View Parkway

[1] *Transportation Impact Study Guidelines,* El Dorado County Community Development Agency, November 2014.
[2] Memorandum from Katie Jackson, El Dorado County Community Development Agency, to Matt Weir, Kimley-Horn and Associates, Inc., October 23, 2015.

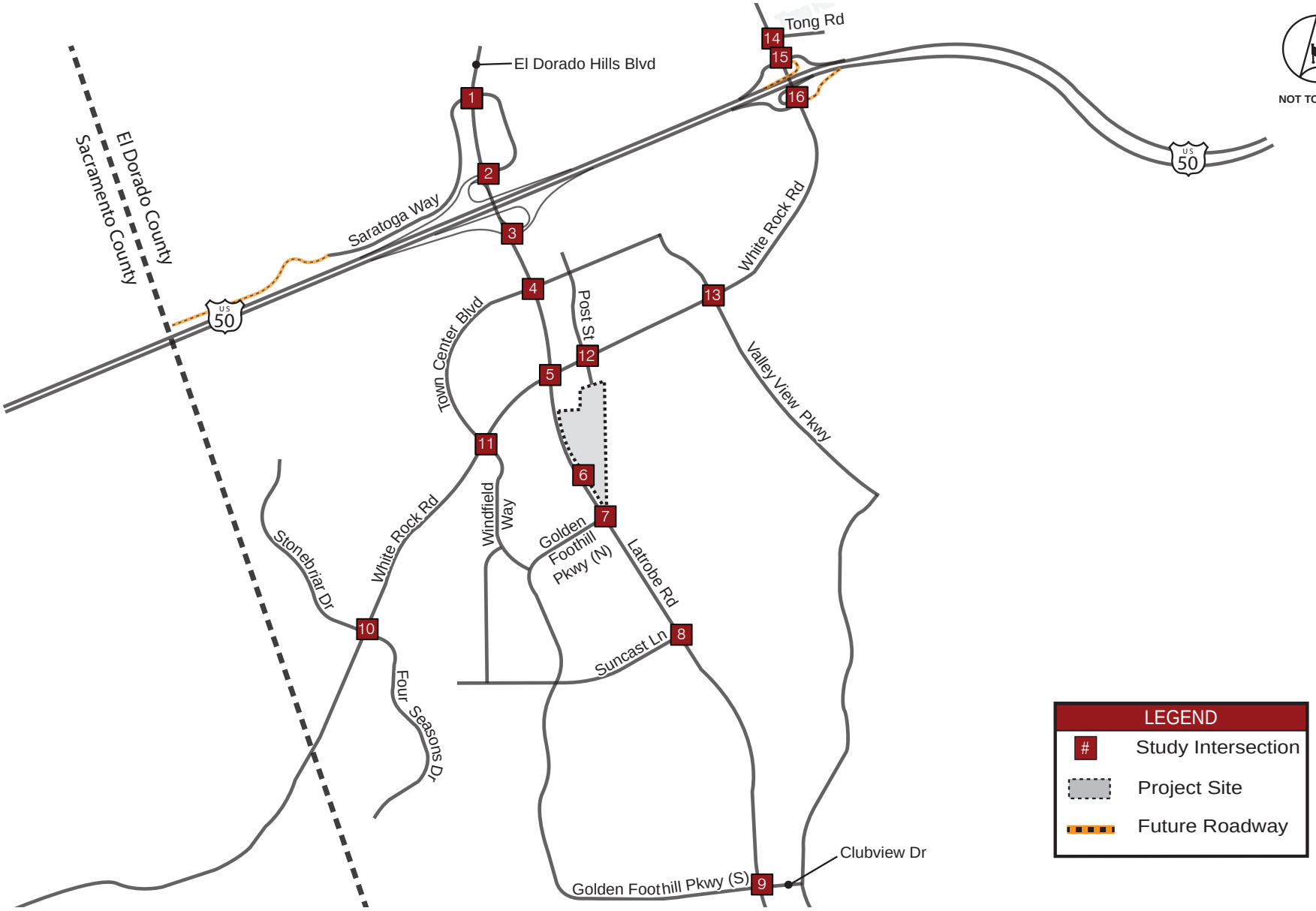

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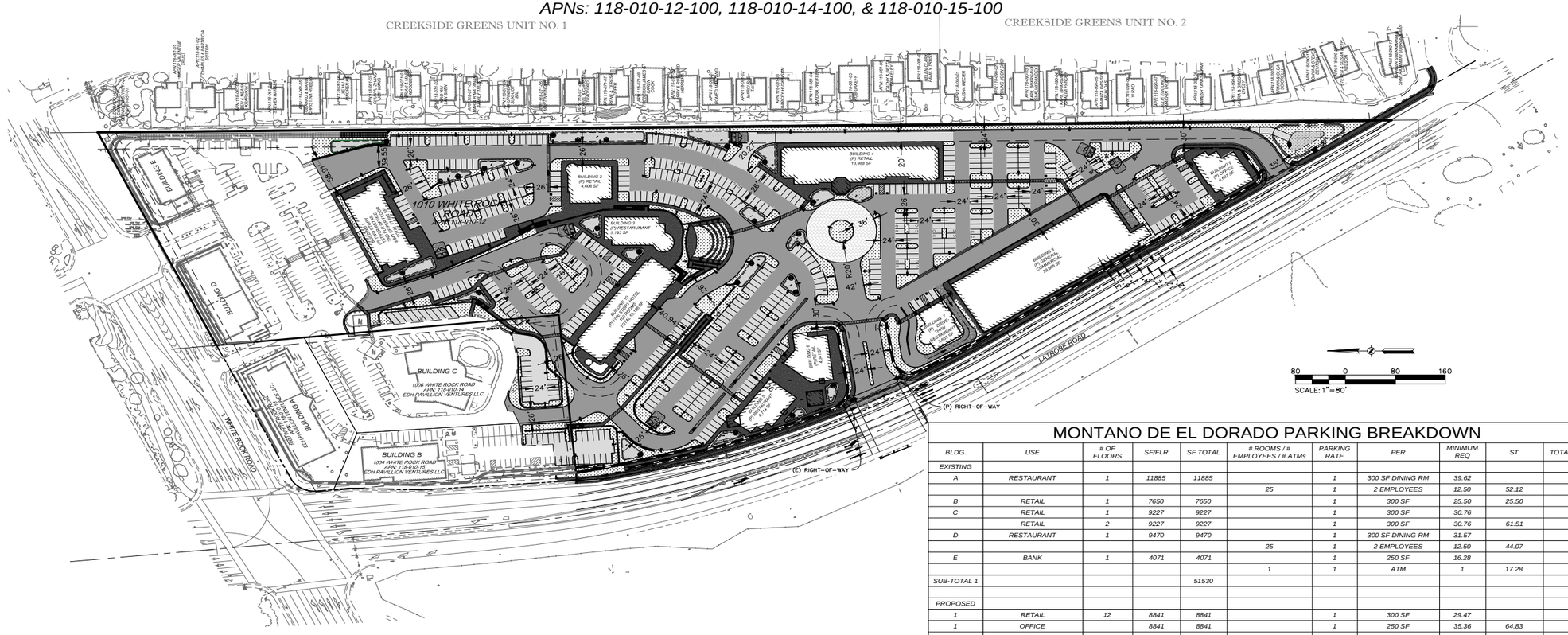
Figure 1
Project Site Vicinity Map

MONTANO DE EL DORADO PHASE II MASTER PLAN

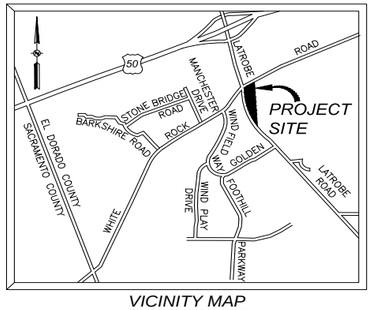
PRELIMINARY SITE PLAN

WHITE ROCK ROAD & LATROBE ROAD
EL DORADO HILLS, CA
COUNTY OF EL DORADO
APNs: 118-010-12-100, 118-010-14-100, & 118-010-15-100



MONTANO DE EL DORADO PARKING BREAKDOWN

BLDG.	USE	# OF FLOORS	SF/FLR	SF TOTAL	# ROOMS / # EMPLOYEES / # ATMs	PARKING RATE	PER	MINIMUM REQ	ST	TOTAL / BLDG.
EXISTING										
A	RESTAURANT	1	11885	11885		1	300 SF DINING RM	39.62		
					25	1	2 EMPLOYEES	12.50	52.12	53
B	RETAIL	1	7650	7650		1	300 SF	25.50	25.50	26
C	RETAIL	1	9227	9227		1	300 SF	30.76		
	RETAIL	2	9227	9227		1	300 SF	30.76	61.51	62
D	RESTAURANT	1	9470	9470		1	300 SF DINING RM	31.57		
					25	1	2 EMPLOYEES	12.50	44.07	45
E	BANK	1	4071	4071		1	250 SF	16.28		
					1	1	ATM	1	17.28	18
SUB-TOTAL 1				51530						204
PROPOSED										
1	RETAIL	12	8841	8841		1	300 SF	29.47		
1	OFFICE		8841	8841		1	250 SF	35.36	64.83	65
2	RETAIL	1	4606	4606		1	300 SF	15.35	15.35	16
3	RESTAURANT	1	5193	5193		1	300 SF DINING RM	17.31		
3					25	1	2 EMPLOYEES	12.50	29.81	30
4	RETAIL	1	13988	13988		1	300 SF	46.63	46.63	47
5	RESTAURANT	1	4714	4714		1	300 SF DINING RM	15.71		
5					25	1	2 EMPLOYEES	12.50	28.21	29
6	RETAIL	1	4341	4341		1	300 SF	14.47	14.47	15
7	DRIVE-THRU RESTAURANT	1	3665	3665		1	300 SF GFA	12.22	12.22	13
8	GENERAL COMMERCIAL	1	29968	29968		1	200 SF AUA	149.84	149.84	150
9	OFFICE	1	4607	4607		1	250 SF	18.43	18.43	19
10	HOTEL	2, 3, 4, & 5	11260	45040	100	1.2	GUEST ROOM	120.00		
10	OFFICE	1	1246	1246		1	50% OF 250 SF	2.49		
10	CHECK-IN ENTRY	1	1850	1850		1	50% OF 300 SF	3.08		
10	BAR	1	3500	3500		1	300 SF	11.67		
10					12	1	2 EMPLOYEES	6.00		
10	MEETING ROOMS	1	3500	3500		1	50% OF 50 SF	35.00	178.24	179
SUB-TOTAL 2				143900						563
ESTIMATED PARKING REQUIRED										767
PARKING PROVIDED							REGULAR	COMPACT	ACCESSIBLE	
	EXISTING						158	73	10	241
	PROPOSED						468	39	19	526
TOTAL	PROVIDED						626	112	29	767



VICINITY MAP
NOT TO SCALE

SHEET INDEX

C1 PRELIMINARY SITE PLAN
C2 EXISTING CONDITIONS PLAN
C3 PRELIMINARY GRADING, DRAINAGE, AND PAVING PLAN
C4 PRELIMINARY GRADING, DRAINAGE, AND PAVING PLAN
C5 PRELIMINARY WATER AND SANITARY SEWER PLAN
C6 PRELIMINARY WATER AND SANITARY SEWER PLAN
C7 PRELIMINARY OFF-SITE SANITARY SEWER PLAN
L1.1 PLANTING PLAN A
L1.2 PLANTING PLAN A
TM1 TENTATIVE MAP
TM2 TENTATIVE MAP
SITE LIGHTING PLAN 1 - OVERALL
SITE LIGHTING PLAN 2 - DETAIL
SITE LIGHTING PLAN 3 - DETAIL
SITE LIGHTING PLAN 4 - DETAIL
SITE LIGHTING PLAN 5 - DETAIL
SITE LIGHTING LIGHT FIXTURE DETAILS

LEGEND:

FIRE TURNING RADII
INNER RADIUS=40'
INNER RADIUS=56'

NOTES:

1. SEE PRELIMINARY GRADING, & UTILITY PLANS FOR (P) EASEMENTS.
2. SEE SHEET C2 FOR SITE BOUNDARY BEARINGS AND DISTANCES.
3. STANDARD STALL DIMENSIONS ARE 9' WIDE x 18' LONG.

NO.	REVISION	DATE	BY	APPR'D

CHECK: RPW
DRAWN: TSM
DESIGN: TSM
BY: RPW
QUANT.:
ORIGINAL SCALE IS IN INCHES

PROFESSIONAL ENGINEER — No. C34665 — PRELIMINARY NOT FOR CONSTRUCTION — OF CALIFORNIA

RFE ENGINEERING, INC
Civil Engineers • Planners • Surveyors
2260 Douglas Blvd., Suite 160, Roseville, CA 95661
Ph: 916-772-7800 Fax: 916-772-7804
www.rfeengineering.com

DEVELOPER:
ARROWEST PROPERTIES, INC. CA
4820 SIERRA COLLEGE BLVD., # 200
ROCKLIN, CA 95677
ATTN: VIMAL PERKINS
TELE:916-284-2555

MONTANO DE EL DORADO
PHASE II MASTER PLAN
WHITEROCK ROAD & LATROBE ROAD
EL DORADO HILLS, CA

PRELIMINARY SITE PLAN

Drawing of Sheet C1 of Total 17

01/08/2019

RFE PROJECT #21335 – MONTANO DE EL DORADO PHASE II MASTER PLAN, EL DORADO HILLS, CA

3:\2021 Projects\21335 Montano Ph II Master Plan\ENGR\DWG CAD\PRELIMINARY\C1-SITE PLAN.dwg Jan 08, 2019-9:43 am

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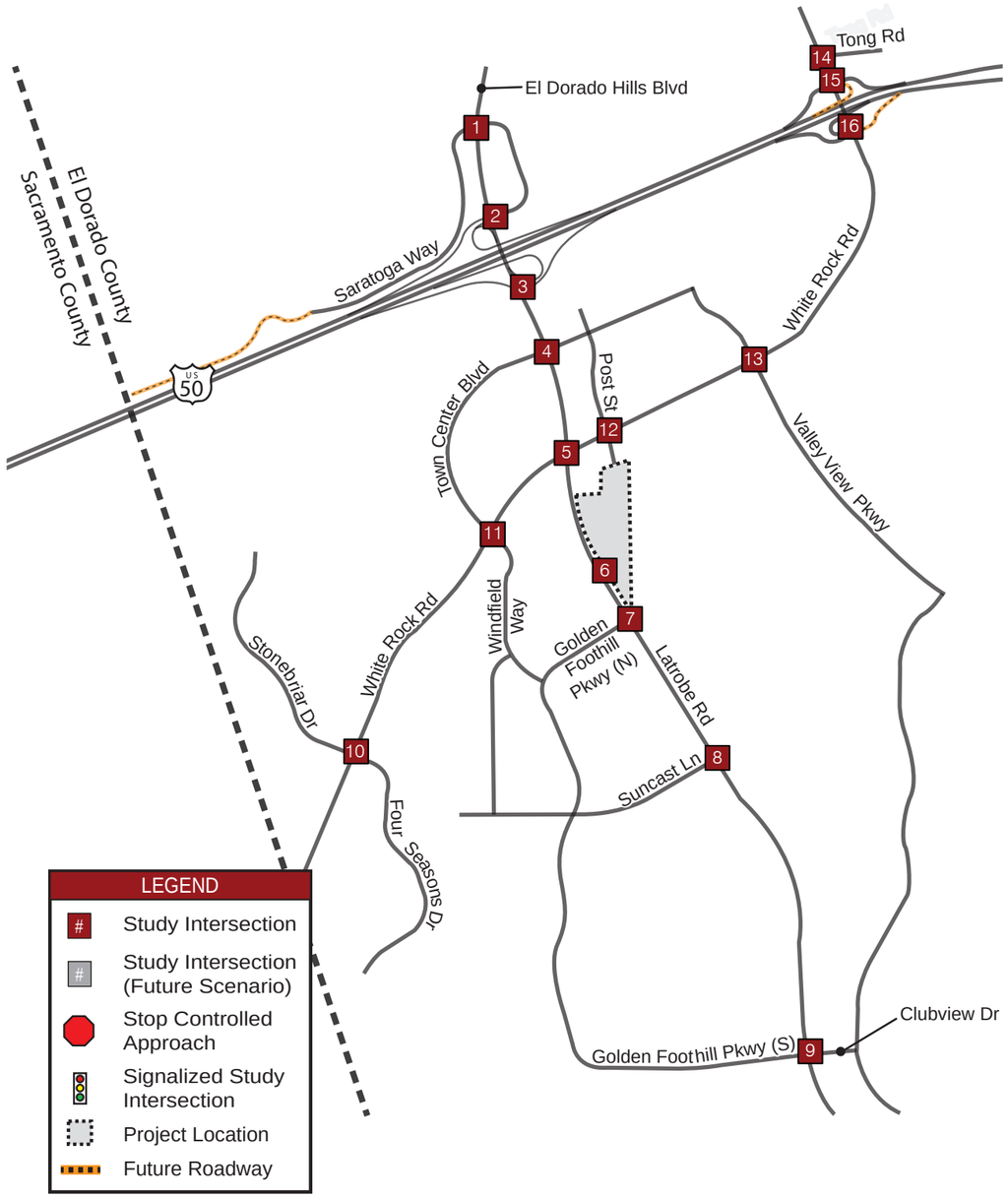
Figure 2
Proposed Project Site Plan

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)



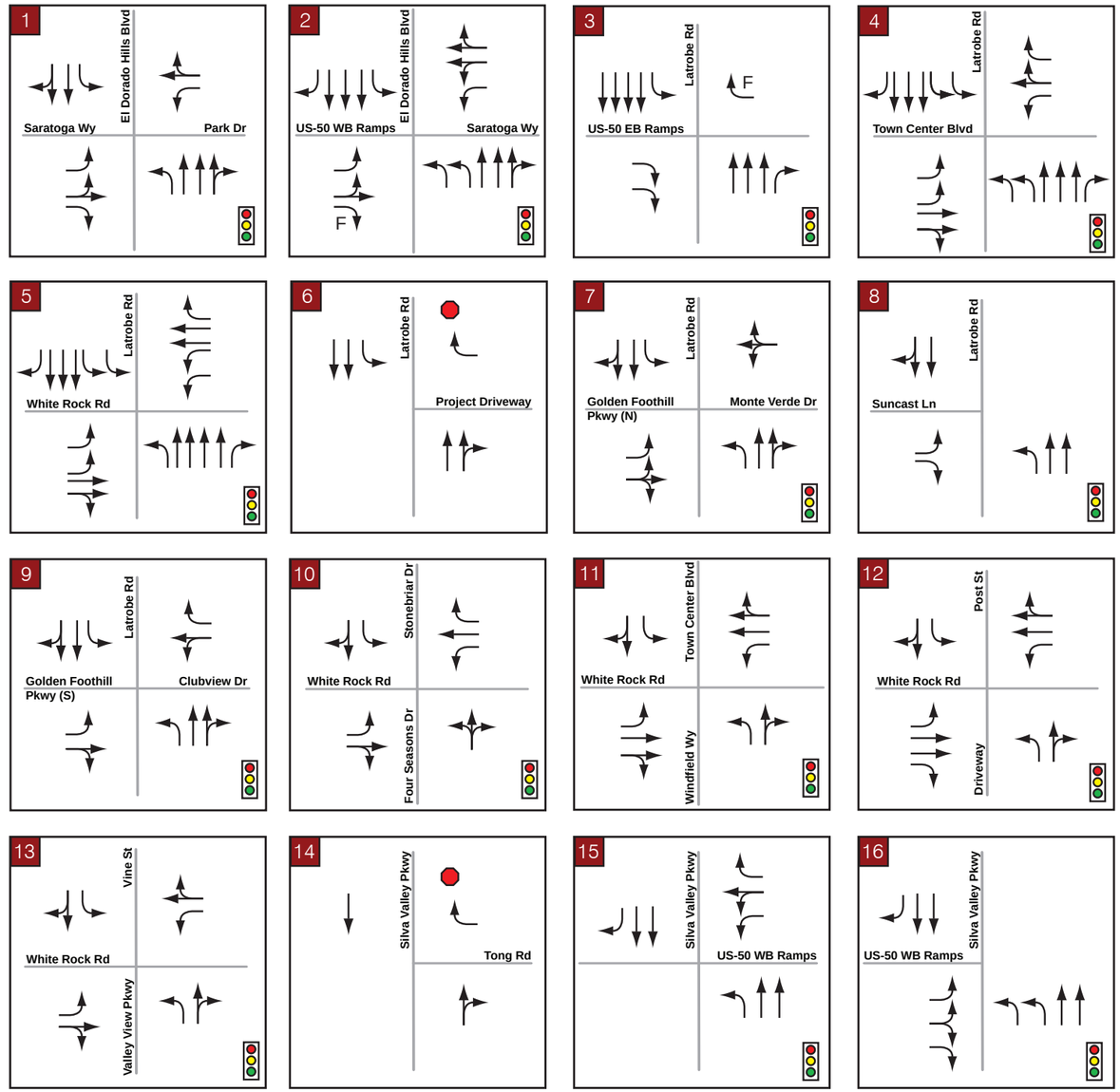


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Figure 3
Study Intersections, Traffic Control, and Lane Geometries

Freeway Facilities:

1. US-50 Mainline
    a. Eastbound, west of El Dorado Hills Boulevard/Latrobe Road
    b. Westbound, west of El Dorado Hills Boulevard/Latrobe Road
    c. Eastbound, between Latrobe Road off-ramp and Latrobe Road on-ramp
    d. Westbound, between El Dorado Hills Blvd off-ramp and El Dorado Hills Blvd on-ramp
    e. Eastbound, east of El Dorado Hills Boulevard/Latrobe Road
    f. Westbound, east of El Dorado Hills Boulevard/Latrobe Road
    g. Eastbound, between Silva Valley Parkway off-ramp and Silva Valley Parkway on-ramp (Near-Term/Cumulative Only)
    h. Westbound, between Silva Valley Parkway off-ramp and Silva Valley Parkway on-ramp (Near-Term/Cumulative Only)
    i. Eastbound, east of Silva Valley Parkway (Near-Term/Cumulative Only)
    j. Westbound, east of Silva Valley Parkway (Near-Term/Cumulative Only)
2. US-50 Ramps
    k. Eastbound, diverge to Latrobe Road
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    m. Eastbound, merge from Latrobe Road
    n. Eastbound, diverge to Silva Valley Parkway (Near-Term/Cumulative Only)
    o. Eastbound, merge from Silva Valley Parkway (Near-Term/Cumulative Only)
    p. Eastbound, merge from Silva Valley Parkway (Cumulative Only)
    q. Westbound, diverge to Silva Valley Parkway (Near-Term/Cumulative Only)
    r. Westbound, merge from Silva Valley Parkway (Cumulative Only)
    s. Westbound, merge from Silva Valley Parkway (Near-Term/Cumulative Only)
    t. Westbound, diverge to El Dorado Hills Boulevard/Latrobe Road
    u. Westbound, merge from El Dorado Hills Boulevard/Latrobe Road

The study freeway facilities are depicted in **Figure 4.**

PROJECT AREA ROADWAYS

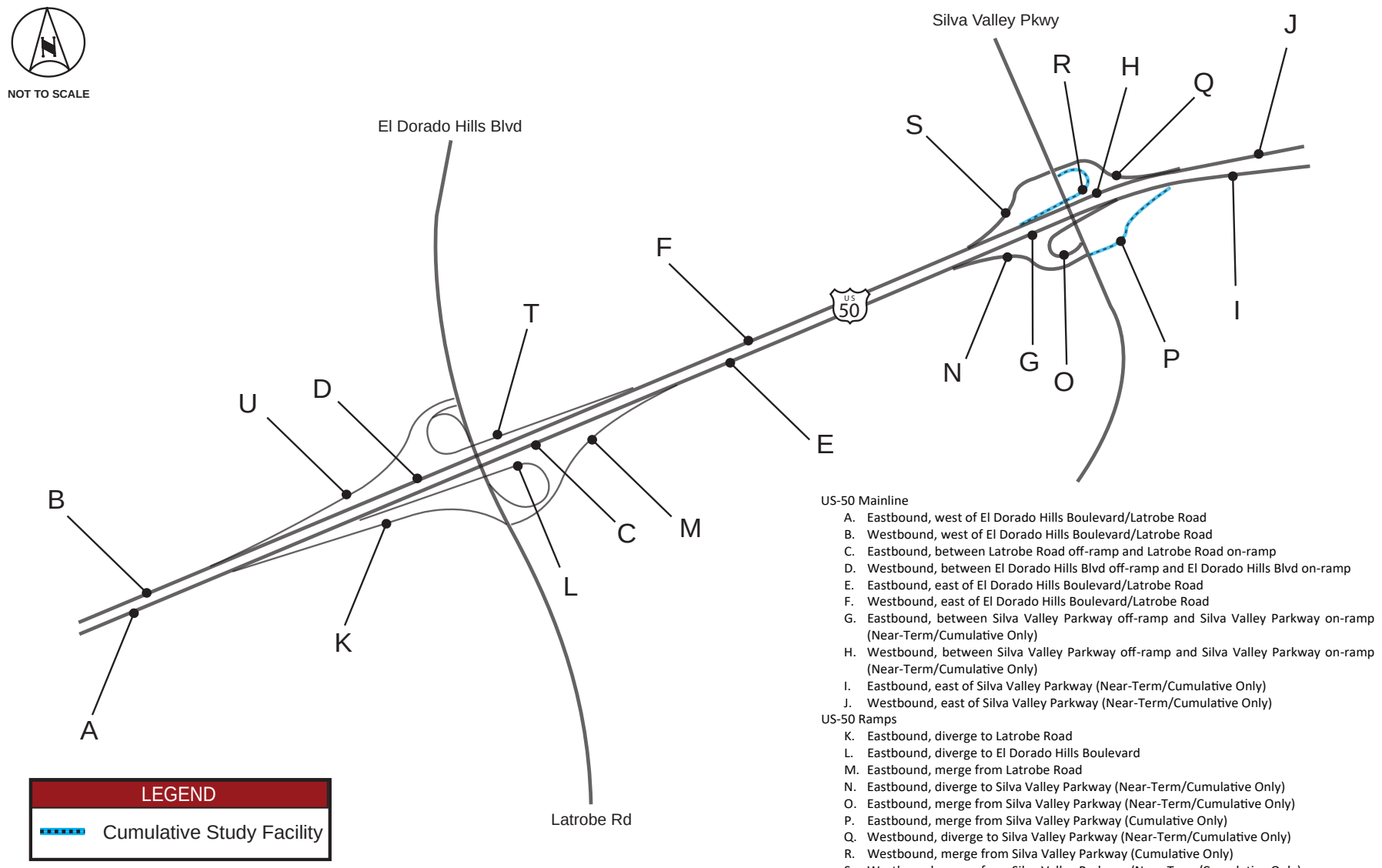
The following are descriptions of the primary roadways in the vicinity of the project.

US Route 50 (US-50) is an east-west freeway located south of the project site. Generally, US-50 serves all of El Dorado County's major population centers and provides connections to Sacramento County to the west and the State of Nevada to the east. Primary access to the project site from US-50 is provided at the El Dorado Hills Boulevard/Latrobe Road interchange. Within the general project area, US-50 currently serves approximately 90,000 vehicles per day[3] (vpd) west of El Dorado Hills Boulevard/Latrobe Road.

El Dorado Hills Boulevard is a north-south arterial roadway that provides a primary connection to US-50 for western El Dorado County. South of US-50, El Dorado Hills Boulevard becomes **Latrobe Road**. North of the US-50 interchange area, this roadway carries approximately 30,000 vpd[4] with three through lanes in each direction. South of the interchange this roadway carries approximately 29,700 vpd[4] also with three travel lanes in each direction.

White Rock Road is an east-west arterial roadway that parallels US-50 to the south, connecting Rancho Cordova on the west with Latrobe Road in El Dorado County on the east. White Rock Road, which becomes **Silva Valley Parkway** at US-50, accommodates approximately 10,500 vpd[4] in the vicinity of Latrobe Road.

[3] Caltrans Traffic and Vehicle Data Systems Unit, http://traffic-counts.dot.ca.gov/2014all/
[4] El Dorado County Department of Transportation, 2014, http://edcapps.edcgov.us/dot/trafficcounts.asp



US-50 Mainline

A. Eastbound, west of El Dorado Hills Boulevard/Latrobe Road
B. Westbound, west of El Dorado Hills Boulevard/Latrobe Road
C. Eastbound, between Latrobe Road off-ramp and Latrobe Road on-ramp
D. Westbound, between El Dorado Hills Blvd off-ramp and El Dorado Hills Blvd on-ramp
E. Eastbound, east of El Dorado Hills Boulevard/Latrobe Road
F. Westbound, east of El Dorado Hills Boulevard/Latrobe Road
G. Eastbound, between Silva Valley Parkway off-ramp and Silva Valley Parkway on-ramp (Near-Term/Cumulative Only)
H. Westbound, between Silva Valley Parkway off-ramp and Silva Valley Parkway on-ramp (Near-Term/Cumulative Only)
I. Eastbound, east of Silva Valley Parkway (Near-Term/Cumulative Only)
J. Westbound, east of Silva Valley Parkway (Near-Term/Cumulative Only)

US-50 Ramps

K. Eastbound, diverge to Latrobe Road
L. Eastbound, diverge to El Dorado Hills Boulevard
M. Eastbound, merge from Latrobe Road
N. Eastbound, diverge to Silva Valley Parkway (Near-Term/Cumulative Only)
O. Eastbound, merge from Silva Valley Parkway (Near-Term/Cumulative Only)
P. Eastbound, merge from Silva Valley Parkway (Cumulative Only)
Q. Westbound, diverge to Silva Valley Parkway (Near-Term/Cumulative Only)
R. Westbound, merge from Silva Valley Parkway (Cumulative Only)
S. Westbound, merge from Silva Valley Parkway (Near-Term/Cumulative Only)
T. Westbound, diverge to El Dorado Hills Boulevard/Latrobe Road
U. Westbound, merge from El Dorado Hills Boulevard/Latrobe Road

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Figure 4
Study Freeway Facilities

ASSESSMENT OF PROPOSED PROJECT

Proposed Project Trip Generation and Assignment

The number of trips anticipated to be generated by the proposed project was derived using data included in *Trip Generation, 9th Edition,* published by the Institute of Transportation Engineers (ITE). The anticipated ITE trip generation characteristics for the proposed project are depicted in Table 1.

Table 1 – Proposed Project ITE Trip Generation

Land Use (ITE Code)	Size (ksf / # rooms)	Daily Trips	AM Peak-Hour					PM Peak-Hour				
			Total Trips	IN		OUT		Total Trips	IN		OUT	
				%	Trips	%	Trips		%	Trips	%	Trips
Shopping Center (820) - Existing	41.3	3,824	91	62%	56	38%	35	331	48%	159	52%	172
Existing Total External Trips:		*3,824*	*91*		*56*		*35*	*331*		*159*		*172*
Shopping Center (820) - Proposed+	123.8	7,802	178	62%	110	38%	68	691	48%	332	52%	359
Hotel (310) - Proposed	100	818	53	59%	31	41%	22	60	51%	31	49%	29
Proposed Total External Trips:		*8,620*	*231*		*141*		*90*	*751*		*363*		*388*
Internal Trip Reduction	*5%*	*-431*	*-12*		*-7*		*-4*	*-38*		*-18*		*-19*
Net New External Trips:		***4,365***	***128***		***78***		***50***	***382***		***186***		***197***

Source: *Trip Generation, 9th Edition*, ITE.
+ Proposed Shopping Center is the total project, Existing (41.3-ksf) plus Proposed (82.5-ksf).

As shown in Table 1, the proposed project is estimated to generate approximately 4,400 new daily trips, with 128 new trips occurring during the AM peak-hour, and 382 new trips occurring during the PM peak-hour. It should be noted that, although the project hotel component is specifically identified as being business focused, based on County direction trip generation characteristics for a general hotel use were used in this analysis due to the sample size limitations associated with ITE's Business Hotel (312) land use.

The El Dorado County Travel Demand Model (TDM), in conjunction with detailed Geographic Information System (GIS) analyses of its dataset, was used both as the basis to establish the relative assignment of proposed project trips, and to establish background traffic estimates for analysis scenarios (additional discussion on the specific application of the TDM can be found within each scenario's discussion section). The GIS analysis was specifically included during the relative trip assignment analysis to improve the accuracy of the distribution of trips related to the business hotel as this land use is not an explicit land use type in the TDM.

While the County originally provided the most recent iteration of the County's model at the onset of the project[5], subsequent coordination with the County resulted in additional revisions to that model for use in this study[6]. The project trip distribution percentages that resulted from analyses completed for this study are provided in Figure 5 (existing scenarios) and Figure 6 (2025 and 2035 scenarios).

TRANSPORTATION IMPACT STUDY METHODOLOGY

This transportation impact study was performed in accordance with the County's transportation impact study guidelines[1].

Level of Service Definitions

Analysis of transportation facility significant environmental impacts is based on the concept of Level of Service (LOS). The LOS of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of Service for this study were determined using methods defined in the *Highway Capacity Manual (HCM) 2010*.

[5] Email from Natalie Porter, El Dorado County Community Development Agency, September 19, 2014.
[6] Email from Katie Jackson, El Dorado County Community Development Agency, March 15, 2017.

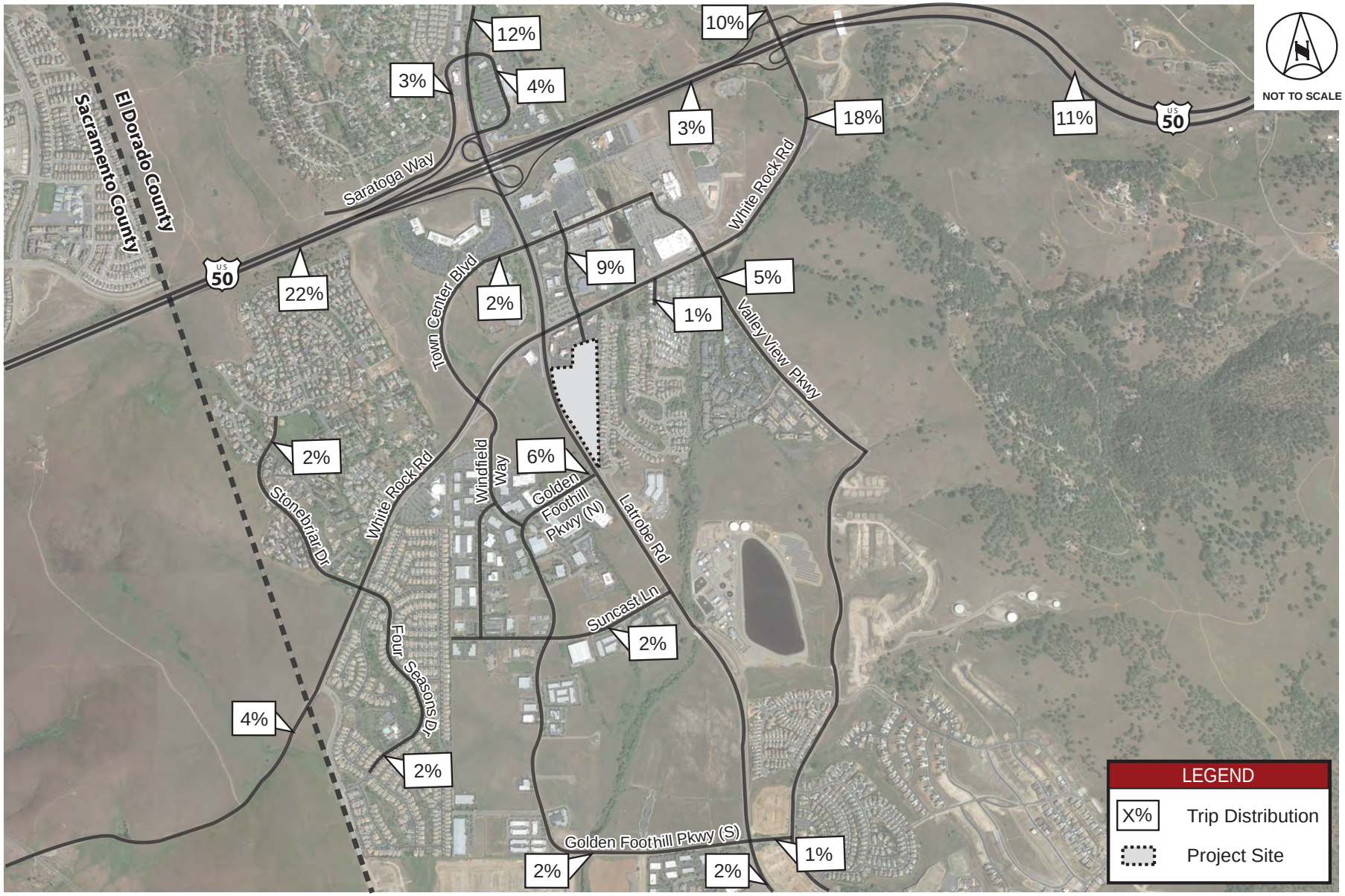

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Figure 5
Existing Proposed Project Trip Distribution

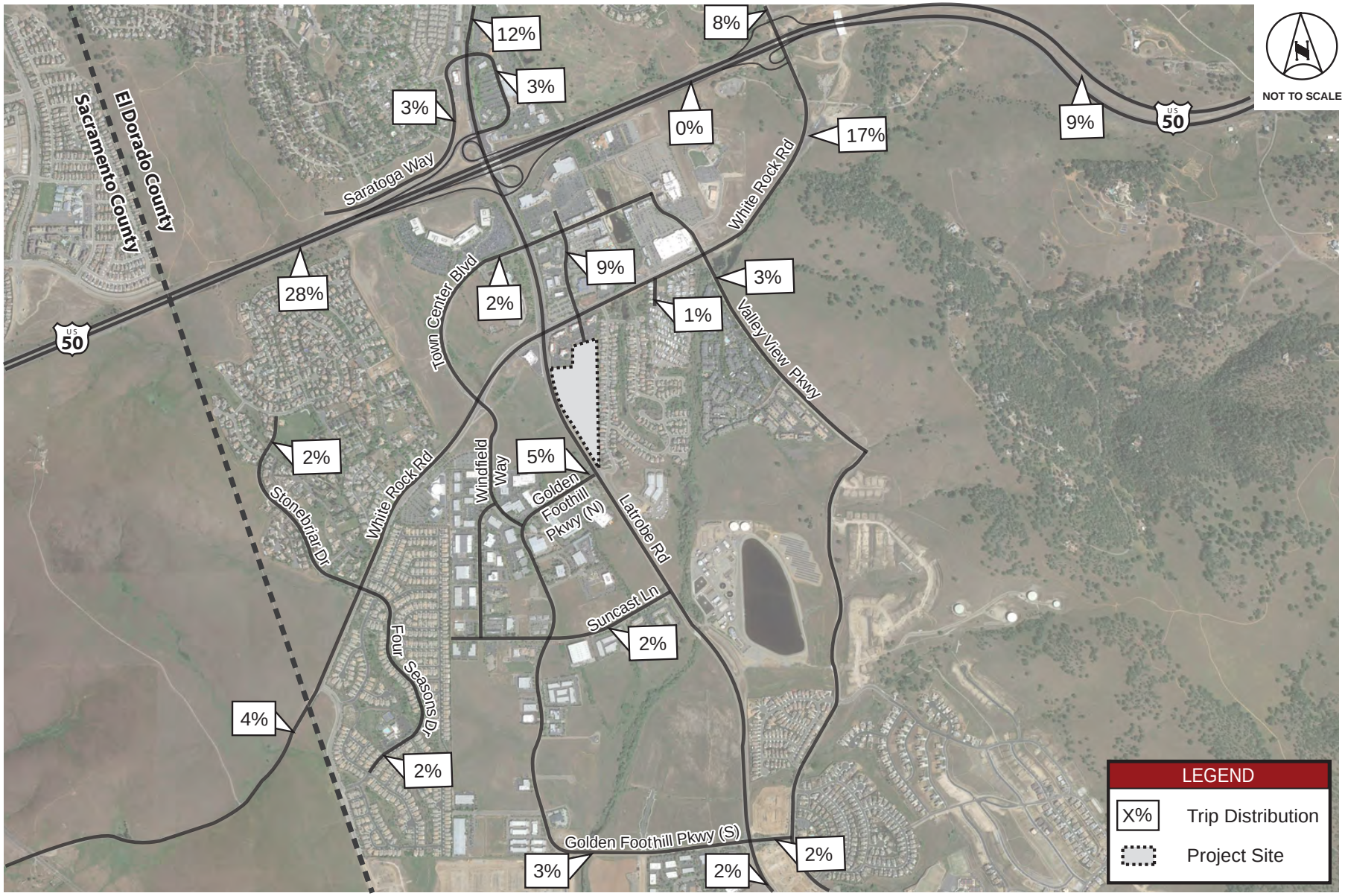

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Figure 6
Near Term (2025) Proposed Project Trip Distribution

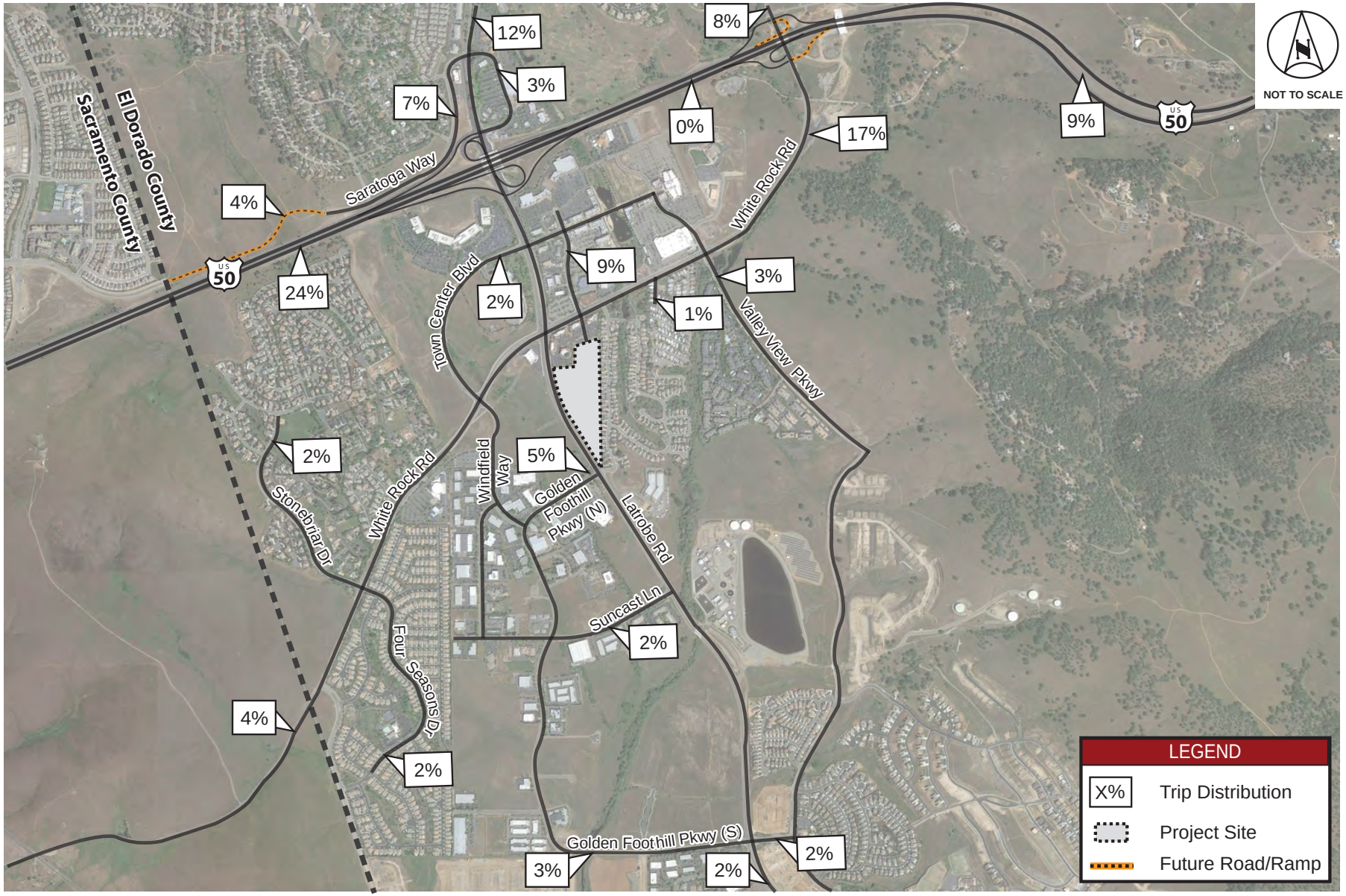

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Figure 7
Cumulative (2035) Proposed Project Trip Distribution

Intersection Analysis

The HCM includes procedures for analyzing side-street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection as a whole. Table 2 presents intersection LOS definitions as defined in the HCM.

Table 2 – Intersection Level of Service Criteria

Level of Service (LOS)	Un-Signalized	Signalized
	Average Control Delay* (sec/veh)	Average Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Source: Highway Capacity Manual, 2010

* Applied to the worst lane/lane group(s) for SSSC

Due to the close spacing of the El Dorado Hills Boulevard/Latrobe Road intersections in the vicinity of US-50 and along White Rock Road, LOS for Intersections #1-#7 and Intersections #12-13 was determined using the SimTraffic® micro-simulation analysis software. The existing conditions SimTraffic® models were originally provided by the County for use in this study[7]. These models were validated based on field observations of traffic volumes, driver behavior, lane utilization, and maximum vehicle queue lengths. As a result of these observations, adjustments were incorporated that improve the accuracy of the vehicles' behavior as they position for downstream turns. SimTraffic® measures of effectiveness are compared against the HCM intersection delay thresholds to equate SimTraffic® results to HCM LOS. For this simulation effort, a seed time of 10 minutes was used and 10 runs were averaged to obtain the results. LOS for the remaining study intersections was determined using the Synchro® traffic analysis software.

Roadway Segment Analysis

The HCM also includes procedures for analyzing multi-lane and two-lane roadway segments. The Latrobe Road study roadway segment is a multi-lane roadway. The study segments along White Rock Road are either a Class III two-lane or a multi-lane roadway, depending on the location and analysis scenario. For multilane roadways segments, LOS is determined based on the density of the traffic stream. For two-lane highways, the LOS calculation is dependent on the class of the roadway. Class I two-lane highways are highways generally have high speeds, Class II two-lane highways are lower speed highways that typically serve scenic routes or areas of rugged terrain, and Class III two-lane highways typically serve moderately developed areas with higher densities of local traffic and access. Specifically, for Class III highways, the percent of free-flow speed, which is the measure representing the ability of vehicles to travel at the posted speed limit, is used to determine LOS. The LOS criteria for multi-lane and two-lane roadway segments are shown in Table 3 and Table 4, respectively.

[7] Email from Natalie Porter, El Dorado County Community Development Agency, October 24, 2014.

Table 3 – Multi-Lane Roadway Segment Level of Service Criteria

Level of Service (LOS)	Free Flow Speed (mph)	Density (pc/mi/ln)
A	All	> 0 – 11
B	All	> 11 – 18
C	All	> 18 – 26
D	All	> 26 – 35
E	60 55 50 45	> 35 – 40 > 35 – 41 > 35 – 43 > 35 – 45
F (demand exceeds capacity)	60 55 50 45	> 40 > 41 > 43 > 45

Source: Highway Capacity Manual, 2010

Table 4 – Two-Lane Roadway Segment (Class III) Level of Service Criteria

Level of Service (LOS)	Percent Free-Flow Speed (%)
A	> 91.7
B	> 83.3 – 91.7
C	> 75.0 – 83.3
D	> 66.7 – 75.0
E	≤ 66.7

Source: Highway Capacity Manual, 2010

Freeway Facility Analysis

Caltrans' traffic study guidelines[8] specify the use of vehicle density (passenger cars/mile/lane) as the appropriate measure of effectiveness for freeway facilities. The LOS criteria for basic freeway segments and freeway merge/diverge segments are summarized in Table 5. We understand that Caltrans District 3 prefers weaving sections to be analyzed using the Leisch Method[9]. As such, the freeway weaving sections in this study are evaluated using this methodology.

Table 5 – Freeway Facility Level of Service Criteria

Level of Service (LOS)	Basic Segments Density (pc/mi/ln)	Merge/Diverge Segments Density (pc/mi/ln)
A	≤ 11	≤ 10
B	> 11 – 18	> 10 – 20
C	> 18 – 26	> 20 – 28
D	> 26 – 35	> 28 – 35
E	> 35 – 45	> 35
F*	> 45*	*

Source: Highway Capacity Manual, 2010
* Demand exceeds capacity

[8] *Guide for the Preparation of Traffic Impact Studies*, Caltrans, December 2002.
[9] *Procedure for Analysis and Design of Weaving Sections,* Federal Highway Administration, February 1984.

Land Use Consistency and Analysis Scenarios

The current iteration of the County's TDM was used to assist in determining the proposed project's consistency with the County's growth assumptions for Traffic Analysis Zone (TAZ) 172. It was determined that the County's TDM includes a total of 140 employees within the subject TAZ for the existing year (2010). There is nominal growth depicted in the County's future year (2035) land use (from 140 to 158 employees), although this minor increase was confirmed to only account for the two commercial buildings that were recently constructed along White Rock Road[10]. As such, the TDM does not account for the project's proposed land uses and, because the County's TDM does not assume the project's employment growth in TAZ 172, the *General Plan's* cumulative traffic analysis cannot serve as the basis for the cumulative (2035) traffic analysis of the project. As such, Cumulative (2035) conditions (with and without the proposed project) are included in this evaluation. Accordingly, this LOS analysis was conducted for the study facilities for the following scenarios:

A. Existing Conditions
B. Existing plus Proposed Project Conditions
C. Near-Term (2025) Conditions
D. Near-Term (2025) plus Proposed Project Conditions
E. Cumulative (2035) Conditions
F. Cumulative (2035) plus Proposed Project Conditions

EXISTING CONDITIONS

New weekday AM and PM peak-period intersection turning movement traffic counts were conducted in November 2015 for study intersections #7-#11, #13-#14. These counts were conducted between the hours of 6:30 a.m. and 9:30 a.m., and 4:00 p.m. and 7:00 p.m. Of the other nine study intersections, one does not exist today (#6) and additional new weekday AM and PM peak-period intersection turning movement traffic counts were conducted in March 2017 for study intersections #1-#5, and #12. These counts were conducted between the hours of 6:00 a.m. and 9:00 a.m., and 4:00 a.m. and 7:00 p.m. Intersection turning movement traffic volumes for the US-50 westbound and eastbound ramps at Silva Valley Parkway (intersections #15 and #16, respectively) were collected in December 2016[11]. Freeway mainline volumes were obtained from Caltrans' Performance Measurement System[12] (PeMS) using data from March 2015 and October 2015. When combined with the aforementioned recent study, ramp terminal intersection turning movements, weaving segments, and merge/diverge sections were also able to be evaluated.

Existing peak-hour turn movement volumes are presented in Figure 8, and the traffic count data sheets are provided in Appendix A. Analysis worksheets for this scenario are provided in Appendix B.

Intersections

Table 6 presents the intersection operating conditions for this analysis scenario. As indicated in Table 6, the study intersections operate from LOS A to LOS F.

[10] Per telephone conversation with Katie Jackson, El Dorado County Community Development Agency, August 11, 2015.
[11] Per data provided by Cameron Shew, DKS, July 23, 2018.
[12] http://pems.dot.ca.gov/

Table 6 – Existing Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Existing	
				Delay (sec)	LOS
1	El Dorado Hills Blvd @ Saratoga Way/Park Dr	Signal	AM	12.9	B
			PM	22.6	C
2	El Dorado Hills Blvd @ US-50 WB Ramps	Signal	AM	30.9	C
			PM	44.2	D
3	Latrobe Rd @ US-50 EB Ramps	Signal	AM	14.5	B
			PM	13.7	B
4	Latrobe Rd @ Town Center Blvd	Signal	AM	16.3	B
			PM	48.3	D
5	Latrobe Rd @ White Rock Rd	Signal	AM	33.2	C
			PM	33.4	C
6	Latrobe Rd @ Project Driveway	SSSC*	AM	-	-
			PM	-	-
7	Latrobe Rd @ Golden Foothill Pkwy (N)	Signal	AM	13.0	B
			PM	16.5	B
8	Latrobe Rd @ Suncast Ln	Signal	AM	6.5	A
			PM	8.1	A
9	Latrobe Rd @ Golden Foothill Pkwy (S)	Signal	AM	59.5	E
			PM	**104.3**	**F**
10	White Rock Rd @ Stonebriar Dr/Four Seasons Dr	Signal	AM	22.8	C
			PM	12.0	B
11	White Rock Rd @ Windfield Way	Signal	AM	13.3	B
			PM	15.1	B
12	White Rock Rd @ Post St	Signal	AM	23.5	C
			PM	43.7	D
13	White Rock Rd @ Valley View Pkwy	Signal	AM	22.5	C
			PM	21.2	C
14	Silva Valley Pkwy @ Tong Rd	SSSC*	AM	0.0 (9.4 WB)	A
			PM	0 (0.0 WB)	A
15	Silva Valley Pkwy @ US-50 WB Ramps	Signal	AM	47.4	D
			PM	52.5	D
16	Silva Valley Pkwy @ US-50 EB Ramps	Signal	AM	47.9	D
			PM	51.4	D

Notes:

Bold represents unacceptable operations.

*Side Street Stop Controlled (SSSC) intersections are reported with the intersection delay followed by the worst approach's delay. The reported LOS corresponds to the worst approach.

1	**2**	**3**	**4**
El Dorado Hills Blvd: 21 / 29; 1421 / 761; 146 / 164	El Dorado Hills Blvd: 665 / 319; 839 / 567; 50 / 30	Latrobe Rd: 1108 / 691; 212 / 181	Latrobe Rd: 297 / 15; 1454 / 925; 440 / 549
Saratoga Wy: 18 / 37; 9 / 25; 122 / 98	US-50 WB Ramps: 159 / 122; 69 / 70; 376 / 136	US-50 EB Ramps: 1083 / 798	Town Center Blvd: 11 / 299; 8 / 33; 6 / 67
Park Dr: 70 / 273; 10 / 18; 11 / 57	Saratoga Wy: 53 / 68; 82 / 82; 105 / 169	US-50 EB Ramps: 308 / 704	Town Center Blvd: 271 / 604; 30 / 6; 70 / 58
Park Dr: 71 / 122; 696 / 1265; 29 / 75	Saratoga Wy: 495 / 985; 584 / 1272; 148 / 300	US-50 EB Ramps: 919 / 1853; 166 / 491	Town Center Blvd: 61 / 2; 803 / 1441; 92 / 149
5	**6**	**7**	**8**
Latrobe Rd: 326 / 223; 1112 / 584; 92 / 243	PROJECT INTERSECTION	Latrobe Rd: 358 / 105; 1108 / 744; 4 / 15	Latrobe Rd: 160 / 84; 966 / 595
White Rock Rd: 120 / 194; 227 / 170; 298 / 194		Monte Verde Dr: 12 / 10; 4 / 2; 9 / 10	
White Rock Rd: 84 / 73; 601 / 1049; 131 / 346		Monte Verde Dr: 23 / 4; 690 / 1124; 3 / 7	
9	**10**	**11**	**12**
Latrobe Rd: 421 / 98; 409 / 342; 141 / 176	Stonebriar Dr: 45 / 18; 1 / 1; 79 / 42	Town Center Blvd	Post St: 104 / 175; 11 / 15; 40 / 186
Clubview Dr: 201 / 122; 42 / 17; 9 / 3	White Rock Rd: 58 / 84; 392 / 589; 12 / 47	White Rock Rd: 337 / 367; 300 / 99	White Rock Rd: 204 / 178; 509 / 333; 42 / 43
Golden Foothill Pkwy (N): 105 / 402; 24 / 34; 5 / 9	Four Seasons Dr: 8 / 36; 359 / 481; 4 / 16	Windfield Wy: 303 / 532; 115 / 71	Driveway: 75 / 205; 226 / 699; 9 / 21
Golden Foothill Pkwy (N): 9 / 3; 329 / 524; 4 / 3	Four Seasons Dr: 10 / 11; 0 / 2; 29 / 36	White Rock Rd: 53 / 238; 79 / 239	White Rock Rd: 32 / 50; 4 / 16; 20 / 29
13	**14**	**15**	**16**
Vine St: 44 / 61; 9 / 48; 10 / 164	Silva Valley Pkwy: 564 / 316	Silva Valley Pkwy: 431 / 170; 264 / 186	Silva Valley Pkwy: 119 / 87; 547 / 350
White Rock Rd: 56 / 69; 540 / 385; 59 / 36	Tong Rd: 3 / 0	US-50 WB Ramps: 102 / 151; 394 / 250	US-50 EB Ramps
Valley View Pkwy: 56 / 43; 167 / 697; 63 / 174	Tong Rd: 267 / 654; 4 / 0	US-50 WB Ramps: 58 / 52; 331 / 887	White Rock Rd: 79 / 433; 19 / 46
Valley View Pkwy: 171 / 108; 25 / 29; 88 / 45			US-50 EB Ramps: 119 / 308; 308 / 491

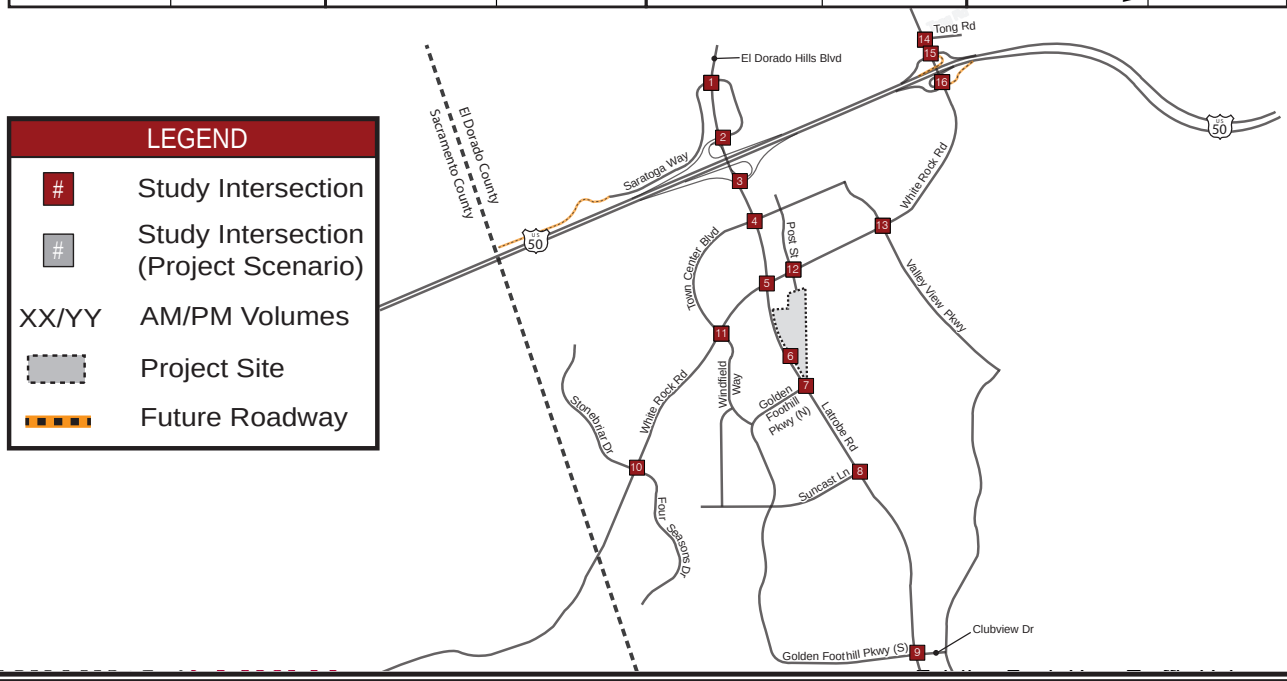

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Figure 8
Existing Peak-Hour Traffic Volumes

Roadway Segments

Table 7 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 7, the study roadway segments operate from LOS A to LOS D.

Table 7 – Existing Roadway Segment Levels of Service

Scenario	Location	Peak-Hour	Analysis Direction	LOS	D (pc/mi/ln)	PFFS (%)	v/c
Existing	Latrobe Road, White Rock to Golden Foothills (N)	AM	NB	A	10.0	-	-
			SB	B	16.1	-	-
		PM	NB	C	19.2	-	-
			SB	A	7.8	-	-
	White Rock Road, Latrobe to Post	AM	EB	A	4.8	-	-
			WB	A	8.1	-	-
		PM	EB	A	10.9	-	-
			WB	A	7.0	-	-
	White Rock Road, Post to Valley View	AM	EB	C	-	76.7	0.19
			WB	D	-	73.2	0.44
		PM	EB	D	-	71.7	0.43
			WB	D	-	74.0	0.32

Notes:
D = Density, PFFS = Percent Free-Flow Speed, v/c = Volume to Capacity

Freeway Facilities

Table 8 presents the freeway facility operating conditions for this analysis scenario. As indicated in Table 8, the freeway facilities operate from LOS A to LOS E.

Table 8 – Existing Freeway Facility Levels of Service

US-50				Existing	
Direction	Segment	Type	Peak Hour	Density[a]	LOS
Eastbound	West of Latrobe Rd Southbound Off- Ramp	Basic	AM	13.3	B
			PM	23.2	C
	Latrobe Rd Southbound Off-Ramp	Diverge	AM	20.1	C
			PM	25.7	C
	El Dorado Hills Blvd Northbound Off-Ramp	Diverge	AM	14.5	B
			PM	27.1	C
	El Dorado Hills Blvd Northbound Off-Ramp to Latrobe Rd On-Ramp	Basic	AM	6.6	A
			PM	14.4	B
	Latrobe Rd On-Ramp	Merge	AM	14.4	B
			PM	24.9	C
	East of Latrobe Rd On-Ramp	Weave[c]	AM	8.4	A
			PM	-	B
	Silva Valley Pkwy Southbound Off-Ramp	Diverge	AM	14.4	B
			PM	26.4	C
	Silva Valley Pkwy Southbound Off-Ramp to Silva Valley Pkwy Northbound On-Ramp	Basic	AM	7.9	A
			PM	15.4	B
	Silva Valley Pkwy Northbound On-Ramp	Merge	AM	12.0	B
			PM	21.2	C
	East of Silva Valley Pkwy Northbound On-Ramp	Basic	AM	9.1	A
			PM	17.5	B
Westbound	Silva Valley Pkwy Northbound Off-Ramp	Diverge	AM	24.1	C
			PM	18.1	B
	Silva Valley Pkwy Northbound Off-Ramp to Silva Valley Pkwy Southbound On-Ramp	Basic	AM	20.4	C
			PM	13.0	B
	Silva Valley Pkwy Southbound On-Ramp	Merge	AM	27.6	C
			PM	17.5	B
	Silva Valley Pkwy Southbound On-Ramp to El Dorado Hills Blvd Off-Ramp	Weave[c]	AM	15.7	B
			PM	9.9	A
	El Dorado Hills Blvd Off-Ramp	Diverge	AM	24.0	C
			PM	16.5	B
	El Dorado Hills Blvd Off-Ramp to El Dorado Hills Blvd On-Ramp	Basic	AM	19.4	C
			PM	12.2	B
	El Dorado Hills Blvd On-Ramp	Merge	AM	32.8	D
			PM	26.1	C
	West of El Dorado Hills Blvd On-Ramp	Basic	AM	34.4	D
			PM	24.2	C

Notes:

a- Density measured in passenger cars/lane/mile (pc/ln/mi)

b- **Bold** represents unacceptable operations

c- Weave segment LOS calculated using Leisch Method

EXISTING PLUS PROPOSED PROJECT CONDITIONS

The number of trips estimated to be generated by the proposed project were determined using the ITE *Trip Generation Manual* and were then assigned to the surrounding transportation network based on the results of a select link analysis completed using a version the El Dorado County TDM prepared specifically for this scenario. Background traffic estimates were developed in accordance with the methods previously described in the Land Use Consistency and Analysis Scenarios section of this report. Using these volumes, levels of service were determined at the study facilities. Existing plus Proposed Project peak-hour turn movement volumes are presented in Figure 9. Analysis worksheets for this scenario are provided in Appendix C.

Intersections

Table 9 presents the intersection operating conditions for this analysis scenario. As indicated in Table 9, the study intersections operate from LOS A to LOS F.

Table 9 – Existing plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Existing		Existing plus Proposed Project	
				Delay (sec)	LOS	Delay (sec)	LOS
1	El Dorado Hills Blvd @ Saratoga Way/Park Dr	Signal	AM	12.9	B	13.9	B
			PM	22.6	C	23.4	C
2	El Dorado Hills Blvd @ US-50 WB Ramps	Signal	AM	30.9	C	32.5	C
			PM	44.2	D	45.0	D
3	Latrobe Rd @ US-50 EB Ramps	Signal	AM	14.5	B	20.1	C
			PM	13.7	B	14.8	B
4	Latrobe Rd @ Town Center Blvd	Signal	AM	16.3	B	25.9	C
			PM	48.3	D	52.7	D
5	Latrobe Rd @ White Rock Rd	Signal	AM	33.2	C	34.7	C
			PM	33.4	C	49.6	D
6	Latrobe Rd @ Project Driveway	SSSC*	AM	-	-	0.1 (11.8 WB)	B
			PM	-	-	0.7 (19.5 WB)	C
7	Latrobe Rd @ Golden Foothill Pkwy (N)	Signal	AM	13.0	B	14.5	B
			PM	16.5	B	34.8	C
8	Latrobe Rd @ Suncast Ln	Signal	AM	6.5	A	6.7	A
			PM	8.1	A	8.4	A
9	Latrobe Rd @ Golden Foothill Pkwy (S)	Signal	AM	59.5	E	24.2	C
			PM	**104.3**	**F**	**108.2**	**F**
10	White Rock Rd @ Stonebriar Dr/Four Seasons Dr	Signal	AM	22.8	C	24.0	C
			PM	12.0	B	12.3	B
11	White Rock Rd @ Windfield Way	Signal	AM	13.3	B	13.3	B
			PM	15.1	B	15.2	B
12	White Rock Rd @ Post St	Signal	AM	23.5	C	32.1	C
			PM	43.7	D	69.9	E
13	White Rock Rd @ Valley View Pkwy	Signal	AM	22.5	C	28.5	C
			PM	21.2	C	24.5	C
14	Silva Valley Pkwy @ Tong Rd	SSSC*	AM	0.0 (9.4 WB)	A	0.0 (9.4 WB)	A
			PM	0 (0.0 WB)	A	0 (0.0 WB)	A
15	Silva Valley Pkwy @ US-50 WB Ramps	Signal	AM	47.4	D	47.3	D
			PM	52.5	D	52.5	D
16	Silva Valley Pkwy @ US-50 EB Ramps	Signal	AM	47.9	D	47.7	D
			PM	51.4	D	50.8	D

Notes:

Bold represents unacceptable operations. Shaded represents significant impact.

*Side Street Stop Controlled (SSSC) intersections are reported with the intersection delay followed by the worst approach's delay. The reported LOS corresponds to the worst approach.

1

	El Dorado Hills Blvd: 21 / 29 ⇦, 1429 / 781 ⇩, 146 / 164 ⇨	
Saratoga Wy: 18 / 37 ⇦, 9 / 25 ⇧, 124 / 103 ⇨		Park Dr: 70 / 273 ⇦, 10 / 18 ⇧, 11 / 57 ⇨; 72 / 127 ⇦, 701 / 1287 ⇧, 29 / 75 ⇨

2

	El Dorado Hills Blvd: 665 / 319 ⇦, 849 / 592 ⇩, 50 / 30 ⇨	
US-50 WB Ramps: 159 / 122 ⇦, 69 / 70 ⇧, 378 / 141 ⇨		Saratoga Wy: 53 / 68 ⇦, 82 / 82 ⇧, 107 / 175 ⇨; 505 / 1026 ⇦, 590 / 1299 ⇧, 149 / 307 ⇨

3

	Latrobe Rd: 1122 / 727 ⇩, 212 / 181 ⇨	
1098 / 837 ⇦		US-50 EB Ramps: 308 / 704 ⇧; 936 / 1928 ⇧, 167 / 496 ⇨

4

	Latrobe Rd: 297 / 15 ⇦, 1483 / 999 ⇩, 440 / 549 ⇨	
11 / 299 ⇦, 8 / 33 ⇧, 7 / 70 ⇨		Town Center Blvd: 271 / 604 ⇦, 30 / 6 ⇧, 70 / 58 ⇨; 62 / 6 ⇦, 821 / 1521 ⇧, 92 / 149 ⇨

5

	Latrobe Rd: 326 / 223 ⇦, 1125 / 618 ⇩, 108 / 286 ⇨	
235 / 349 ⇦, 90 / 345 ⇧, 61 / 89 ⇨		White Rock Rd: 131 / 248 ⇦, 227 / 170 ⇧, 310 / 218 ⇨; 94 / 107* ⇦, 609 / 1078 ⇧, 131 / 346 ⇨

6

	Latrobe Rd: 1489 / 909 ⇩, 14 / 37 ⇨	
		Project Driveway: 17 / 64 ⇧; 816 / 1468 ⇧, 26 / 45 ⇨

7

	Latrobe Rd: 370 / 131 ⇦, 1115 / 763 ⇩, 4 / 15 ⇨	
Golden Foothill Pkwy (N): 130 / 360 ⇦, 1 / 7 ⇧, 7 / 10 ⇨		Monte Verde Dr: 12 / 10 ⇦, 4 / 2 ⇧, 9 / 10 ⇨; 23 / 4 ⇦, 700 / 1143 ⇧, 3 / 7 ⇨

8

	Latrobe Rd: 163 / 92 ⇦, 970 / 606 ⇩	
Suncast Ln: 50 / 180 ⇦, 7 / 21 ⇨		20 / 3 ⇦, 622 / 1067 ⇧

9

	Latrobe Rd: 423 / 104 ⇦, 411 / 345 ⇩, 141 / 178 ⇨	
Golden Foothill Pkwy (N): 108 / 408 ⇦, 24 / 34 ⇧, 5 / 9 ⇨		Clubview Dr: 202 / 124 ⇦, 42 / 17 ⇧, 9 / 3 ⇨; 9 / 3 ⇦, 330 / 527 ⇧, 4 / 3 ⇨

10

	White Rock Rd: 45 / 18 ⇦, 1 / 1 ⇩, 80 / 45 ⇨	
Stonebriar Dr: 8 / 36 ⇦, 361 / 487 ⇧, 4 / 16 ⇨		Four Seasons Dr: 59 / 87 ⇦, 393 / 596 ⇧, 13 / 50 ⇨; 10 / 11 ⇦, 0 / 2 ⇧, 30 / 39 ⇨

11

	White Rock Rd	
Town Center Blvd: 307 / 544 ⇦, 115 / 71 ⇨		Windfield Wy: 340 / 380 ⇦, 300 / 99 ⇨; 53 / 238 ⇦, 79 / 239 ⇨

12

	Post St: 104 / 175 ⇦, 16 / 29 ⇩, 40 / 186 ⇨	
Driveway: 75 / 205 ⇦, 226 / 699 ⇧, 28 / 73 ⇨		White Rock Rd: 204 / 178 ⇦, 509 / 333 ⇧, 55 / 81 ⇨; 55 / 128 ⇦, 7 / 31 ⇧, 28 / 69 ⇨

13

	Vine St: 44 / 61 ⇦, 9 / 48 ⇩, 10 / 164 ⇨	
Valley View Pkwy: 56 / 43 ⇦, 173 / 728 ⇧, 65 / 182 ⇨		White Rock Rd: 56 / 69 ⇦, 551 / 413 ⇧, 59 / 36 ⇨; 174 / 116 ⇦, 25 / 29 ⇧, 88 / 45 ⇨

14

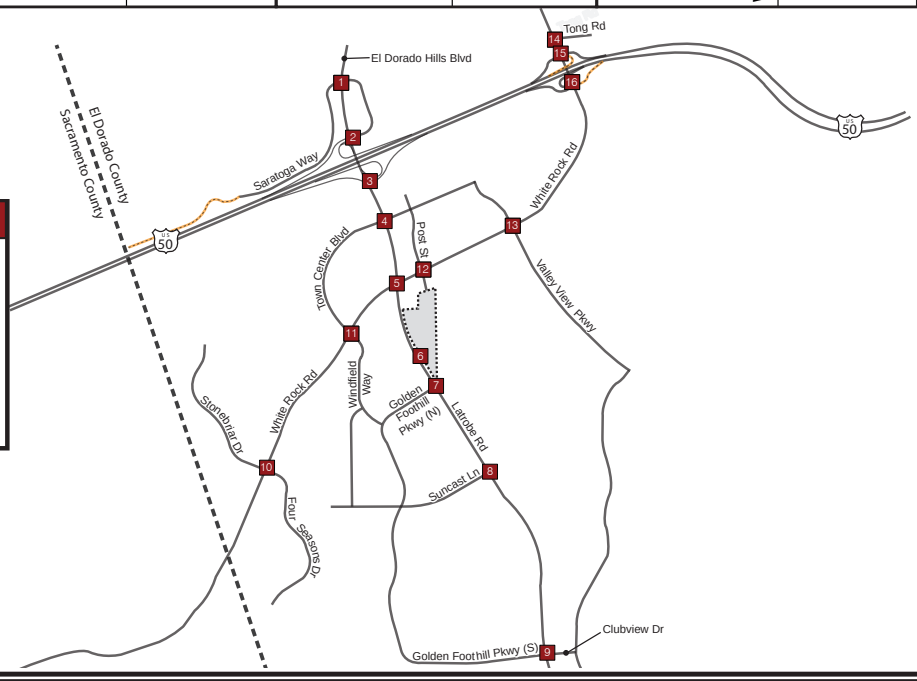
	Silva Valley Pkwy: 569 / 332 ⇩	
		Tong Rd: 3 / 0 ⇧; 270 / 671 ⇧, 4 / 0 ⇨

15

	Silva Valley Pkwy: 431 / 170 ⇦, 269 / 202 ⇩	
		US-50 WB Ramps: 102 / 151 ⇧; 398 / 262 ⇨; 58 / 52 ⇦, 334 / 904 ⇧

16

	Silva Valley Pkwy: 119 / 87 ⇦, 557 / 378 ⇩	
White Rock Rd: 79 / 433 ⇦, 19 / 46 ⇨		US-50 EB Ramps: 122 / 321 ⇦, 311 / 508 ⇧



LEGEND

#	Study Intersection
XX/YY	AM/PM Volumes
	Project Site
	Future Roadway

*Includes 7 northbound u-turns

Figure 9
Existing Plus Proposed Project Peak-Hour Traffic Volumes

Roadway Segments

Table 10 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 10, the study roadway segments operate from LOS A to LOS E.

Table 10 – Existing plus Proposed Project Roadway Segment Levels of Service

Scenario	Location	Peak-Hour	Analysis Direction	LOS	D (pc/mi/ln)	PFFS (%)	v/c
Existing plus Proposed Project	Latrobe Road, White Rock to Golden Foothills (N)	AM	NB	A	9.2		
			SB	C	20		
		PM	NB	B	15.5		
			SB	B	11.4		
	White Rock Road, Latrobe to Post	AM	EB	A	5		
			WB	A	8.4		
		PM	EB	B	13.3		
			WB	A	7.9		
	White Rock Road, Post to Valley View	AM	EB	D		73.6	0.24
			WB	D		71.7	0.49
		PM	EB	E		64.7	0.63
			WB	D		67.9	0.37

Notes:
D = Density, PFFS = Percent Free-Flow Speed, v/c = Volume to Capacity

Freeway Facilities

Table 11 presents the freeway facility operating conditions for this analysis scenario. As indicated in Table 11, the freeway facilities operate from LOS A to LOS D.

Table 11 – Existing plus Proposed Project Freeway Facility Levels of Service

US-50				Existing		Existing plus Project	
Direction	Segment	Type	Peak Hour	Density[a]	LOS	Density[a]	LOS
Eastbound	West of Latrobe Rd Southbound Off- Ramp	Basic	AM	13.3	B	13.3	B
			PM	23.2	C	23.5	C
	Latrobe Rd Southbound Off-Ramp	Diverge	AM	20.1	C	20.2	C
			PM	25.7	C	26.1	C
	El Dorado Hills Blvd Northbound Off-Ramp	Diverge	AM	14.5	B	14.5	B
			PM	27.1	C	27.1	C
	El Dorado Hills Blvd Northbound Off-Ramp to Latrobe Rd On-Ramp	Basic	AM	6.6	A	6.6	A
			PM	14.4	B	14.4	B
	Latrobe Rd On-Ramp	Merge	AM	14.4	B	14.4	B
			PM	24.9	C	25.0	C
	East of Latrobe Rd On-Ramp	Weave[c]	AM	8.4	A	8.4	A
			PM	-	B	-	B
	Silva Valley Pkwy Southbound Off-Ramp	Diverge	AM	14.4	B	14.5	B
			PM	26.4	C	26.4	C
	Silva Valley Pkwy Southbound Off-Ramp to Silva Valley Pkwy Northbound On-Ramp	Basic	AM	7.9	A	7.9	A
			PM	15.4	B	15.4	B
	Silva Valley Pkwy Northbound On-Ramp	Merge	AM	12.0	B	12.1	B
			PM	21.2	C	21.3	C
	East of Silva Valley Pkwy Northbound On-Ramp	Basic	AM	9.1	A	9.1	A
			PM	17.5	B	17.6	B
Westbound	Silva Valley Pkwy Northbound Off-Ramp	Diverge	AM	24.1	C	24.2	C
			PM	18.1	B	18.3	B
	Silva Valley Pkwy Northbound Off-Ramp to Silva Valley Pkwy Southbound On-Ramp	Basic	AM	20.4	C	20.5	C
			PM	13.0	B	13.0	B
	Silva Valley Pkwy Southbound On-Ramp	Merge	AM	27.6	C	27.6	C
			PM	17.5	B	17.5	B
	Silva Valley Pkwy Southbound On-Ramp to El Dorado Hills Blvd Off-Ramp	Weave[c]	AM	15.7	B	15.7	B
			PM	9.9	A	9.9	A
	El Dorado Hills Blvd Off-Ramp	Diverge	AM	24.0	C	24.0	C
			PM	16.5	B	16.6	B
	El Dorado Hills Blvd Off-Ramp to El Dorado Hills Blvd On-Ramp	Basic	AM	19.4	C	19.4	C
			PM	12.2	B	12.2	B
	El Dorado Hills Blvd On-Ramp	Merge	AM	32.8	D	32.9	D
			PM	26.1	C	26.5	C
	West of El Dorado Hills Blvd On-Ramp	Basic	AM	34.4	D	34.6	D
			PM	24.2	C	24.7	C

Notes:

a- Density measured in passenger cars/lane/mile (pc/ln/mi)

b- **Bold** represents unacceptable operations. Shaded represents significant impact.

c- Weave segment LOS calculated using Leisch Method

NEAR-TERM (2025) CONDITIONS

Based on the availability of model data and as directed by the County, traffic volume estimates for the Near-Term (2025) Condition were determined by interpolating select El Dorado County TDM 2010 and 2035 analysis results. Specifically, these volumes were achieved by estimating turn movements using 2010 and 2035 land use scenarios and then conducting a straight-line analysis to establish year 2025 turn movement estimates. The difference between the resulting 2025 traffic estimate and the 2010 model results (the growth) was then added to Existing traffic volumes to establish base Near-Term (2025) traffic estimates for this study. In addition, the John Adams Academy is assumed to be developed under Near-Term (2025) conditions. As such, John Adams Academy project trips[13] were added to Near-Term (2025) "no-project" conditions. Near-Term (2025) lane geometries and peak-hour turning movement volumes are presented in Figure 10 and Figure 11, respectively. Analysis worksheets for this scenario are provided in Appendix D.

Intersections

Table 12 presents the intersection operating conditions for this analysis scenario. As indicated in Table 12, the study intersections operate from LOS A to LOS F.

Roadway Segments

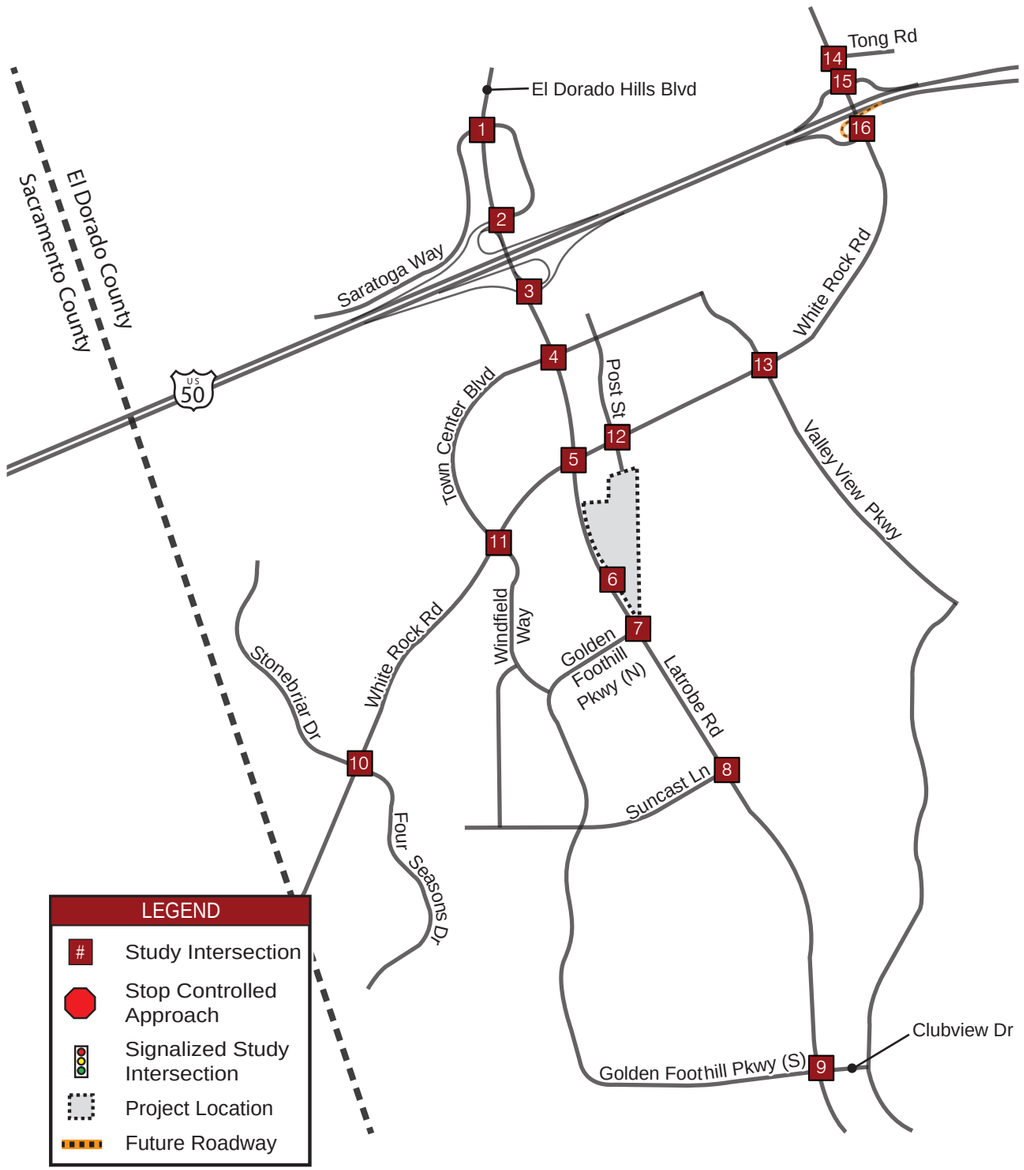
Table 13 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 13, the study roadway segments operate from LOS A to LOS E.

Freeway Facilities

Table 14 presents the freeway facility operating conditions for this analysis scenario. As indicated in Table 14, the freeway facilities operate from LOS A to LOS E.

[13] *John Adams Academy Transportation Impact Study,* El Dorado Hills, California, Kimley-Horn and Associates, March 29, 2018.

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)



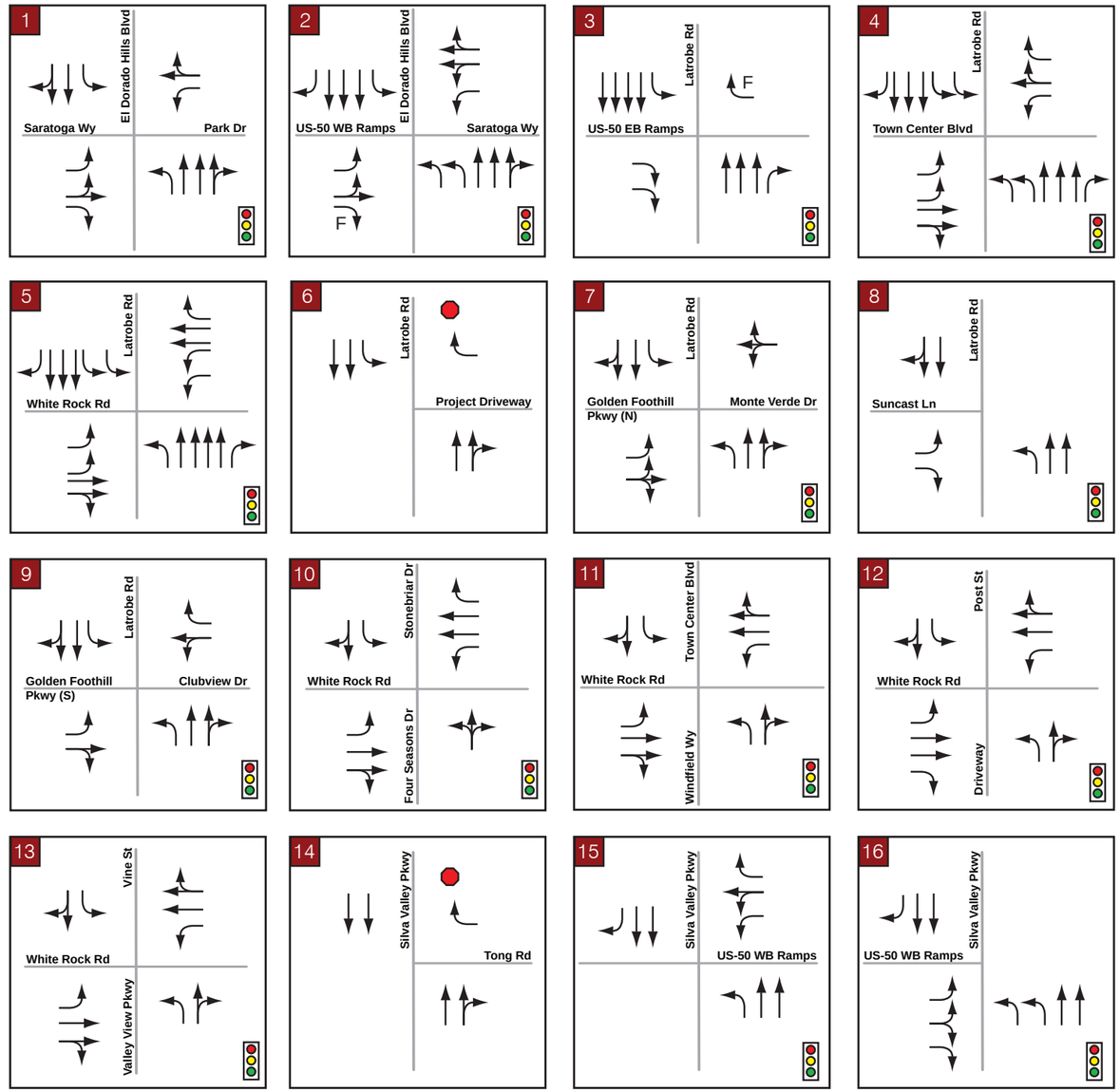


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Figure 10
Near Term (2025) Conditions Lane Geometries

1	**2**	**3**	**4**
El Dorado Hills Blvd: 80 / 40, 1517 / 863, 170 / 200	El Dorado Hills Blvd: 510 / 200, 1226 / 1035, 30 / 20	Latrobe Rd: 1402 / 1073, 250 / 220	Latrobe Rd: 360 / 50, 1692 / 991, 510 / 610
Saratoga Wy: 50 / 170, 70 / 200, 139 / 222	US-50 WB Ramps: 130 / 100, 110 / 100, 316 / 88	US-50 EB Ramps: 1170 / 568	Town Center Blvd: 60 / 0, 1112 / 1707, 90 / 150
Park Dr: 120 / 300, 110 / 60, 100 / 170 / 127 / 132, 771 / 1226, 10 / 50	Saratoga Wy: 50 / 40, 150 / 170, 110 / 170 / 549 / 1090, 728 / 1248, 150 / 310	US-50 EB Ramps: 260 / 500 / 1177 / 2148, 326 / 619	Town Center Blvd: 340 / 710, 30 / 10, 100 / 70
5	**6**	**7**	**8**
Latrobe Rd: 490 / 230, 1212 / 631, 100 / 250	PROJECT INTERSECTION	Latrobe Rd: 330 / 100, 1557 / 996, 0 / 20	Latrobe Rd: 270 / 140, 1317 / 836
White Rock Rd: 140 / 210, 410 / 280, 605 / 394		Golden Foothill Pkwy (N): 160 / 300, 0 / 10, 10 / 20	Suncast Ln: 80 / 250, 83 / 53
270 / 460, 120 / 520, 80 / 90 / 150 / 90, 862 / 1197, 293 / 429		Monte Verde Dr: 10 / 10, 10 / 10, 10 / 10 / 40 / 10, 1115 / 1386, 10 / 10	97 / 35, 1055 / 1206
9	**10**	**11**	**12**
Latrobe Rd: 410 / 80, 829 / 588, 160 / 220	Stonebriar Dr: 70 / 30, 90 / 60	Town Center Blvd: 10 / 30, 10 / 10	Post St: 130 / 210, 10 / 10, 40 / 180
Golden Foothill Pkwy (N): 100 / 360, 70 / 150, 60 / 80	Four Seasons Dr: 20 / 50, 493 / 723, 10 / 30 / 40 / 20, 40 / 40	Windfield Wy: 20 / 20, 360 / 730, 203 / 113	Driveway: 110 / 250, 393 / 949, 10 / 20
Clubview Dr: 240 / 150, 160 / 60, 10 / 0 / 90 / 60, 812 / 731, 0 / 10	White Rock Rd: 60 / 100, 617 / 665, 20 / 60	White Rock Rd: 530 / 460, 520 / 130 / 127 / 295, 10 / 10, 100 / 350	White Rock Rd: 200 / 170, 1005 / 634, 40 / 40 / 30 / 60, 0 / 10, 20 / 30
13	**14**	**15**	**16**
Vine St: 40 / 60, 10 / 60, 40 / 190	Silva Valley Pkwy: 978 / 537	Silva Valley Pkwy: 590 / 250, 388 / 287	Silva Valley Pkwy: 100 / 100, 865 / 494
White Rock Rd: 110 / 120, 1005 / 694, 130 / 60	Tong Rd: 10 / 10 / 467 / 840, 10 / 10	US-50 WB Ramps: 130 / 210, 10 / 10, 578 / 307 / 20 / 20, 347 / 640	US-50 EB Ramps: 130 / 320, 20 / 20 / 186 / 359, 237 / 340
Valley View Pkwy: 60 / 40, 343 / 989, 60 / 170 / 170 / 110, 30 / 30, 110 / 130			

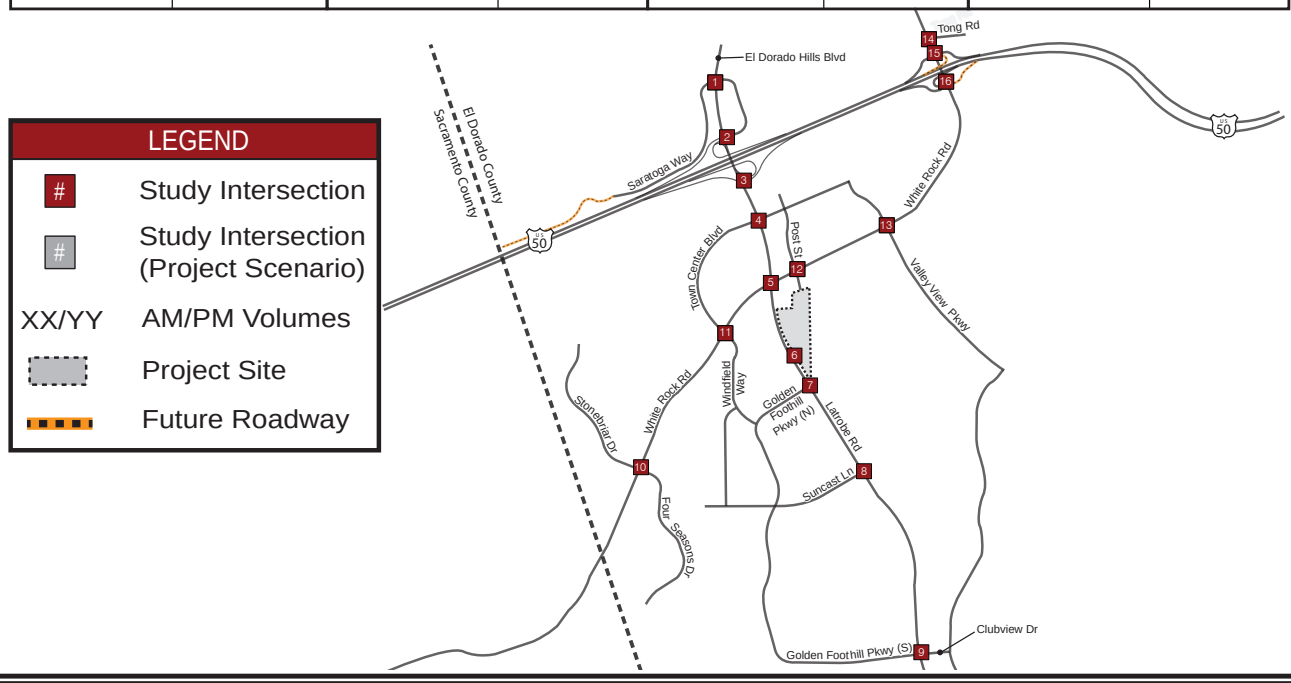

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Figure 11
Near Term (2025) Peak-Hour Traffic Volumes

Table 12 – Near-Term (2025) Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Near Term (2025)	
				Delay (sec)	LOS
1	El Dorado Hills Blvd @ Saratoga Way/Park Dr	Signal	AM	41.9	D
			PM	62.3	E
2	El Dorado Hills Blvd @ US-50 WB Ramps	Signal	AM	31.5	C
			PM	44.0	D
3	Latrobe Rd @ US-50 EB Ramps	Signal	AM	15.7	B
			PM	19.7	B
4	Latrobe Rd @ Town Center Blvd	Signal	AM	21.3	C
			PM	**101.3**	**F**
5	Latrobe Rd @ White Rock Rd	Signal	AM	45.7	D
			PM	**82.9**	**F**
6	Latrobe Rd @ Project Driveway	SSSC*	AM	-	-
			PM	-	-
7	Latrobe Rd @ Golden Foothill Pkwy (N)	Signal	AM	22.3	C
			PM	39.3	D
8	Latrobe Rd @ Suncast Ln	Signal	AM	10.1	B
			PM	10.5	B
9	Latrobe Rd @ Golden Foothill Pkwy (S)	Signal	AM	36.4	D
			PM	44.4	D
10	White Rock Rd @ Stonebriar Dr/Four Seasons Dr	Signal	AM	16.5	B
			PM	11.7	B
11	White Rock Rd @ Windfield Way	Signal	AM	72.7	E
			PM	27.9	C
12	White Rock Rd @ Post St	Signal	AM	35.8	D
			PM	40.9	D
13	White Rock Rd @ Valley View Pkwy	Signal	AM	79.6	E
			PM	26.1	C
14	Silva Valley Pkwy @ Tong Rd	SSSC*	AM	0.1 (9.9 WB)	A
			PM	0.1 (11.7 WB)	B
15	Silva Valley Pkwy @ US-50 WB Ramps	Signal	AM	47.3	D
			PM	19.5	B
16	Silva Valley Pkwy @ US-50 EB Ramps	Signal	AM	18.8	B
			PM	20.9	C

Notes:
Bold represents unacceptable operations.
*Side Street Stop Controlled (SSSC) intersections are reported with the intersection delay followed by the worst approach's delay. The reported LOS corresponds to the worst approach.

Table 13 – Near-Term (2025) Roadway Segment Levels of Service

Scenario	Location	Peak-Hour	Analysis Direction	LOS	D (pc/mi/ln)	PFFS (%)	v/c
Near-Term (2025)	Latrobe Road, White Rock to Golden Foothills (N)	AM	NB	B	13.2		
			SB	C	23.3		
		PM	NB	B	17.4		
			SB	B	13.7		
	White Rock Road, Latrobe to Post	AM	EB	A	6.6		
			WB	B	14.7		
		PM	EB	B	15.6		
			WB	B	11.3		
	White Rock Road, Post to Valley View	AM	EB	E		64.5	0.30
			WB	E		61.1	0.80
		PM	EB	E		57.0	0.77
			WB	E		57.7	0.54

Notes:
D = Density, PFFS = Percent Free-Flow Speed, v/c = Volume to Capacity

Table 14 – Near-Term (2025) Freeway Facility Levels of Service

US-50				Near-Term (2025)	
Direction	Segment	Type	Peak Hour	Density[a]	LOS
Eastbound	West of Latrobe Rd Southbound Off- Ramp	Basic	AM	14.2	B
			PM	20.7	C
	Latrobe Rd Southbound Off-Ramp	Diverge	AM	21.2	C
			PM	22.9	C
	El Dorado Hills Blvd Northbound Off-Ramp	Diverge	AM	15.2	B
			PM	25.9	C
	El Dorado Hills Blvd Northbound Off-Ramp to Latrobe Rd On-Ramp	Basic	AM	7.4	A
			PM	14.8	B
	Latrobe Rd On-Ramp	Merge	AM	16.7	B
			PM	26.6	C
	East of Latrobe Rd On-Ramp	Weave[c]	AM	10.1	A
			PM	-	B
	Silva Valley Pkwy Southbound Off-Ramp	Diverge	AM	16.8	B
			PM	27.3	C
	Silva Valley Pkwy Southbound Off-Ramp to Silva Valley Pkwy Northbound On-Ramp	Basic	AM	9.4	A
			PM	17.4	B
	Silva Valley Pkwy Northbound On-Ramp	Merge	AM	14.0	B
			PM	23.6	C
	East of Silva Valley Pkwy Northbound On-Ramp	Basic	AM	10.7	A
			PM	20.1	C
Westbound	East of Silva Valley Pkwy Northbound Off-Ramp	Weave[c]	AM	33.4	D
			PM	21.3	C
	Silva Valley Pkwy Northbound Off-Ramp	Diverge	AM	27.6	C
			PM	21.9	C
	Silva Valley Pkwy Northbound Off-Ramp to Silva Valley Pkwy Southbound On-Ramp	Basic	AM	24.1	C
			PM	16.7	B
	Silva Valley Pkwy Southbound On-Ramp	Merge	AM	31.7	D
			PM	22.1	C
	Silva Valley Pkwy Southbound On-Ramp to El Dorado Hills Blvd Off-Ramp	Weave[c]	AM	-	B
			PM	12.4	B
	El Dorado Hills Blvd Off-Ramp	Diverge	AM	26.4	C
			PM	19.6	B
	El Dorado Hills Blvd Off-Ramp to El Dorado Hills Blvd On-Ramp	Basic	AM	24.8	C
			PM	16.6	B
	El Dorado Hills Blvd On-Ramp	Merge	AM	37.0	E
			PM	31.5	D
	West of El Dorado Hills Blvd On-Ramp	Basic	AM	44.2	E
			PM	32.3	D

Notes: a- Density measured in passenger cars/lane/mile (pc/ln/mi); b - **Bold** represents unacceptable operations; c- Weave segment LOS calculated using Leisch Method

NEAR-TERM (2025) PLUS PROPOSED PROJECT CONDITIONS

The number of trips estimated to be generated by the proposed project were determined using the ITE *Trip Generation Manual* and were then assigned to the surrounding transportation network based on the results of a select link analysis completed using a version of the El Dorado County TDM prepared specifically for this scenario (based on the method outlined in the prior section). Background traffic estimates were developed in accordance with the methods previously described in the Land Use Consistency and Analysis Scenarios section of this report.

Consistent with other project analysis completed within the County, for the Near-Term (2025) and 2035 scenarios which include project conditions, analyses were prepared to include the difference between growth previously forecast for the project area and the planned project (to avoid double counting planned growth). Using these volumes, levels of service were determined at the study facilities. Near-Term (2025) plus Proposed Project peak-hour turn movement volumes are presented in Figure 12. Analysis worksheets for this scenario are provided in Appendix E.

Intersections

Table 15 presents the intersection operating conditions for this analysis scenario. As indicated in Table 15, the study intersections operate from LOS A to LOS F.

Table 15 – Near-Term (2025) plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Near Term (2025)		Near Term (2025) Plus Proposed Project	
				Delay (sec)	LOS	Delay (sec)	LOS
1	El Dorado Hills Blvd @ Saratoga Way/Park Dr	Signal	AM	41.9	D	42.8	D
			PM	63.1	E	74.8	E
2	El Dorado Hills Blvd @ US-50 WB Ramps	Signal	AM	31.5	C	31.0	C
			PM	65,3	F	44.2	D
3	Latrobe Rd @ US-50 EB Ramps	Signal	AM	15.7	B	15.8	B
			PM	36.1	D	18.2	B
4	Latrobe Rd @ Town Center Blvd	Signal	AM	21.3	C	20.9	C
			PM	**123.0**	**F**	**100.5**	**F**
5	Latrobe Rd @ White Rock Rd	Signal	AM	45.7	D	44.7	D
			PM	**124.5**	**F**	**98.3**	**F**
6	Latrobe Rd @ Project Driveway	SSSC*	AM	-	-	0.2 (15.1 WB)	C
			PM	-	-	0.9 (24.8 WB)	C
7	Latrobe Rd @ Golden Foothill Pkwy (N)	Signal	AM	22.3	C	20.7	C
			PM	49.1	D	55.3	E
8	Latrobe Rd @ Suncast Ln	Signal	AM	10.1	B	10.3	B
			PM	10.5	B	10.8	B
9	Latrobe Rd @ Golden Foothill Pkwy (S)	Signal	AM	36.4	D	36.6	D
			PM	44.4	D	46.3	D
10	White Rock Rd @ Stonebriar Dr/Four Seasons Dr	Signal	AM	16.5	B	16.2	B
			PM	11.7	B	12.1	B
11	White Rock Rd @ Windfield Way	Signal	AM	72.7	E	72.7	E
			PM	27.9	C	28.1	C
12	White Rock Rd @ Post St	Signal	AM	35.8	D	35.3	D
			PM	70.7	E	60.2	E
13	White Rock Rd @ Valley View Pkwy	Signal	AM	79.6	E	78.6	E
			PM	45.2	D	27.6	C
14	Silva Valley Pkwy @ Tong Rd	SSSC*	AM	0.1 (9.9 WB)	A	0 (10 WB)	A
			PM	0.1 (11.7 WB)	B	0 (11.8 WB)	A
15	Silva Valley Pkwy @ US-50 WB Ramps	Signal	AM	47.3	D	47.4	D
			PM	19.5	B	19.5	B
16	Silva Valley Pkwy @ US-50 EB Ramps	Signal	AM	18.8	B	18.8	B
			PM	20.9	C	21.2	C

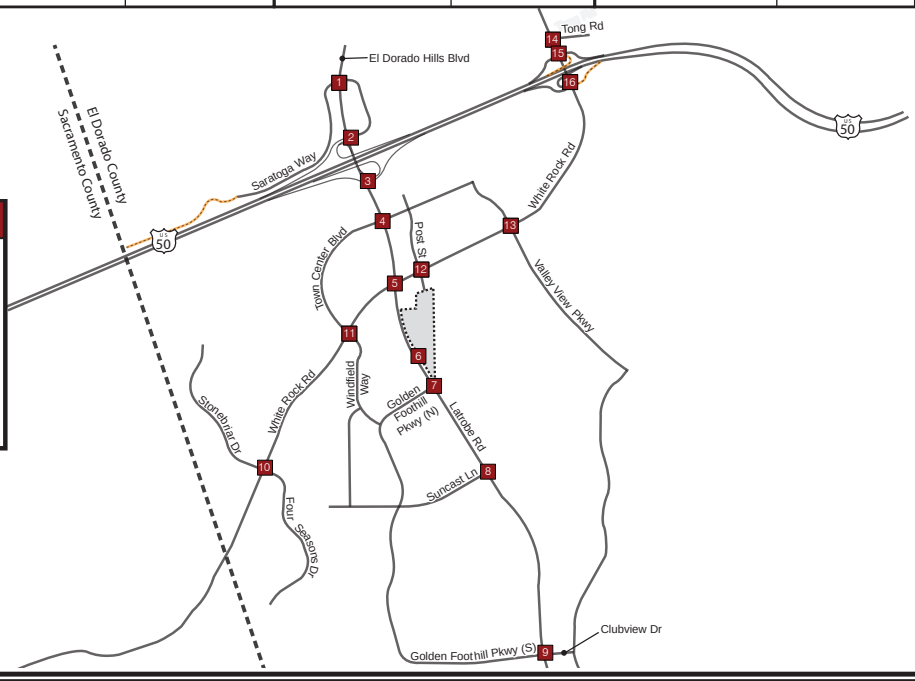
Notes:

Bold represents unacceptable operations. Shaded represents significant impact.

*Side Street Stop Controlled (SSSC) intersections are reported with the intersection delay followed by the worst approach's delay. The reported LOS corresponds to the worst approach.

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Intersection	Leg	Left	Right	Left	Right
1	Saratoga Wy	80 / 40	1524 / 884	170 / 200	El Dorado Hills Blvd
	Park Dr	120 / 300	110 / 60	100 / 170	
	Saratoga Wy	50 / 170	70 / 200	141 / 227	
	Park Dr	128 / 137	776 / 1248	10 / 50	
2	US-50 WB Ramps	510 / 200	1235 / 1060	30 / 20	El Dorado Hills Blvd
	Saratoga Wy	50 / 40	150 / 170	112 / 175	
	US-50 WB Ramps	130 / 100	110 / 100	316 / 88	
	Saratoga Wy	561 / 1141	734 / 1275	151 / 314	
3	US-50 EB Ramps	1413 / 1102	250 / 220		Latrobe Rd
	US-50 EB Ramps	260 / 500			
	US-50 EB Ramps	1189 / 616			
	US-50 EB Ramps	1196 / 2231	326 / 619		
4	Town Center Blvd	360 / 50	1722 / 1069	510 / 610	Latrobe Rd
	Town Center Blvd	340 / 710	30 / 10	100 / 70	
	Town Center Blvd	30 / 360	10 / 40	1 / 63	
	Town Center Blvd	61 / 3	1131 / 1790	90 / 150	
5	White Rock Rd	490 / 230	1228 / 673	115 / 289	Latrobe Rd
	White Rock Rd	149 / 257	410 / 280	617 / 418	
	White Rock Rd	270 / 460	123 / 529	81 / 93	
	White Rock Rd	160 / 110*	872 / 1236	293 / 429	
6	Project Driveway	1906 / 1153	17 / 45		Latrobe Rd
	Project Driveway	20 / 75			
	Project Driveway	1275 / 1696	27 / 47		
7	Golden Foothill Pkwy (N)	342 / 124	1564 / 1018	0 / 20	Latrobe Rd
	Monte Verde Dr	10 / 10	10 / 10	10 / 10	
	Golden Foothill Pkwy (N)	176 / 325	0 / 10	10 / 20	
	Monte Verde Dr	40 / 10	1126 / 1409	10 / 10	
8	Suncast Ln	273 / 148	1321 / 850		Latrobe Rd
	Suncast Ln	85 / 258	83 / 53		
	Suncast Ln	97 / 35	1061 / 1220		
9	Golden Foothill Pkwy (N)	413 / 88	830 / 591	160 / 223	Latrobe Rd
	Clubview Dr	241 / 153	160 / 60	10 / 0	
	Golden Foothill Pkwy (N)	104 / 368	70 / 150	60 / 80	
	Clubview Dr	90 / 60	813 / 734	0 / 10	
10	Stonebriar Dr	70 / 30	91 / 63		Stonebriar Dr
	White Rock Rd	61 / 103	618 / 673	21 / 63	
	Four Seasons Dr	20 / 50	495 / 729	10 / 30	
	White Rock Rd	40 / 20	41 / 43		
11	Windfield Wy	10 / 30	10 / 10		Town Center Blvd
	White Rock Rd	533 / 473	520 / 130		
	Windfield Wy	20 / 20	364 / 742	203 / 113	
	White Rock Rd	127 / 295	10 / 10	100 / 350	
12	Post St	130 / 210	15 / 24	40 / 180	Post St
	White Rock Rd	200 / 170	1005 / 634	51 / 72	
	Driveway	110 / 250	393 / 949	28 / 68	
	Driveway	51 / 131	3 / 25	27 / 65	
13	Valley View Pkwy	40 / 60	10 / 60	40 / 190	Vine St
	White Rock Rd	110 / 120	1014 / 721	130 / 60	
	Valley View Pkwy	60 / 40	348 / 1018	61 / 175	
	Valley View Pkwy	172 / 115	30 / 30	110 / 130	
14	Tong Rd	982 / 549			Silva Valley Pkwy
	Tong Rd	10 / 10			
	Tong Rd	470 / 853	10 / 10		
15	US-50 WB Ramps	590 / 250	392 / 299		Silva Valley Pkwy
	US-50 WB Ramps	130 / 210	10 / 10	583 / 321	
	US-50 WB Ramps	20 / 20	350 / 653		
16	US-50 EB Ramps	100 / 100	874 / 521		Silva Valley Pkwy
	US-50 EB Ramps	130 / 320	20 / 20		
	US-50 EB Ramps	189 / 374	240 / 353		



LEGEND	
#	Study Intersection
XX/YY	AM/PM Volumes
	Project Site
	Future Roadway

*Includes 7 northbound u-turns

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Figure 12
Near Term (2025) plus Proposed Project Peak-Hour Traffic Volumes

Roadway Segments

Table 16 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 16, the study roadway segments operate from LOS A to LOS E.

Table 16 – Near-Term (2025) plus Proposed Project Roadway Segment Levels of Service

Scenario	Location	Peak-Hour	Analysis Direction	LOS	D (pc/mi/ln)	PFFS (%)	v/c
Near-Term (2025) plus Proposed Project	Latrobe Road, White Rock to Golden Foothills (N)	AM	NB	B	13.4		
			SB	C	23.6		
		PM	NB	B	18		
			SB	B	14.4		
	White Rock Road, Latrobe to Post	AM	EB	A	6.8		
			WB	B	15		
		PM	EB	B	16.2		
			WB	B	12.2		
	White Rock Road, Post to Valley View	AM	EB	E		64.2	0.30
			WB	E		60.7	0.80
		PM	EB	E		55.8	0.79
			WB	E		56.5	0.56

Notes:
D = Density, PFFS = Percent Free-Flow Speed, v/c = Volume to Capacity

Freeway Facilities

Table 17 presents the freeway facility operating conditions for this analysis scenario. As indicated in Table 17, the freeway facilities operate from LOS A to LOS E.

CUMULATIVE (2035) CONDITIONS

As described in the Land Use Consistency and Analysis Scenarios section of this report, future traffic estimates were prepared in consideration of both previous project analyses and the provision of a new TDM release. Analyses completed specifically considered the inclusion of the following projects:

- Saratoga Estates
- Bass Lake Hills Specific Plan
- Carson Creek Specific Plan
- Promontory
- Ridgeview
- San Stino Residential
- Serrano
- Valley View Specific Plan
- Central El Dorado Hills Specific Plan
- Village of Marble Valley Specific Plan
- Lime Rock Specific Plan
- Spanos Apartments

In addition, the John Adams Academy is assumed to be developed under Cumulative (2035) conditions. As such, John Adams Academy project trips[14] were added to Cumulative (2035) "no-project" conditions.

Additionally, the following specific capital improvement projects in the immediate vicinity of the project site are anticipated to be completed prior to year 2035 and are included in this scenario:

- Saratoga Way (4-Lane) Extension
- El Dorado Hills Boulevard @ Saratoga Way Intersection Improvements
- US-50/Silva Valley Parkway Interchange (Phase 2)
- US-50/Empire Ranch Road Interchange
- Wilson Extension

The difference between the resulting 2035 traffic estimate and the 2010 baseline model results (the growth) was then added to Existing traffic volumes to establish Cumulative (2035) traffic estimates for this study.

[14] *John Adams Academy Transportation Impact Study,* El Dorado Hills, California, Kimley-Horn and Associates, March 29, 2018.

Table 17 – Near-Term (2025) plus Proposed Project Freeway Facility Levels of Service

US-50				Near-Term (2025)		Near-Term (2025) plus Project	
Direction	Segment	Type	Peak Hour	Density[a]	LOS	Density[a]	LOS
Eastbound	West of Latrobe Rd Southbound Off- Ramp	Basic	AM	14.2	B	14.3	B
			PM	20.7	C	21.0	C
	Latrobe Rd Southbound Off-Ramp	Diverge	AM	21.2	C	21.4	C
			PM	22.9	C	23.3	C
	El Dorado Hills Blvd Northbound Off-Ramp	Diverge	AM	15.2	B	15.2	B
			PM	25.9	C	25.9	C
	El Dorado Hills Blvd Northbound Off-Ramp to Latrobe Rd On-Ramp	Basic	AM	7.4	A	7.4	A
			PM	14.8	B	14.8	B
	Latrobe Rd On-Ramp	Merge	AM	16.7	B	16.7	B
			PM	26.6	C	26.6	C
	East of Latrobe Rd On-Ramp	Weave[c]	AM	10.1	A	10.1	A
			PM	-	B	-	B
	Silva Valley Pkwy Southbound Off-Ramp	Diverge	AM	16.8	B	16.8	B
			PM	27.3	C	27.3	C
	Silva Valley Pkwy Southbound Off-Ramp to Silva Valley Pkwy Northbound On-Ramp	Basic	AM	9.4	A	9.4	A
			PM	17.4	B	17.4	B
	Silva Valley Pkwy Northbound On-Ramp	Merge	AM	14.0	B	14.0	B
			PM	23.6	C	23.7	C
	East of Silva Valley Pkwy Northbound On-Ramp	Basic	AM	10.7	A	10.7	A
			PM	20.1	C	20.2	C
Westbound	East of Silva Valley Pkwy Northbound Off-Ramp	Weave[c]	AM	33.4	D	33.5	D
			PM	21.3	C	21.4	C
	Silva Valley Pkwy Northbound Off-Ramp	Diverge	AM	27.6	C	27.7	C
			PM	21.9	C	22.0	C
	Silva Valley Pkwy Northbound Off-Ramp to Silva Valley Pkwy Southbound On-Ramp	Basic	AM	24.1	C	24.1	C
			PM	16.7	B	16.7	B
	Silva Valley Pkwy Southbound On-Ramp	Merge	AM	31.7	D	31.7	D
			PM	22.1	C	22.1	C
	Silva Valley Pkwy Southbound On-Ramp to El Dorado Hills Blvd Off-Ramp	Weave[c]	AM	-	B	-	B
			PM	12.4	B	12.4	B
	El Dorado Hills Blvd Off-Ramp	Diverge	AM	26.4	C	26.4	C
			PM	19.6	B	19.6	B
	El Dorado Hills Blvd Off-Ramp to El Dorado Hills Blvd On-Ramp	Basic	AM	24.8	C	24.8	C
			PM	16.6	B	16.6	B
	El Dorado Hills Blvd On-Ramp	Merge	AM	37.0	E	37.1	E
			PM	31.5	D	32.0	D
	West of El Dorado Hills Blvd On-Ramp	Basic	AM	44.2	E	44.5	E
			PM	32.3	D	33.1	D

Notes:

a- Density measured in passenger cars/lane/mile (pc/ln/mi)

b- **Bold** represents unacceptable operations. Shaded represents significant impact.

c- Weave segment LOS calculated using Leisch Method

Cumulative (2035) lane geometries and peak-hour turn movement volumes are presented in Figure 13 and Figure 14, respectively. Analysis worksheets for this scenario are provided in Appendix F.

Intersections

Table 18 presents the intersection operating conditions for this analysis scenario. As indicated in Table 18, the study intersections operate from LOS A to LOS F.

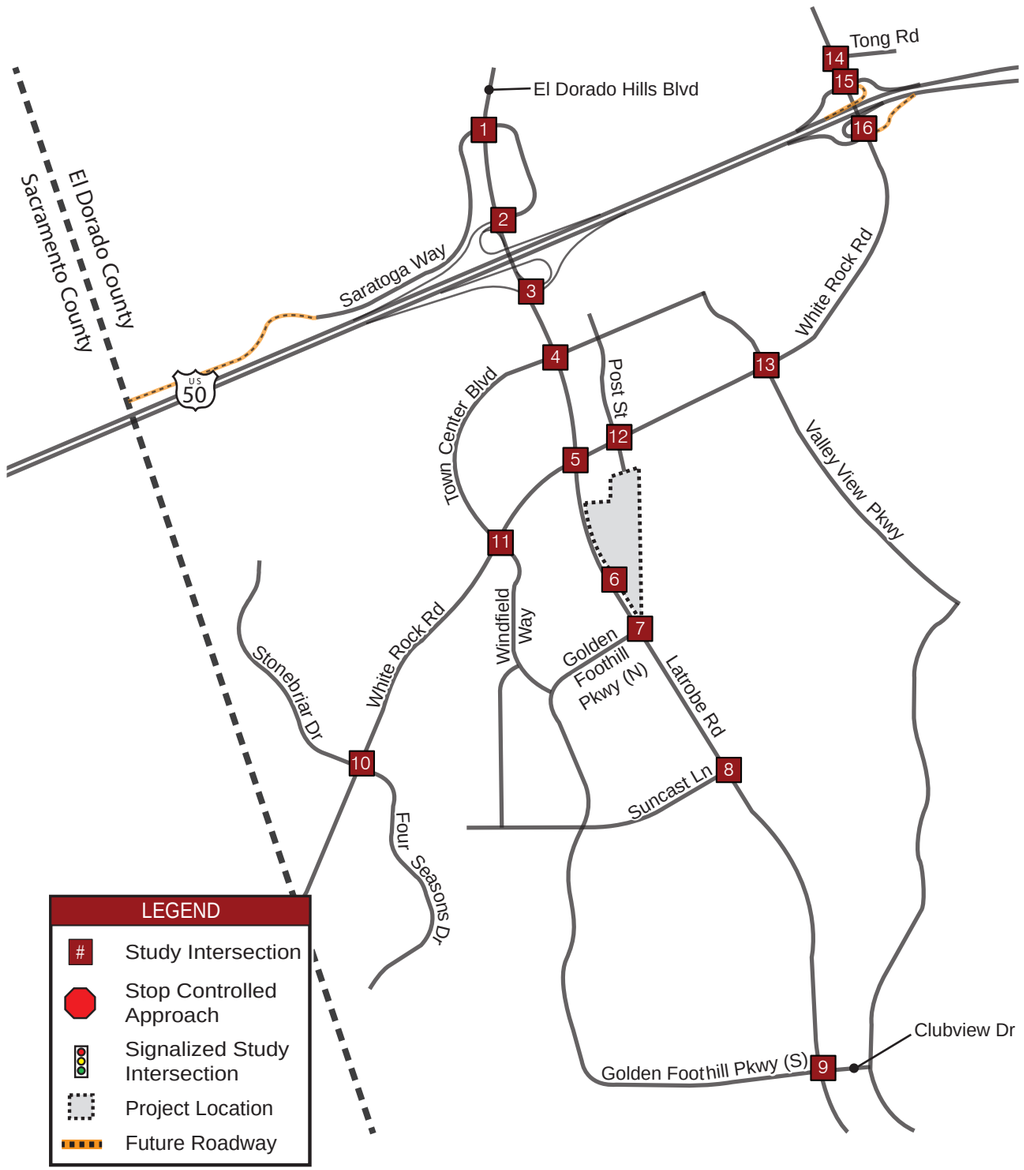
Roadway Segments

Table 19 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 19, the study roadway segments operate at LOS A or LOS B.

Freeway Facilities

Table 20 presents the freeway facility operating conditions for this analysis scenario. As indicated in Table 20, the freeway facilities operate from LOS A to LOS D.

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)



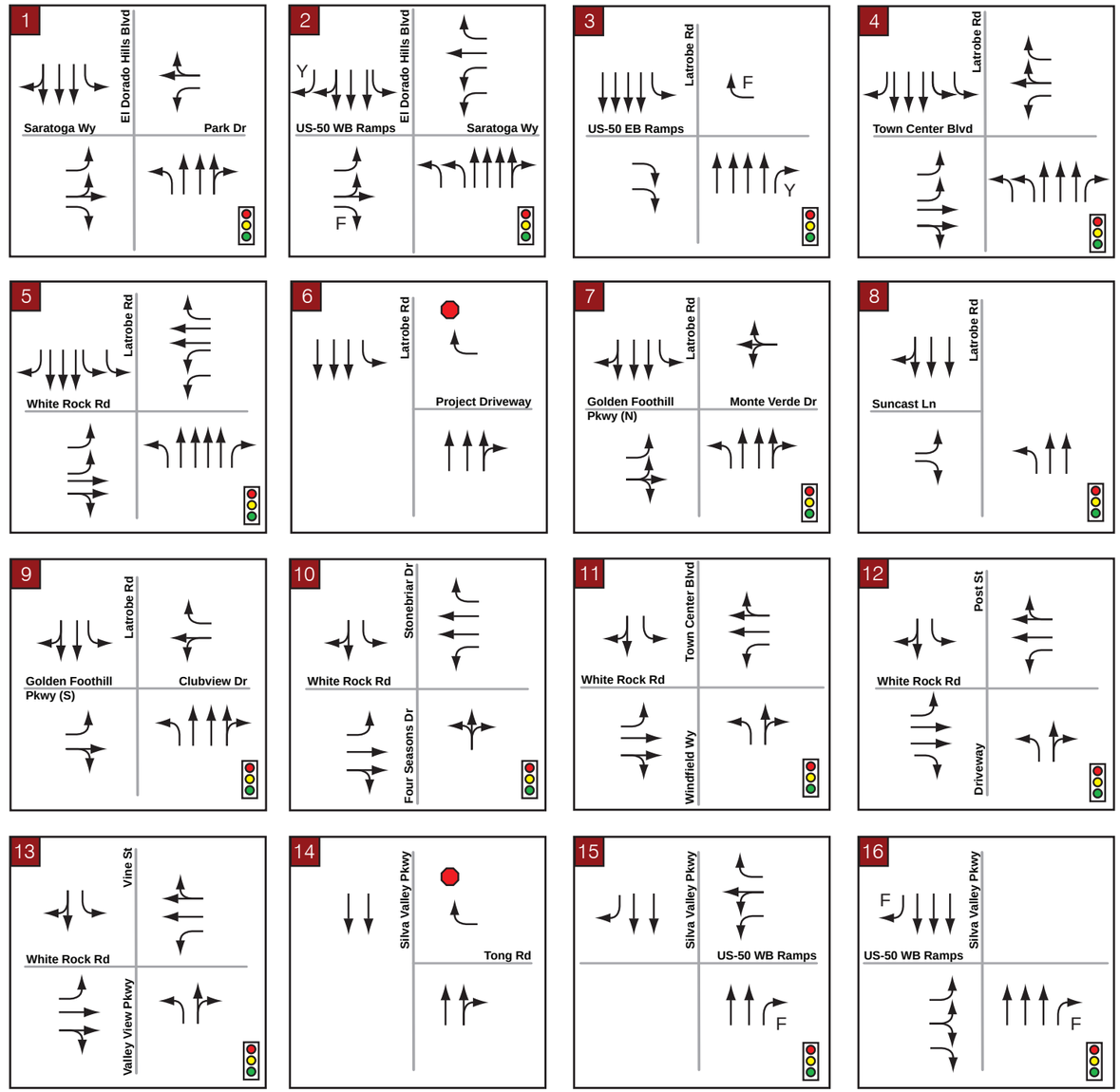


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Figure 13
Cumulative (2035) Conditions Lane Geometries

1	**2**	**3**	**4**
El Dorado Hills Blvd: 130 / 40; 1537 / 943; 190 / 230	El Dorado Hills Blvd: 380 / 110; 1456 / 1405; 10 / 10	Latrobe Rd: 1532 / 1373; 280 / 240	Latrobe Rd: 410 / 80; 1752 / 1011; 570 / 660
Saratoga Wy: 70 / 280; 120 / 340; 159 / 312	US-50 WB Ramps: 100 / 90; 130 / 130; 236 / 38	US-50 EB Ramps: 1200 / 378	Town Center Blvd: 50 / 410; 10 / 40; 10 / 50
Park Dr: 150 / 330; 190 / 90; 160 / 260; 167 / 132; 761 / 1166; 10 / 20	Saratoga Wy: 40 / 20; 200 / 240; 110 / 170; 559 / 1170; 788 / 1218; 160 / 320	US-50 EB Ramps: 220 / 340; 1287 / 2358; 416 / 719	Town Center Blvd: 400 / 790; 40 / 10; 130 / 80; 50 / 10; 1262 / 1877; 90 / 160
5	**6**	**7**	**8**
Latrobe Rd: 630 / 230; 1142 / 651; 110 / 260	PROJECT INTERSECTION	Latrobe Rd: 350 / 140; 1617 / 786; 10 / 20	Latrobe Rd: 310 / 170; 1317 / 686
White Rock Rd: 150 / 210; 560 / 370; 695 / 534; 200 / 100; 952 / 1267; 293 / 469		Golden Foothill Pkwy (N): 190 / 370; 10 / 10; 20 / 40	Suncast Ln: 110 / 350; 93 / 63
300 / 550; 150 / 670; 100 / 100		Monte Verde Dr: 10 / 10; 10 / 10; 10 / 10; 40 / 20; 995 / 1246; 10 / 20	117 / 45; 915 / 946
9	**10**	**11**	**12**
Latrobe Rd: 400 / 120; 779 / 298; 250 / 330	Stonebriar Dr: 90 / 40; 110 / 70	Town Center Blvd: 30 / 50; 20 / 30	Post St: 150 / 240; 10 / 10; 40 / 170
Golden Foothill Pkwy (N)	White Rock Rd: 70 / 120; 777 / 725; 20 / 70; 60 / 30; 60 / 50	White Rock Rd: 690 / 540; 700 / 160	White Rock Rd: 190 / 170; 1225 / 804; 40 / 40
Clubview Dr: 380 / 160; 250 / 110; 10 / 10; 180 / 110; 582 / 471; 10 / 20	Four Seasons Dr: 30 / 70; 513 / 943; 20 / 50	Windfield Wy: 40 / 30; 420 / 890; 223 / 143; 147 / 325; 20 / 20; 120 / 440	Driveway: 140 / 290; 403 / 1089; 20 / 30; 40 / 60; 10 / 10; 20 / 30
13	**14**	**15**	**16**
Vine St: 40 / 60; 20 / 70; 70 / 210	Silva Valley Pkwy: 1845/ 1037	Silva Valley Pkwy: 117(/ 490; 678 / 547	Silva Valley Pkwy: 200 / 200; 1525/ 944
White Rock Rd: 160 / 180; 1244 / 846; 200 / 90	Tong Rd: 10 / 10; 867 / 1660; 10 / 10	US-50 WB Ramps: 260 / 420; 10 / 10; 1048 / 597; 617 / 1250; 30 / 40	US-50 EB Ramps: 250 / 630; 40 / 40
Valley View Pkwy: 60 / 40; 338 / 1074; 60 / 170; 170 / 110; 40 / 40; 140 / 210			76 / 19; 397 / 660; 210 / 670

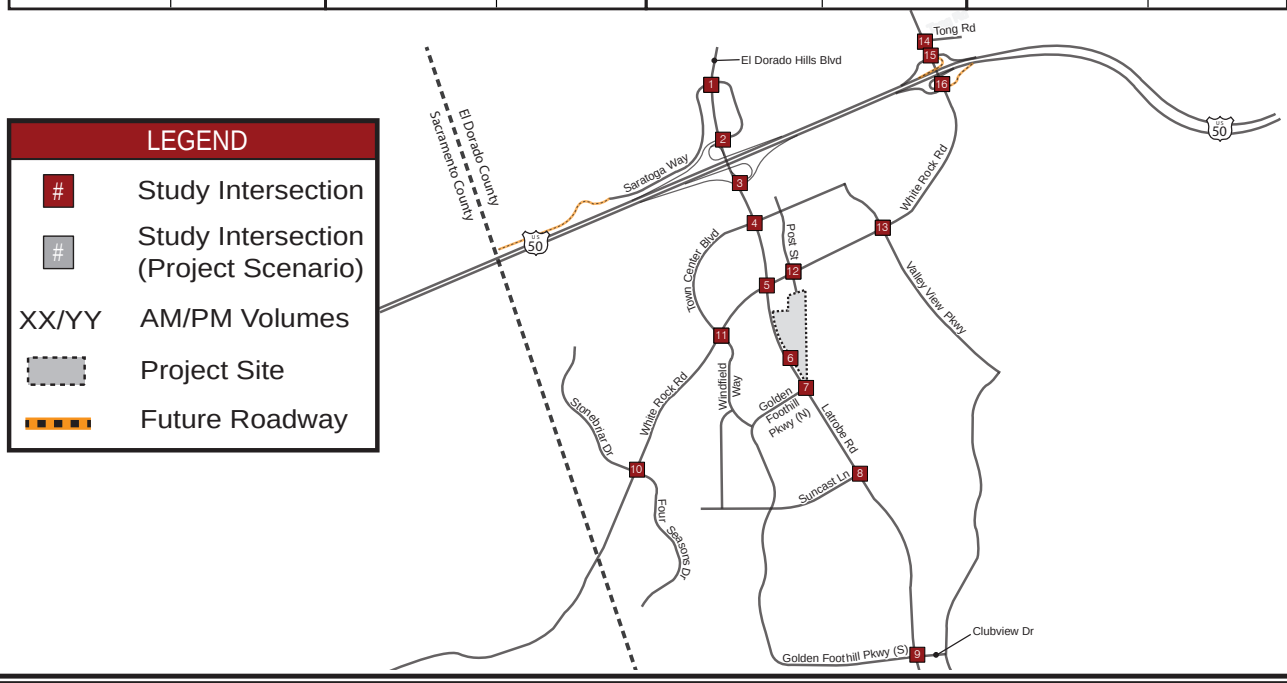

Figure 14
Cumulative (2035) Peak-Hour Traffic Volumes

Table 18 – Cumulative (2035) Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Cumulative (2035)	
				Delay (sec)	LOS
1	El Dorado Hills Blvd @ Saratoga Way/Park Dr	Signal	AM	28.5	C
			PM	49.4	D
2	El Dorado Hills Blvd @ US-50 WB Ramps	Signal	AM	32.8	C
			PM	69.6	E
3	Latrobe Rd @ US-50 EB Ramps	Signal	AM	27.1	C
			PM	21.8	C
4	Latrobe Rd @ Town Center Blvd	Signal	AM	58.2	E
			PM	**124.6**	**F**
5	Latrobe Rd @ White Rock Rd	Signal	AM	**84.6**	**F**
			PM	**98.4**	**F**
6	Latrobe Rd @ Project Driveway	SSSC*	AM	-	-
			PM	-	-
7	Latrobe Rd @ Golden Foothill Pkwy (N)	Signal	AM	12.4	B
			PM	19.0	B
8	Latrobe Rd @ Suncast Ln	Signal	AM	10.0	A
			PM	10.3	B
9	Latrobe Rd @ Golden Foothill Pkwy (S)	Signal	AM	74.1	E
			PM	52.1	D
10	White Rock Rd @ Stonebriar Dr/Four Seasons Dr	Signal	AM	12.9	B
			PM	12.1	B
11	White Rock Rd @ Windfield Way	Signal	AM	49.3	D
			PM	40.9	D
12	White Rock Rd @ Post St	Signal	AM	44.4	D
			PM	47.9	D
13	White Rock Rd @ Valley View Pkwy	Signal	AM	66.2	E
			PM	30.3	C
14	Silva Valley Pkwy @ Tong Rd	SSSC*	AM	0.0 (11.9 WB)	B
			PM	0.1 (18.5 WB)	C
15	Silva Valley Pkwy @ US-50 WB Ramps	Signal	AM	79.3	E
			PM	12.7	B
16	Silva Valley Pkwy @ US-50 EB Ramps	Signal	AM	8.0	A
			PM	10.7	B

Notes:
Bold represents unacceptable operations.
*Side Street Stop Controlled (SSSC) intersections are reported with the intersection delay followed by the worst approach's delay. The reported LOS corresponds to the worst approach.

Table 19 – Cumulative (2035) Roadway Segment Levels of Service

Scenario	Location	Peak-Hour	Analysis Direction	LOS	D (pc/mi/ln)
Cumulative (2035)	Latrobe Road, White Rock to Golden Foothills (N)	AM	NB	A	9.7
			SB	B	16.3
		PM	NB	B	12.4
			SB	A	7.8
	White Rock Road, Latrobe to Post	AM	EB	A	4.8
			WB	B	12.0
		PM	EB	B	12.1
			WB	A	9.5
	White Rock Road, Post to Valley View	AM	EB	A	3.9
			WB	B	12.4
		PM	EB	A	11.0
			WB	A	8.6

Notes:
D = Density

Table 20 – Cumulative (2035) Freeway Facility Levels of Service

US-50				Cumulative (2035)	
Direction	Segment	Type	Peak Hour	Density[a]	LOS
Eastbound	West of Latrobe Rd Southbound Off- Ramp	Basic	AM	15.1	B
			PM	18.9	C
	Latrobe Rd Southbound Off-Ramp	Diverge	AM	22.1	C
			PM	20.6	C
	El Dorado Hills Blvd Northbound Off-Ramp	Diverge	AM	16.1	B
			PM	25.0	C
	El Dorado Hills Blvd Northbound Off-Ramp to Latrobe Rd On-Ramp	Basic	AM	8.3	A
			PM	15.0	B
	Latrobe Rd On-Ramp	Merge	AM	18.7	B
			PM	27.8	C
	East of Latrobe Rd On-Ramp	Weave[c]	AM	-	A
			PM	-	C
	Silva Valley Pkwy Southbound Off-Ramp	Diverge	AM	19.0	B
			PM	28.8	D
	Silva Valley Pkwy Southbound Off-Ramp to Silva Valley Pkwy Northbound On-Ramp	Basic	AM	10.2	A
			PM	16.5	B
	Silva Valley Pkwy Southbound On-Ramp	Merge	AM	16.7	B
			PM	23.1	C
	Silva Valley Pkwy Northbound On-Ramp	Merge	AM	15.3	B
			PM	25.5	C
	East of Silva Valley Pkwy Northbound On-Ramp	Basic	AM	12.1	B
			PM	21.6	C
Westbound	East of Silva Valley Pkwy Northbound Off-Ramp	Weave[c]	AM	-	D
			PM	30.6	D
	Silva Valley Pkwy Northbound Off-Ramp	Diverge	AM	31.5	D
			PM	27.4	C
	Silva Valley Pkwy Northbound Off-Ramp to Silva Valley Pkwy Southbound On-Ramp	Basic	AM	14.5	B
			PM	12.6	B
	Silva Valley Pkwy Northbound On-Ramp	Merge	AM	19.8	B
			PM	17.9	B
	Silva Valley Pkwy Southbound On-Ramp	Merge	AM	25.4	C
			PM	17.9	B
	Silva Valley Pkwy Southbound On-Ramp to El Dorado Hills Blvd Off-Ramp	Weave[c]	AM	-	C
			PM	15.2	B
	El Dorado Hills Blvd Off-Ramp	Diverge	AM	28.8	D
			PM	22.8	C
	El Dorado Hills Blvd Off-Ramp to El Dorado Hills Blvd On-Ramp	Basic	AM	18.5	C
			PM	13.9	B
	El Dorado Hills Blvd On-Ramp	Merge	AM	28.8	D
			PM	27.4	C
	West of El Dorado Hills Blvd On-Ramp	Weave[c]	AM	-	D
			PM	-	C

Notes:

a- Density measured in passenger cars/lane/mile (pc/ln/mi)

b- **Bold** represents unacceptable operations

c- Weave segment LOS calculated using Leisch Method

CUMULATIVE (2035) PLUS PROPOSED PROJECT CONDITIONS

The number of trips estimated to be generated by the proposed project were determined using the ITE *Trip Generation Manual* and were then assigned to the surrounding transportation network based on the results of a select link analysis completed using a version of the El Dorado County TDM prepared specifically for this scenario (based on the method outlined in the prior section). Likewise, background traffic estimates were developed based on the results of analysis completed using a version of the County's TDM prepared specifically for this scenario (refer to prior section for a discussion on the method).

Consistent with other project analysis completed within the County, for the Near-Term (2025) and 2035 scenarios which include project conditions, analyses were prepared to include the difference between growth previously forecast for the project area and the planned project (to avoid double counting planned growth).

Cumulative (2035) plus Proposed Project peak-hour turn movement volumes are presented in Figure 15. Analysis worksheets for this scenario are provided in Appendix G.

Intersections
Table 21 presents the intersection operating conditions for this analysis scenario. As indicated in Table 21, the study intersections operate from LOS A to LOS F.

Roadway Segments
Table 22 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 22, the study roadway segments operate at LOS A or LOS B.

Freeway Facilities
Table 23 presents the freeway facility operating conditions for this analysis scenario. As indicated in Table 23, the freeway facilities operate from LOS A to LOS D.

1

Saratoga Wy		El Dorado Hills Blvd
70 / 280	130 / 40	
120 / 340	1545 / 963	
162 / 323	190 / 230	

Park Dr	
150 / 330	
190 / 90	
160 / 260	
169 / 143	
766 / 1188	
10 / 20	

2

US-50 WB Ramps		El Dorado Hills Blvd
100 / 90	380 / 110	
130 / 130	1467 / 1436	
236 / 38	10 / 10	

Saratoga Wy	
40 / 20	
200 / 240	
112 / 175	
570 / 1215	
795 / 1251	
161 / 325	

3

		Latrobe Rd
	1545 / 1409	
1217 / 420	280 / 240	

US-50 EB Ramps	
220 / 340	
1306 / 2441	
416 / 719	

4

		Latrobe Rd
50 / 410	410 / 80	
10 / 40	1782 / 1089	
11 / 53	570 / 660	

Town Center Blvd	
400 / 790	
40 / 10	
130 / 80	
51 / 13	
1281 / 1960	
90 / 160	

5

		Latrobe Rd
300 / 550	630 / 230	
153 / 679	1158 / 693	
101 / 103	125 / 299	

White Rock Rd	
159 / 257	
560 / 370	
707 / 558	
* 210 / 120	
962 / 1306	
293 / 469	

6

		Latrobe Rd
	1950 / 1333	
	17 / 45	

Project Driveway	
20 / 75	
1447 / 1838	
27 / 47	

7

Golden Foothill Pkwy (N)		Latrobe Rd
206 / 395	362 / 164	
10 / 10	1624 / 809	
20 / 40	10 / 20	

Monte Verde Dr	
10 / 10	
10 / 10	
10 / 10	
40 / 20	
1006 / 1267	
10 / 20	

8

		Latrobe Rd
115 / 358	313 / 178	
93 / 63	1321 / 701	

117 / 45	
921 / 960	

9

Golden Foothill Pkwy (N)		Latrobe Rd
84 / 358	403 / 128	
100 / 240	779 / 302	
110 / 150	251 / 333	

Clubview Dr	
381 / 163	
250 / 110	
10 / 10	
180 / 110	
583 / 474	
10 / 20	

10

		Stonebriar Dr
30 / 70	90 / 40	
515 / 949	111 / 73	
20 / 50		

White Rock Rd	
71 / 123	
778 / 732	
21 / 73	
60 / 30	
61 / 53	

11

		Town Center Blvd
40 / 30	30 / 50	
424 / 902	20 / 30	
223 / 143		

White Rock Rd	
693 / 553	
700 / 160	
147 / 325	
20 / 20	
120 / 440	

12

		Post St
140 / 290	150 / 240	
403 / 1089	15 / 24	
38 / 78	40 / 170	

White Rock Rd	
190 / 170	
1225 / 804	
51 / 73	
61 / 131	
13 / 25	
28 / 65	

13

Valley View Pkwy		Vine St
60 / 40	40 / 60	
345 / 1104	20 / 70	
61 / 175	70 / 210	

White Rock Rd	
160 / 180	
1253 / 874	
200 / 90	
172 / 115	
40 / 40	
140 / 210	

14

		Silva Valley Pkwy
	185 / 1050	

Tong Rd	
10 / 10	
870 / 1673	
10 / 10	

15

		Silva Valley Pkwy
	117 / 490	
	682 / 560	

US-50 WB Ramps	
260 / 420	
10 / 10	
1053 / 612	
620 / 1263	
30 / 40	

16

		Silva Valley Pkwy
	200 / 200	
	153 / 972	

US-50 EB Ramps	
250 / 630	
40 / 40	
76 / 19	
400 / 673	
213 / 685	

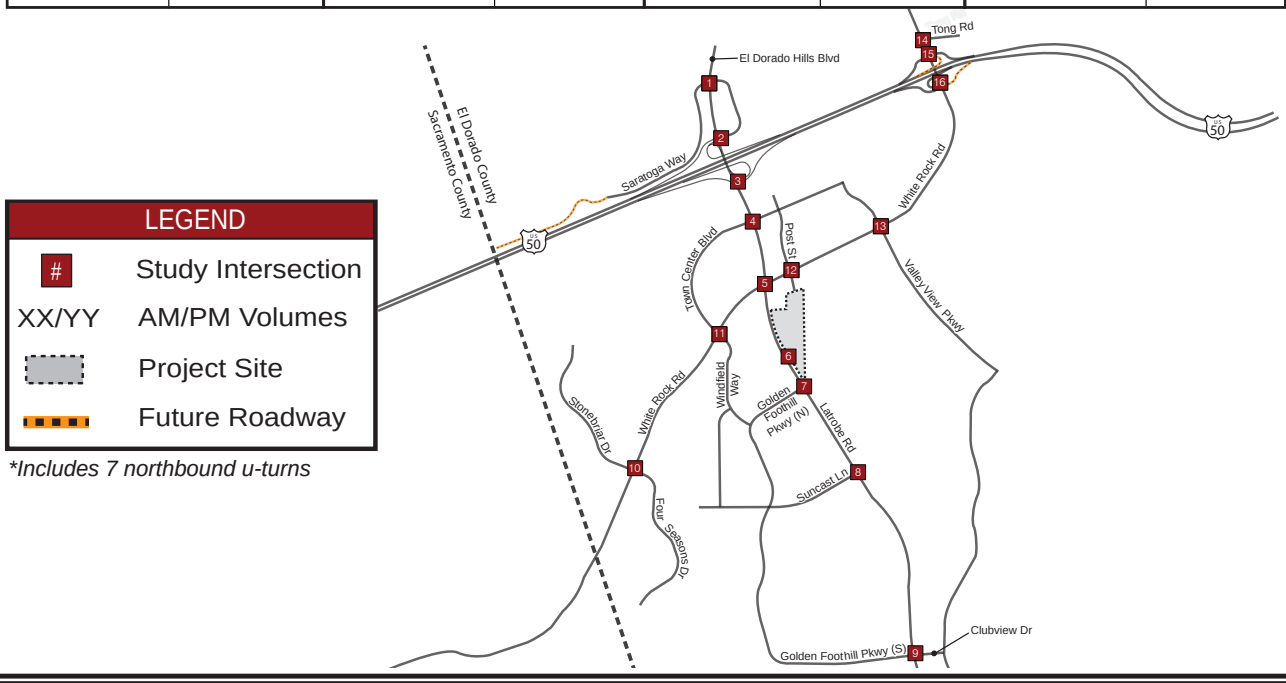

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Figure 15
Cumulative (2035) plus Proposed Project Peak-Hour Traffic Volumes

Table 21 – Cumulative (2035) plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Cumulative (2035)		Cumulative (2035) Plus Proposed Project*	
				Delay (sec)	LOS	Delay (sec)	LOS
1	El Dorado Hills Blvd @ Saratoga Way/Park Dr	Signal	AM	28.5	C	31.5	C
			PM	63.1	E	58.7	E
2	El Dorado Hills Blvd @ US-50 WB Ramps	Signal	AM	32.8	C	34.2	C
			PM	65.3	E	73.5	E
3	Latrobe Rd @ US-50 EB Ramps	Signal	AM	27.1	C	31.9	C
			PM	36.1	D	28.8	C
4	Latrobe Rd @ Town Center Blvd	Signal	AM	58.2	E	69.4	E
			PM	**123.0**	**F**	**140.8**	**F**
5	Latrobe Rd @ White Rock Rd	Signal	AM	**84.6**	**F**	**93.8**	**F**
			PM	**124.5**	**F**	**121.6**	**F**
6	Latrobe Rd @ Project Driveway	SSSC*	AM	-	-	0.2 (18.9 WB)	C
			PM	-	-	1.5 (34.9 WB)	D
7	Latrobe Rd @ Golden Foothill Pkwy (N)	Signal	AM	12.4	B	17.8	B
			PM	49.1	D	20.4	C
8	Latrobe Rd @ Suncast Ln	Signal	AM	10.0	A	10.1	B
			PM	10.3	B	10.6	B
9	Latrobe Rd @ Golden Foothill Pkwy (S)	Signal	AM	74.1	E	74.3	E
			PM	52.1	D	53.4	D
10	White Rock Rd @ Stonebriar Dr/Four Seasons Dr	Signal	AM	12.9	B	12.9	B
			PM	12.1	B	12.4	B
11	White Rock Rd @ Windfield Way	Signal	AM	49.3	D	49.4	D
			PM	40.9	D	70.7	E
12	White Rock Rd @ Post St	Signal	AM	44.4	D	52.6	D
			PM	70.1	E	78.5	E
13	White Rock Rd @ Valley View Pkwy	Signal	AM	66.2	E	67.9	E
			PM	45.2	D	30.2	C
14	Silva Valley Pkwy @ Tong Rd	SSSC*	AM	0.0 (11.9 WB)	B	0.0 (11.9 WB)	B
			PM	0.1 (18.5 WB)	C	0.0 (18.6 WB)	C
15	Silva Valley Pkwy @ US-50 WB Ramps	Signal	AM	79.3	E	79.6	E
			PM	12.7	B	12.8	B
16	Silva Valley Pkwy @ US-50 EB Ramps	Signal	AM	8.0	A	8.0	A
			PM	10.7	B	10.6	B

Notes:

Bold represents unacceptable operations. Shaded represents significant impact.

*Side Street Stop Controlled (SSSC) intersections are reported with the intersection delay followed by the worst approach's delay. The reported LOS corresponds to the worst approach.

Table 22 – Cumulative (2035) plus Proposed Project Roadway Segment Levels of Service

Scenario	Location	Peak-Hour	Analysis Direction	LOS	D (pc/mi/ln)
Cumulative (2035) plus Proposed Project	Latrobe Road, White Rock to Golden Foothills (N)	AM	NB	A	9.9
			SB	B	16.5
		PM	NB	B	12.8
			SB	A	7.7
	White Rock Road, Latrobe to Post	AM	EB	A	5
			WB	B	12.1
		PM	EB	B	12.5
			WB	A	10.1
	White Rock Road, Post to Valley View	AM	EB	A	4
			WB	B	12.5
		PM	EB	B	11.3
			WB	A	8.9

Notes:

D = Density

Table 23 – Cumulative (2035) plus Proposed Project Freeway Facility Levels of Service

US-50				Cumulative (2035)		Cumulative (2035) plus Project	
Direction	Segment	Type	Peak Hour	Density[a]	LOS	Density[a]	LOS
Eastbound	West of Latrobe Rd Southbound Off- Ramp	Basic	AM	15.1	B	15.2	B
			PM	18.9	C	19.2	C
	Latrobe Rd Southbound Off-Ramp	Diverge	AM	22.1	C	22.3	C
			PM	20.6	C	21.0	C
	El Dorado Hills Blvd Northbound Off-Ramp	Diverge	AM	16.1	B	16.1	B
			PM	25.0	C	25.0	C
	El Dorado Hills Blvd Northbound Off-Ramp to Latrobe Rd On-Ramp	Basic	AM	8.3	A	8.3	A
			PM	15.0	B	15.0	B
	Latrobe Rd On-Ramp	Merge	AM	18.7	B	18.7	B
			PM	27.8	C	27.8	C
	East of Latrobe Rd On-Ramp	Weave[c]	AM	-	A	-	A
			PM	-	C	-	C
	Silva Valley Pkwy Southbound Off-Ramp	Diverge	AM	19.0	B	19.0	B
			PM	28.8	D	28.8	D
	Silva Valley Pkwy Southbound Off-Ramp to Silva Valley Pkwy Northbound On-Ramp	Basic	AM	10.2	A	10.2	A
			PM	16.5	B	16.5	B
	Silva Valley Pkwy Northbound On-Ramp	Merge	AM	16.7	B	16.7	B
			PM	23.1	C	23.1	C
	Silva Valley Pkwy Southbound On-Ramp	Merge	AM	15.3	B	15.3	B
			PM	25.5	C	25.6	C
	East of Silva Valley Pkwy Northbound On-Ramp	Basic	AM	12.1	B	12.2	B
			PM	21.6	C	21.7	C
Westbound	East of Silva Valley Pkwy Northbound Off-Ramp	Weave[c]	AM	-	D	-	D
			PM	30.6	D	30.8	D
	Silva Valley Pkwy Northbound Off-Ramp	Diverge	AM	31.5	D	31.6	D
			PM	27.4	C	27.5	C
	Silva Valley Pkwy Northbound Off-Ramp to Silva Valley Pkwy Southbound On-Ramp	Basic	AM	14.5	B	14.5	B
			PM	12.6	B	12.6	B
	Silva Valley Pkwy Northbound On-Ramp	Merge	AM	19.8	B	19.8	B
			PM	17.9	B	17.9	B
	Silva Valley Pkwy Southbound On-Ramp	Merge	AM	25.4	C	25.4	C
			PM	17.9	B	17.9	B
	Silva Valley Pkwy Southbound On-Ramp to El Dorado Hills Blvd Off-Ramp	Weave[c]	AM	-	C	-	C
			PM	15.2	B	15.2	B
	El Dorado Hills Blvd Off-Ramp	Diverge	AM	28.8	D	28.8	D
			PM	22.8	C	22.8	C
	El Dorado Hills Blvd Off-Ramp to El Dorado Hills Blvd On-Ramp	Basic	AM	18.5	C	18.5	C
			PM	13.9	B	13.9	B
	El Dorado Hills Blvd On-Ramp	Merge	AM	28.8	D	28.9	D
			PM	27.4	C	27.8	C
	West of El Dorado Hills Blvd On-Ramp	Weave[c]	AM	-	D	-	D
			PM	-	C	-	C

Notes:

a- Density measured in passenger cars/lane/mile (pc/ln/mi)

b- **Bold** represents unacceptable operations. Shaded represents significant impact.

c- Weave segment LOS calculated using Leisch Method

IMPACTS AND MITIGATION

Standards of Significance

Project impacts were determined by comparing conditions with the proposed project to those without the project. Impacts for intersections are created when traffic from the proposed project forces the LOS to fall below a specific threshold. The County's standards[15] specify the following:

> "*Level of Service (LOS) for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions…"* (El Dorado County General Plan Policy TC-Xd[16]) The study facilities are located within the El Dorado Hills Community Region.
>
> If a project causes the peak hour LOS or volume/capacity ratio on a county road or state highway that would otherwise meet the County standards (without the project) to exceed the values listed in the above text (El Dorado County General Plan Policy TC-Xd[16]), then the impact shall be considered significant.
>
> If any county road or state highway fails to meet the above listed county standards (El Dorado County General Plan Policy TC-Xd[16]) for peak hour LOS or volume/capacity ratios without the proposed project, and the project will worsen conditions on the road or highway, then the impact shall be considered significant. The term, worsen is defined for the purpose of this paragraph according to General Plan Policy TC-Xe[16] as follows:
>
> > "*A. A 2 percent increase in traffic during the a.m. peak hour, p.m. peak hour, or daily, or*
> > *B. The addition of 100 or more daily trips, or*
> > *C. The addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour*"

The Caltrans District 3 standard of significance was applied to intersections at the US-50 interchange with El Dorado Hills Boulevard/Latrobe Road. Caltrans has established a LOS E threshold for the peak 15 minutes for signalized intersections outside "high speed areas." The US-50 interchange ramp intersections with El Dorado Hills Boulevard/Latrobe Road are not considered to be located in high speed areas, therefore, the LOS E threshold for the peak 15 minutes applies to these facilities.

[15] *Transportation Impact Study Guidelines,* El Dorado County Community Development Agency, November 2014.
[16] *El Dorado County General Plan, Transportation and Circulation Element*, July 2004.

Impacts and Mitigation

Existing plus Proposed Project Conditions

As reflected in Table 9, Table 10, and Table 11, the addition of the proposed project results in one (1) significant impact. The following is a discussion of the impacts and their associated mitigations. Analysis worksheets for this scenario are provided in Appendix H.

Impacts:

Intersections

I1. Intersection #9, Latrobe Road @ Golden Foothill Parkway (S)

As shown in Table 9, this intersection operates at LOS F during the PM peak-hour without the project, and the project contributes more than 10 peak-hour trips to the intersection during the PM peak-hour. ***This is a significant impact.***

Mitigations:

Intersections

M1. Intersection #9, Latrobe Road @ Golden Foothill Parkway (S)

The significant impact at this intersection during the PM peak-hour can be mitigated changing the lane configuration of the eastbound and westbound intersection approaches. The revised lane configuration consists of the following: Eastbound (Left, Shared Left/Through/Right), and Westbound (Right, Shared Left/Through/Right). This mitigation involves minor striping changes and the addition of signal mast arm lane designation signs. The John Adams Academy project is responsible for, among other things, the lane designation mitigation described above. If constructed by others or added to the 20-year CIP prior to development levels in the project site that would require this mitigation, payment of traffic impact mitigation fees would satisfy the project's fair share obligation towards this improvement. If not constructed by others, the applicant would be responsible for implementing this improvement consistent with General Plan Goal TC-X and supporting Policy TC-Xf to ensure that transportation improvements are implemented concurrent with approved development. If constructed by the applicant, the applicant may be eligible for reimbursement through the County's traffic impact mitigation fee program. The implementation of this mitigation results in acceptable LOS C in the AM and LOS D in the PM peak-hour (Table 24). With this improvement, this impact would be ***less than significant.***

Table 24 – Intersection Levels of Service – Existing plus Proposed Project Mitigated Conditions

ID	Intersection	Control	Peak Hour	Existing plus Proposed Project		Existing plus Proposed Project (Mitigated)	
				Delay (sec)	LOS	Delay (sec)	LOS
9	Latrobe Rd @ Golden Foothill Pkwy (S)	Signal	AM	24.2	C	31.2	C
			PM	108.2	F	42.7	D

Notes:
Bold represents unacceptable operations. Shaded represents significant impact.

Near-Term (2025) plus Proposed Project Conditions

As reflected in Table 15, Table 16, and Table 17, the addition of the proposed project results in two (2) significant impacts. The following is a discussion of the impact and its associated mitigation. Analysis worksheets for this scenario are provided in Appendix H.

Impacts:

Intersections

I2. Intersection #4, Latrobe Road @ Town Center Boulevard

As shown in Table 15, this intersection operates at LOS F during the PM peak-hour without the project, and the project contributes more than 10 peak-hour trips to the intersection during the PM peak-hour. ***This is a significant impact.***

I3. Intersection #5, Latrobe Road @ White Rock Road

As shown in Table 15, this intersection operates at LOS F during the PM peak-hour without the project, and the project contributes more than 10 peak-hour trips to the intersection during the PM peak-hour. ***This is a significant impact.***

Mitigation:

Intersections

M2. Intersection #4, Latrobe Road @ Town Center Boulevard

The significant impact at this intersection can be mitigated by optimization of the Latrobe Road coordinated signal system, along with the following improvements: the restriping of the westbound Town Center Boulevard approach to include one left-through lane, and two right-turn lanes, with a permitted-overlap phase for the westbound right-turns. The El Dorado Hills Town Center Apartments project is responsible for, among other things, the lane designation and signal phasing mitigations described above. If constructed by others or added to the 20-year CIP prior to development levels in the project site that would require this mitigation, payment of traffic impact mitigation fees would satisfy the project's fair share obligation towards this improvement. If not constructed by others, the applicant would be responsible for implementing this improvement consistent with General Plan Goal TC-X and supporting Policy TC-Xf to ensure that transportation improvements are implemented concurrent with approved development. If constructed by the applicant, the applicant may be eligible for reimbursement through the County's traffic impact mitigation fee program.

As shown in Table 25, this mitigation measure results in the intersection operating at LOS C during the AM and LOS E during the PM peak-hour. Therefore, ***this impact is less than significant.*** In addition, the project may contribute its proportionate share to the County Department of Transportation's Intelligent Transportation System (ITS) program for the El Dorado Hills area, which is currently under development. If a signal at the project driveway were to be approved, fiber optic signal interconnect and conduit installation are required to provide coordinated signal operations. (Note: The Latrobe Road and Town Center Boulevard intersection mitigation is on a privately-owned roadway and should be coordinated with the property owner.)

M3. Intersection #5, Latrobe Road @ White Rock Road

This intersection operates at LOS F during the PM peak-hour without the project, and the project contributes more than 10 peak-hour trips to the intersection during the PM peak-hour. Since the impact is identified under the Cumulative (2035) scenario, the timing of the improvement is a function of the rate of population and employment growth. The County's Traffic Impact Mitigation (TIM) fee program provides a mechanism for collecting fair share contributions for improvements in the 2018 CIP. Accordingly, prior to Building Permit Issuance, the project shall

provide to the County its proportionate share toward the costs of the identified improvements at this intersection.

The significant impact at this intersection can be mitigated by the addition of overlap right-turn signal phases at the northbound, westbound, and southbound approaches, as well as the optimization of the Latrobe Road coordinated signal system. In addition, the mitigation of this impact requires the signalization and coordination of the proposed project driveway (Intersection #6) with the existing Latrobe Road signal corridor. The addition of this new signal, by providing left-turn egress ability for the project, is effective in removing vehicles from the congested White Rock Road segment between Latrobe Road and Post Street, particularly for westbound left turns at Intersection #5 (Latrobe Road @ White Rock Road). This new signal's integration into, and expansion of the Latrobe Road signal corridor south of White Rock Road is anticipated to improve traffic progression by allowing for more structured vehicle platooning along this high speed, high volume corridor.

If constructed by others or added to the 20-year CIP prior to development levels in the project site that would require this mitigation, payment of traffic impact mitigation fees would satisfy the project's fair share obligation towards this improvement. If not constructed by others, the applicant would be responsible for implementing this improvement consistent with General Plan Goal TC-X and supporting Policy TC-Xf to ensure that transportation improvements are implemented concurrent with approved development. If constructed by the applicant, the applicant may be eligible for reimbursement through the County's traffic impact mitigation fee program.

In addition, the project may contribute its proportionate share to the County Department of Transportation's Intelligent Transportation System (ITS) program for the El Dorado Hills area, which is currently under development. If a signal at the project driveway were to be approved, fiber optic signal interconnect and conduit installation are required to provide coordinated signal operations. As shown in Table 25, this mitigation measure results in the intersection operating at LOS D in the AM and PM peak-hours. Therefore, this impact is **less than significant.**

Table 25 – Intersection Levels of Service –
Near-Term (2025) plus Proposed Project Mitigated Conditions

ID	Intersection	Control	Peak Hour	Near Term (2025) plus Proposed Project		Near Term (2025) plus Proposed Project (Mitigated)	
				Delay (sec)	LOS	Delay (sec)	LOS
4	Latrobe Rd @ Town Center Blvd	Signal	AM	20.9	C	21.1	C
			PM	**100.5**	**F**	63.2	E
5	Latrobe Rd @ White Rock Rd	Signal	AM	44.7	D	46.0	D
			PM	**98.3**	**F**	45.6	D

Notes:
Bold represents unacceptable operations. Shaded represents significant impact.

Cumulative (2035) plus Proposed Project Conditions

As reflected in Table 21, Table 22, and Table 23, the addition of the proposed project results in two (2) significant impacts. The following is a discussion of each of the impacts and its associated mitigation. Analysis worksheets for this scenario are provided in Appendix H.

Impacts:

Intersections

I4. Intersection #4, Latrobe Road @ Town Center Boulevard

As shown in Table 21, this intersection operates at LOS F during the PM peak-hour without the project, and the project contributes more than 10 peak-hour trips to the intersection during the PM peak-hour. ***This is a significant impact.***

I5. Intersection #5, Latrobe Road @ White Rock Road

As shown in Table 21, this intersection operates at LOS F during the PM peak-hour without the project, and the project contributes more than 10 peak-hour trips to the intersection during the PM peak-hour. ***This is a significant impact.***

Mitigations:

Intersections

M4. Intersection #4, Latrobe Road @ Town Center Boulevard

The significant impact at this intersection can be mitigated by optimization of the Latrobe Road coordinated signal system, along with the following improvements: the restriping of the westbound Town Center Boulevard approach to include one left-through lane, and two right-turn lanes, with a permitted-overlap phase for the westbound right-turns. The El Dorado Hills Town Center Apartments project is responsible for, among other things, the lane designation and signal phasing mitigations described above.

The CIP includes a line item for unprogrammed traffic signal installation and operational and safety improvements at intersections, including improvements like construction of new traffic signals, construction of turn pockets, and the upgrade of existing traffic signal systems. The County annually monitors intersections with potential need for improvement through the Intersection Needs Prioritization Process. The Intersection Needs Prioritization Process is then used to inform the annual update to the CIP, and potential intersection improvements can be added, by the Board of Supervisors, to the CIP as funding becomes available. Therefore, appropriate mitigation, as determined by the CDS, would include payment of traffic impact mitigation fees to satisfy the project's fair share obligation towards this improvement or construction of the improvement with reimbursement for costs that exceed the project's proportional share if the improvement is needed but not included in future updates to the CIP or constructed by others.

As shown in Table 26, this mitigation measure results in the intersection operating at LOS D during the AM and LOS E during the PM peak-hour. Therefore, this impact is less than significant. In addition, the project may contribute its proportionate share to the County Department of Transportation's Intelligent Transportation System (ITS) program for the El Dorado Hills area, which is currently under development. If a signal at the project driveway were to be approved, fiber optic signal interconnect and conduit installation are required to provide coordinated signal operations. (Note: The Latrobe Road and Town Center Boulevard intersection mitigation is on a privately-owned roadway and should be coordinated with the property owner.)

M5. Intersection #5, Latrobe Road @ White Rock Road

This intersection operates at LOS F during the PM peak-hour without the project, and the project results in LOS F. Since the impact is identified under the Cumulative (2035) scenario, the timing

of the improvement is a function of the rate of population and employment growth. The County's Traffic Impact Mitigation (TIM) fee program provides a mechanism for collecting fair share contributions for improvements in the 2018 CIP. Accordingly, prior to Building Permit Issuance, the project shall provide to the County its proportionate share toward the costs of the identified improvements at this intersection.

The significant impact at this intersection can be mitigated by the addition of permitted-overlap right-turn phases as the northbound, westbound, and southbound approaches, and the optimization of the Latrobe Road coordinated signal system. In addition, the mitigation of this impact requires the signalization and coordination of the proposed project driveway (Intersection #6) with the existing Latrobe Road signal corridor. The addition of this new signal, by providing left-turn egress ability for the project, is effective in removing vehicles from the congested White Rock Road segment between Latrobe Road and Post Street, particularly for westbound left turns at Intersection #5 (Latrobe Road @ White Rock Road). This new signal's integration into, and expansion of the Latrobe Road signal corridor south of White Rock Road is anticipated to improve traffic progression by allowing for more structured vehicle platooning along this high speed, high volume corridor.

The CIP includes a line item for unprogrammed traffic signal installation and operational and safety improvements at intersections, including improvements like construction of new traffic signals, construction of turn pockets, and the upgrade of existing traffic signal systems. The County annually monitors intersections with potential need for improvement through the Intersection Needs Prioritization Process. The Intersection Needs Prioritization Process is then used to inform the annual update to the CIP, and potential intersection improvements can be added, by the Board of Supervisors, to the CIP as funding becomes available. Therefore, appropriate mitigation, as determined by the CDS, would include payment of traffic impact mitigation fees to satisfy the project's fair share obligation towards this improvement or construction of the improvement with reimbursement for costs that exceed the project's proportional share if the improvement is needed but not included in future updates to the CIP or constructed by others.

In addition, the project may contribute its proportionate share to the County Department of Transportation's Intelligent Transportation System (ITS) program for the El Dorado Hills area, which is currently under development. If a signal at the project driveway were to be approved, fiber optic signal interconnect and conduit installation are required to provide coordinated signal operations. As shown in Table 26, this mitigation measure results in the intersection operating at LOS E in the AM and PM peak-hours. Therefore, this impact is **less than significant.**

Table 26 – Intersection Levels of Service –
Cumulative (2035) plus Proposed Project Mitigated Conditions

ID	Intersection	Control	Peak Hour	Cumulative (2035) plus Proposed Project		Cumulative (2035) plus Proposed Project (Mitigated)	
				Delay (sec)	LOS	Delay (sec)	LOS
4	Latrobe Rd @ Town Center Blvd	Signal	AM	69.4	E	53.6	D
			PM	**140.8**	**F**	79.5	E
5	Latrobe Rd @ White Rock Rd	Signal	AM	**93.8**	**F**	75.9	E
			PM	**121.6**	**F**	79.3	E

Notes:
Bold represents unacceptable operations. Shaded represents significant impact.

OTHER CONSIDERATIONS

Intersection Queuing Evaluation

Vehicle queuing for critical movements at five (5) of the study intersections was evaluated. The calculated vehicle queues were compared to actual or anticipated vehicle storage lengths. Results of the queuing evaluation are presented in Table 27. Analysis sheets that include the anticipated vehicle queues are presented in Appendices B-H. As presented in Table 27, the addition of the proposed project adds a modest amount of additional queuing to these movements.

The addition of the proposed project results in the following:

- An increase in the northbound left-turn queue at Intersection #2 under Cumulative (2035) "plus project" Mitigated conditions, exceeding available storage by one vehicle.
- An increase in the eastbound right-turn queue at Intersection #3 under Near-Term (2025) and Cumulative (2035) "plus project" conditions, which exceeds the available storage capacity under "no-project" conditions. Under both Near-Term (2025) Mitigated and Cumulative (2035) Mitigated PM peak-hour conditions, the queue is reduced to acceptable lengths. Under Cumulative (2035) "plus- project" Mitigated AM peak-hour conditions, the queue is reduced below "no-project" conditions.
- An increase of less than one vehicle in the westbound left-turn queue at Intersection #5, which exceeds the available storage capacity under all "no-project" conditions. Under Cumulative (2035) "plus- project" Mitigated conditions, the queue is reduced below "no-project" conditions.
- An increase of less than four vehicles in the northbound left-turn queue at Intersection #5 under Near-Term (2025) and Cumulative (2035) "plus project" conditions, which exceeds the available storage capacity under "no-project" conditions.
- An increase of less than two vehicles in the westbound left-turn queue at Intersection #12, which exceeds the available storage capacity under both Near-Term (2025) and Cumulative (2035) "no-project" conditions.

As reflected in Table 27, the addition of the proposed project results in conditions at two locations that warrant modifications by the proposed project. The following is a discussion of each of these conditions.

Intersection #5, Latrobe Road @ White Rock Road

As shown in Table 27, the addition of the proposed project increases northbound left-turn queues from 214-feet to 309-feet in the PM peak-hour, with available storage capacity of 270-feet. Per the County's request, the applicant should mitigate this condition by lengthening the left turn pocket to 330-feet, based on the AM queue length of 327-feet.

Intersection #12, Post Street @ White Rock Road

As shown in Table 27, the addition of the proposed project increases westbound left-turn queues from 115-feet to 160-feet in the PM peak-hour, with available storage capacity of 120-feet. Per the County's request, the queue from westbound White Rock Road into the Project Driveway/Post Street should be monitored. Should the County determine queue spillbacks for this movement, the applicant will be responsible for retiming the signal.

Table 27 – Intersection Queuing Evaluation Results for Select Locations

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
#2, El Dorado Hills Blvd @ US-50 WB Ramps	**NBL**				
Existing		750	360	750	429
Existing plus Project			380		461
Existing plus Project (Mitigated)			-		-
Near-Term (2025)			219		660
Near-Term plus Project (2025)			214		636
Near-Term (2025) plus Project (Mitigated)			231		658
Cumulative (2035)			431		612
Cumulative (2035) plus Project			482		706
Cumulative (2035) plus Project (Mitigated)			480		**772**
#2, El Dorado Hills Blvd @ US-50 WB Ramps	**EBL**				
Existing		1850	141	1850	107
Existing plus Project			141		101
Existing plus Project (Mitigated)			-		-
Near-Term (2025)			97		143
Near-Term plus Project (2025)			91		153
Near-Term (2025) plus Project (Mitigated)			95		128
Cumulative (2035)			101		459
Cumulative (2035) plus Project			178		334
Cumulative (2035) plus Project (Mitigated)			91		172
#3, Latrobe Road @ US-50 EB Ramps	**EBR**				
Existing		415	321	415	259
Existing plus Project			310		277
Existing plus Project (Mitigated)			-		-
Near-Term (2025)			292		**759**
Near-Term plus Project (2025)			300		**514**
Near-Term (2025) plus Project (Mitigated)			302		333
Cumulative (2035)			**1236**		**957**
Cumulative (2035) plus Project			**1376**		**760**
Cumulative (2035) plus Project (Mitigated)			**747**		177
#5, Latrobe Rd @ White Rock Rd	**SBL**				
Existing		350	166	350	154
Existing plus Project			196		269
Existing plus Project (Mitigated)			-		-
Near-Term (2025)			122		244
Near-Term plus Project (2025)			118		299
Near-Term (2025) plus Project (Mitigated)			125		100
Cumulative (2035)			286		294
Cumulative (2035) plus Project			321		300
Cumulative (2035) plus Project (Mitigated)			296		211

Source: *Highway Capacity Manual (HCM) 2010* methodology per Synchro© v9.
Note: For approaches with dual left-turn lanes, the longest queue length is reported.

Table 27 – Intersection Queuing Evaluation Results for Select Locations (continued)

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
#5, Latrobe Rd @ White Rock Rd	**WBL**				
Existing			**176**		126
Existing plus Project			**190**		135
Existing plus Project (Mitigated)			-		-
Near-Term (2025)			**219**		**211**
Near-Term plus Project (2025)		175	**216**	175	**211**
Near-Term (2025) plus Project (Mitigated)			**220**		**214**
Cumulative (2035)			**266**		**223**
Cumulative (2035) plus Project			**262**		**211**
Cumulative (2035) plus Project (Mitigated)			**254**		**221**
#5, Latrobe Rd @ White Rock Rd	**NBL**				
Existing			124		110
Existing plus Project			118		181
Existing plus Project (Mitigated)			-		-
Near-Term (2025)			**320**		**279**
Near-Term plus Project (2025)		270	**317**	270	**316**
Near-Term (2025) plus Project (Mitigated)			**320**		202
Cumulative (2035)			**314**		214
Cumulative (2035) plus Project			**303**		**335**
Cumulative (2035) plus Project (Mitigated)			**327**		**309**
#6, Latrobe Rd @ Project Driveway	**SBL**				
Existing			N/A		N/A
Existing plus Project			30		57
Existing plus Project (Mitigated)			-		-
Near-Term (2025)			N/A		N/A
Near-Term plus Project (2025)		250	37	250	70
Near-Term (2025) plus Project (Mitigated)			36		897
Cumulative (2035)			N/A		N/A
Cumulative (2035) plus Project			40		63
Cumulative (2035) plus Project (Mitigated)			37		100
#12, Post St @ White Rock Rd	**WBL**				
Existing			111		94
Existing plus Project			**139**		**152**
Existing plus Project (Mitigated)			-		-
Near-Term (2025)			**123**		**129**
Near-Term plus Project (2025)		120	**130**	120	**163**
Near-Term (2025) plus Project (Mitigated)			**130**		**158**
Cumulative (2035)			**125**		**115**
Cumulative (2035) plus Project			**139**		**171**
Cumulative (2035) plus Project (Mitigated)			**135**		**160**

Source: *Highway Capacity Manual (HCM) 2010* methodology per Synchro© v9.
Note: For approaches with dual left-turn lanes, the longest queue length is reported.

On-Site Transportation Review

In accordance with the County's *Guidelines*[17], the following aspects of the proposed project were evaluated.

1. ***Existence of any current traffic problems in the local area such as a high-accident location, non-standard intersection or roadway, or an intersection in need of a traffic signal.***

   According to the County's 2017 *Accident Location Study*[18], several study area sites (i.e., intersections and roadway segments) experienced three (3) or more accidents during a three-year period between January 1, 2015, and December 31, 2017. According to the Study, these sites were selected for investigation and determination of corrective action(s). Table 28 provides a summary of the study area sites and their selected actions.

Table 28 – Project Area Sites Selected for Accident Investigation

Site #	Location Description	Accident Rate[+]	Identified Action
12	El Dorado Hills Blvd, vicinity of Saratoga Wy	1.33	S & D Review
24	Latrobe Rd, vicinity of Golden Foothill Pkwy	0.34	None Required
25	Latrobe Rd, vicinity of White Road Rd	0.50	None Required
41	Silva Valley Pkwy, vicinity of White Rock Rd	0.17	None Required
42	White Rock Rd, vicinity of Latrobe Rd	0.65	None Required
43	White Rock Rd, vicinity of Valley View Pkwy	0.73	None Required

Source: *Annual Accident Location Study 2017*, County of El Dorado Department of Transportation, April 12, 2018.
[+] # Accidents per Million Entering Vehicles (MEV)

According to the *Study*, five sites "do not require further review at this time. However, these sites will continue to be monitored and any subsequent increase in the frequency of accidents may necessitate further review and analysis." One site has been identified as a location requiring further review due to "high accident rates and/or severity. A further review will be made of [the] site, consisting of analysis of the accident history and collection of field measurements. Based on the findings of the investigation, requests or recommendations for improvement shall be prepared and processed."

Peak-Hour Traffic Signal Warrant Evaluation

A planning level assessment of the need for traffic signalization was performed for the un-signalized study intersection #14 (Silva Valley Parkway @ Tong Road). In addition, the Latrobe Road intersection with the Project Driveway (Intersection #6) was evaluated based on volumes assuming both left- and right-turns can be made onto Latrobe Road. Intersection #6 was evaluated as un-signalized in the analysis scenarios; however, the signalization of intersection #6 is included in mitigations M3 and M5 discussed above. If a signal is not approved, mitigations M3 and M5 would have to be reevaluated without this assumption. This evaluation was performed consistently with the peak-hour warrant methodologies noted in Section 4C of the *California Manual on Uniform Traffic Control Devices (CMUTCD), 2014 Edition (with April 2017 revisions)*. A summary of the peak-hour warrant results is presented in Table 29.

[17] *Transportation Impact Study Guidelines,* El Dorado County Community Development Agency, November 2014.
[18] *Annual Accident Location Study 2017*, County of El Dorado Department of Transportation, April 12,2018.

Table 29 – Traffic Signal Warrant Analysis Results

#	Intersection	Analysis Scenario					
		Existing	Existing plus PP	Near-Term (2025)	Near-Term (2025) plus PP	Cum (2035)	Cum (2035) plus PP
6	Latrobe Rd @ Project Dwy	-	No / Yes	-	No / Yes	-	No / Yes
14	Silva Valley Pkwy @ Tong Rd	No / No	No / No	No / No	No / No	No / No	No / No

Results are presented in AM / PM format.
Note: Peak-hour warrant is satisfied if Condition A or B is satisfied.

As shown in Table 29, the addition of the proposed project does not result in the peak-hour signal warrant being satisfied at the Silva Valley Parkway intersection with Tong Road. Detailed results of this analysis are presented in Appendix I.

2. *Proximity of proposed site driveway(s) to other driveways or intersections.*
The site plan for the proposed project (Figure 2) was qualitatively reviewed for general access and on-site circulation. According to the site plan, primary access to the site will be provided from White Rock Road at the existing Post Street signalize intersection. Three secondary driveways will serve the site; one existing right-in/right-out driveway along White Rock Road, one new right-in/right-out driveway along Latrobe Road at the south end of the project site, and one new left-in/right-in/right-out driveway along Latrobe Road. Detailed LOS and delay data were previously reported for the White Rock Road intersection with Post Street (Intersection #12) and the Latrobe Road intersection with the site access driveway (Intersection #6). The combination of these access points, as well as the on-site circulation system appears to provide adequate access to/from White Rock Road and Latrobe road and the surrounding transportation network.

3. *Adequacy of vehicle parking relative to both the anticipated demand and zoning code requirements.*
The project site plan (Figure 2) will accommodate more than 526 parking stalls. According to El Dorado County Code of Ordinances Article 3, Chapter 130.35, the project is required to provide a minimum of 429 parking stalls (1.2 stalls per hotel room and 1 stall per 400 square feet of retail).

4. *Adequacy of the project site design to fully satisfy truck loading demand on-site, when the anticipated number of deliveries and service calls may exceed 10 per day.*
The project site is understood to be designed with appropriately designated truck loading/unloading zones to minimize these activities' impact to the site's parking supply. We understand that time restrictions may be applied as an additional strategy by which to control the effect of the site's truck activities on traditional operations.

5. *Adequacy of the project site design to provide at least a 25' minimum required throat depth (MRTD) at project driveways. Include calculation of the MRTD.*
According to the project site plan (Figure 2), the two new site driveways provide at least 25-feet of MRTD. This is the throat depth required based on the methodology presented in *Estimation of Maximum Queue Lengths at Unsignalized Intersections* (ITE Journal, November 2001). Both project driveways contain medians with at least 100 feet of storage until the first drive aisle. This storage is shown to be more than adequate based on queuing reports contained in Appendix C, Appendix E, and Appendix G.

6. *Adequacy of the project site design to convey all vehicle types.*
The site is anticipated to accommodate the circulation needs of all vehicle types, including fire access. According to the project site plan (Figure 2), the project site includes a traffic circle to accommodate traffic flows between project buildings and available driveways.

7. Queuing Analysis of "Drive-through" Facility
   The project site plan (Figure 2) depicts drive-through queuing space for 10 vehicles at the proposed drive-through restaurant. Although not depicted, the County's *Community Design Standards*, Section 4.4, subsection H, states, "the stacking lane should accommodate a minimum of four cars per drive-through window, in addition to the car receiving service." Recently collected drive-through queuing data for three similarly sized fast food restaurants in South Placer County reveal a maximum queue of 13 vehicles or 325-feet (see data provided in Appendix J). Considering the relatively consistent suburban locations and anticipated uses, the proposed project is expected to experience maximum drive-through queuing that exceeds the available storage. The result of this condition will result in spillback into the adjacent drive aisle and will have the potential to impede on-site vehicle and pedestrian movements. While temporary on-site queuing associated with this drive-through facility is not anticipated to result in off-site operational or safety concerns, the project should consider adding "KEEP CLEAR" striping along the main access driveway to reduce the likelihood of a standing vehicle queue along this driveway during peak periods of operation.

8. *Adequacy of sight distance on-site.*
   An evaluation of sight distance was completed for the two site driveways, one proposed along Latrobe Road and one existing along White Rock Road, based on observed horizontal and vertical geometric conditions. These evaluations were performed in accordance with the guidelines presented in the *Geometric Design of Highways and Streets,* published by the American Associate of State Highway and Transportation Officials (AASHTO), and the Highway Design Manual, published by Caltrans. Adequate sight distance was observed at both driveway intersections. Nevertheless, in all cases, roadside vegetation should be maintained to preserve sight distance. In addition, according to the project site plan (Figure 2) there appears to be adequate sight distance on-site to facilitate safe and orderly circulation.

Other Transportation-Related Impacts and Mitigation Considerations

In accordance with the County's *Guidelines*[1], the proposed project was evaluated against the following *General Plan* goals:

- *Emergency Vehicle Access*
  Fire Safe Regulations[19] state that on-site roadways shall "provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a wildfire emergency…" All project roadways shall be designed and constructed in accordance with these requirements. The proposed project is considered to allow for adequate access and on-site circulation for emergency vehicles.

- *Deliveries of Goods and Services*
  The proposed project is considered to allow for adequate on-site circulation for all vehicle types, including delivery vehicles for goods and services. Delivery vehicles will be able access various drop off lanes during off-peak hours, but more appropriately, will be able to pull curbside in front of the administration office for routine package/mail and supply delivery. The site layout will enable them to use the complete loop road around the campus.

- *Access to Public Transit Services consistent with General Plan Circulation Element Goal TC-2: "To promote a safe and efficient transit system that provides service to all residents, including senior citizens, youths, the disabled, and those without access to automobiles that also helps to reduce congestion, and improves the environment."*

[19] *Fire Safe Regulations*, Title 14 Natural Resources, Division 1.5 Department of Forestry, Chapter 7 – Fire Protection, Subchapter 2 SRA Safe Regulations, Article 2 Emergency Access, El Dorado County Building Department.

The El Dorado Transit Sacramento Commuter and Cameron Park/El Dorado Hills routes provide service along Latrobe Road north of White Rock Road, and along White Rock Road between Latrobe Road and Valley View Parkway, in the project vicinity. Adequate access to existing transit stop locations on White Rock Road should be provided.

- *Transportation System Management consistent with General Plan Circulation Element Goal TC-3: "To reduce travel demand on the County's road system and maximize the operating efficiency of transportation facilities, thereby reducing the quantity of motor vehicle emissions and the amount of investment required in new or expanded facilities."*
  The proposed project driveway on Latrobe Road, if signalized, would alleviate congestion on the White Rock Road segment between Latrobe Road and Post Street by improving access to the project site via Latrobe Road. The addition of this new signal, by providing left-turn egress ability for the project, is effective in removing vehicles from the congested White Rock Road segment between Latrobe Road and Post Street, particularly for westbound left turns at Intersection #5 (Latrobe Road @ White Rock Road). This new signal's integration into, and expansion of the Latrobe Road signal corridor south of White Rock Road is anticipated to improve traffic progression by allowing for more structured vehicle platooning along this high speed, high volume corridor.

- *Non-Motorized Transportation consistent with General Plan Circulation Element Goal TC-4: "To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes."*
  According to the *El Dorado County Bicycle Transportation Plan*, Class II Bike Lanes exist along White Rock Road and Latrobe Road in the vicinity of the project site. While the project will not result in removal of a bikeway/bike lane or prohibition of implementation of the facilities identified in the *Plan*, it is required to include pedestrian/bicycle paths connecting to adjacent commercial, research and development, or industrial projects and any schools, parks, or other public facilities. The proposed project will be required to construct on-site roadway and pedestrian facilities in accordance with County design guidelines. These on-site pedestrian and bicycle facilities will connect the project with the existing Class II Bike Lanes along White Rock Road and Latrobe Road. Through these connections to the proposed bike lane network, the project will provide continuity with adjacent projects, schools, parks, and other public facilities.

CONCLUSIONS

Significant findings of this study include:

- The proposed project is estimated to generate approximately 4,400 new daily trips, with 128 new trips occurring during the AM peak-hour, and 382 new trips occurring during the PM peak-hour.
- The County's Travel Demand Model (TDM) does not account for the project's proposed land uses and, because the County's TDM does not assume the project's employment growth in TAZ 172, the *General Plan's* cumulative traffic analysis cannot serve as the basis for the Cumulative (2035) traffic analysis of the project. As such, Cumulative (2035) conditions are included in this evaluation.
- As defined by the County, the addition of the proposed project to the Existing, Near-Term (2025), and Cumulative (2035) scenarios significantly worsens conditions at multiple study intersections. All of these impacts can be mitigated to be ***less than significant***.

Appendix A

Traffic Count Data Sheets

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

ALL TRAFFIC DATA

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7907-001 Stonebriar Drive/4 Seasons Drive & White Rock Road
Date : 11/18/2015

Unshifted Count = All Vehicles & Uturns

	Stonebriar Drive/4 Seasons Drive Southbound					White Rock Road Westbound					Stonebriar Drive/4 Seasons Drive Northbound					White Rock Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	4	0	10	0	14	0	23	1	0	24	1	0	2	0	3	1	11	0	0	12	53	0
6:15	4	0	4	0	8	1	26	4	0	31	1	0	0	0	1	0	19	0	0	19	59	0
6:30	6	0	5	0	11	0	55	4	0	59	0	0	2	0	2	1	43	0	0	44	116	0
6:45	12	0	14	0	26	6	51	2	0	59	3	0	3	0	6	2	56	0	0	58	149	0
Total	26	0	33	0	59	7	155	11	0	173	5	0	7	0	12	4	129	0	0	133	377	0
7:00	33	0	22	0	55	1	101	6	0	108	3	0	3	0	6	0	45	0	0	45	214	0
7:15	25	0	8	0	33	2	112	7	0	121	2	0	3	0	5	4	63	1	0	68	227	0
7:30	25	1	15	0	41	3	119	9	0	131	4	0	3	0	7	1	80	0	0	81	260	0
7:45	17	0	11	0	28	3	95	16	0	114	2	0	8	0	10	3	89	0	0	92	244	0
Total	100	1	56	0	157	9	427	38	0	474	11	0	17	0	28	8	277	1	0	286	945	0
8:00	19	0	13	0	32	2	86	15	0	103	3	0	8	0	11	2	93	3	0	98	244	0
8:15	18	0	6	0	24	4	92	18	0	114	1	0	10	0	11	2	97	1	0	100	249	0
8:30	18	0	11	0	29	4	80	15	0	99	8	0	10	0	18	3	83	2	0	88	234	0
8:45	22	0	9	0	31	5	63	15	0	83	2	0	9	0	11	6	86	1	0	93	218	0
Total	77	0	39	0	116	15	321	63	0	399	14	0	37	0	51	13	359	7	0	379	945	0
16:00	12	0	5	0	17	7	100	12	0	119	2	0	10	0	12	5	84	9	0	98	246	0
16:15	13	0	7	0	20	8	86	17	0	111	2	0	12	0	14	9	103	7	0	119	264	0
16:30	7	1	2	0	10	18	175	14	0	207	3	1	15	0	19	5	91	4	0	100	336	0
16:45	8	0	3	0	11	11	145	24	0	180	3	0	8	0	11	6	99	5	0	110	312	0
Total	40	1	17	0	58	44	506	67	0	617	10	1	45	0	56	25	377	25	0	427	1158	0
17:00	15	0	10	0	25	7	163	14	0	184	1	0	6	0	7	14	147	3	0	164	380	0
17:15	12	0	3	0	15	11	106	32	0	149	4	1	7	0	12	11	144	4	0	159	335	0
17:30	12	0	4	0	16	7	94	22	0	123	0	0	8	0	8	18	157	5	0	180	327	0
17:45	18	0	5	0	23	11	77	20	0	108	0	0	5	0	5	13	108	3	0	124	260	0
Total	57	0	22	0	79	36	440	88	0	564	5	1	26	0	32	56	556	15	0	627	1302	0
18:00	12	0	13	0	25	5	49	17	0	71	0	0	9	0	9	17	85	2	0	104	209	0
18:15	5	0	7	0	12	4	38	21	0	63	0	2	6	0	8	18	53	4	0	75	158	0
18:30	11	0	4	0	15	7	42	9	0	58	1	0	2	0	3	7	39	2	0	48	124	0
18:45	16	0	5	0	21	11	25	18	0	54	0	0	5	0	5	11	40	5	0	56	136	0
Total	44	0	29	0	73	27	154	65	0	246	1	2	22	0	25	53	217	13	0	283	627	0
Grand Total	344	2	196	0	542	138	2003	332	0	2473	46	4	154	0	204	159	1915	61	0	2135	5354	0
Apprch %	63.5%	0.4%	36.2%	0.0%		5.6%	81.0%	13.4%	0.0%		22.5%	2.0%	75.5%	0.0%		7.4%	89.7%	2.9%	0.0%			
Total %	6.4%	0.0%	3.7%	0.0%	10.1%	2.6%	37.4%	6.2%	0.0%	46.2%	0.9%	0.1%	2.9%	0.0%	3.8%	3.0%	35.8%	1.1%	0.0%	39.9%	100.0%	

AM PEAK HOUR	Stonebriar Drive/4 Seasons Drive Southbound					White Rock Road Westbound					Stonebriar Drive/4 Seasons Drive Northbound					White Rock Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	25	1	15	0	41	3	119	9	0	131	4	0	3	0	7	1	80	0	0	81	260
7:45	17	0	11	0	28	3	95	16	0	114	2	0	8	0	10	3	89	0	0	92	244
8:00	19	0	13	0	32	2	86	15	0	103	3	0	8	0	11	2	93	3	0	98	244
8:15	18	0	6	0	24	4	92	18	0	114	1	0	10	0	11	2	97	1	0	100	249
Total Volume	79	1	45	0	125	12	392	58	0	462	10	0	29	0	39	8	359	4	0	371	997
% App Total	63.2%	0.8%	36.0%	0.0%		2.6%	84.8%	12.6%	0.0%		25.6%	0.0%	74.4%	0.0%		2.2%	96.8%	1.1%	0.0%		
PHF	.790	.250	.750	.000	.762	.750	.824	.806	.000	.882	.625	.000	.725	.000	.886	.667	.925	.333	.000	.928	.959

PM PEAK HOUR	Stonebriar Drive/4 Seasons Drive Southbound					White Rock Road Westbound					Stonebriar Drive/4 Seasons Drive Northbound					White Rock Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	7	1	2	0	10	18	175	14	0	207	3	1	15	0	19	5	91	4	0	100	336
16:45	8	0	3	0	11	11	145	24	0	180	3	0	8	0	11	6	99	5	0	110	312
17:00	15	0	10	0	25	7	163	14	0	184	1	0	6	0	7	14	147	3	0	164	380
17:15	12	0	3	0	15	11	106	32	0	149	4	1	7	0	12	11	144	4	0	159	335
Total Volume	42	1	18	0	61	47	589	84	0	720	11	2	36	0	49	36	481	16	0	533	1363
% App Total	68.9%	1.6%	29.5%	0.0%		6.5%	81.8%	11.7%	0.0%		22.4%	4.1%	73.5%	0.0%		6.8%	90.2%	3.0%	0.0%		
PHF	.700	.250	.450	.000	.610	.653	.841	.656	.000	.870	.688	.500	.600	.000	.645	.643	.818	.800	.000	.813	.897

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

ALL TRAFFIC DATA

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7907-002 Latrobe Road & Golden Foothill Parkway(North)
Date : 11/18/2015

Unshifted Count = All Vehicles & Uturns

	Latrobe Road Southbound					Golden Foothill Parkway(North) Westbound					Latrobe Road Northbound					Golden Foothill Parkway(North) Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	0	107	5	0	112	0	0	1	0	1	0	92	0	0	92	4	0	0	0	4	209	0
6:15	0	165	17	0	182	0	0	0	0	0	1	62	0	0	63	1	0	0	0	1	246	0
6:30	0	170	26	0	196	0	0	2	0	2	3	93	0	0	96	4	0	0	0	4	298	0
6:45	0	261	68	0	329	0	0	0	0	0	2	117	0	0	119	8	0	0	0	8	456	0
Total	0	703	116	0	819	0	0	3	0	3	6	364	0	0	370	17	0	0	0	17	1209	0
7:00	0	223	48	0	271	0	0	3	0	3	4	124	2	0	130	7	0	1	0	8	412	0
7:15	0	251	55	1	307	1	1	1	0	3	1	152	0	0	153	12	1	2	0	15	478	1
7:30	2	213	64	0	279	1	0	4	0	5	5	133	1	0	139	5	0	0	0	5	428	0
7:45	1	316	120	0	437	2	2	2	0	6	7	163	0	1	171	24	0	1	0	25	639	1
Total	3	1003	287	1	1294	4	3	10	0	17	17	572	3	1	593	48	1	4	0	53	1957	2
8:00	1	271	105	0	377	1	1	4	0	6	7	145	1	0	153	35	1	1	0	37	573	0
8:15	1	299	87	2	389	3	1	3	0	7	6	151	1	0	158	37	0	3	0	40	594	2
8:30	1	224	46	1	272	3	0	3	0	6	3	177	1	0	181	18	0	2	0	20	479	1
8:45	0	269	76	0	345	0	1	3	0	4	2	125	0	0	127	18	0	3	0	21	497	0
Total	3	1063	314	3	1383	7	3	13	0	23	18	598	3	0	619	108	1	9	0	118	2143	3
16:00	2	139	27	0	168	1	0	2	0	3	3	289	0	0	292	68	0	1	0	69	532	0
16:15	3	179	31	0	213	2	1	4	0	7	0	238	1	0	239	67	1	4	0	72	531	0
16:30	3	168	23	1	195	5	0	3	0	8	3	362	4	0	369	105	3	3	0	111	683	1
16:45	7	137	22	0	166	2	0	3	0	5	1	283	2	0	286	57	2	1	0	60	517	0
Total	15	623	103	1	742	10	1	12	0	23	7	1172	7	0	1186	297	6	9	0	312	2263	1
17:00	2	175	29	2	208	1	1	0	0	2	0	334	0	0	334	105	1	2	0	108	652	2
17:15	4	206	23	0	233	0	1	1	0	2	1	219	2	0	222	58	2	2	0	62	519	0
17:30	2	187	20	1	210	0	1	3	0	4	0	308	4	0	312	56	4	3	1	64	590	2
17:45	3	136	20	0	159	0	2	1	0	3	0	187	2	0	189	42	2	3	0	47	398	0
Total	11	704	92	3	810	1	5	5	0	11	1	1048	8	0	1057	261	9	10	1	281	2159	4
18:00	3	120	12	0	135	0	0	0	0	0	1	200	1	0	202	38	2	2	0	42	379	0
18:15	6	132	16	0	154	1	0	0	0	1	0	137	2	0	139	25	1	1	0	27	321	0
18:30	7	130	6	1	144	1	0	2	0	3	0	117	0	0	117	19	2	0	0	21	285	1
18:45	2	98	6	1	107	1	0	1	0	2	0	94	0	1	95	27	1	0	0	28	232	2
Total	18	480	40	2	540	3	0	3	0	6	1	548	3	1	553	109	6	3	0	118	1217	3
Grand Total	50	4576	952	10	5588	25	12	46	0	83	50	4302	24	2	4378	840	23	35	1	899	10948	13
Apprch %	0.9%	81.9%	17.0%	0.2%		30.1%	14.5%	55.4%	0.0%		1.1%	98.3%	0.5%	0.0%		93.4%	2.6%	3.9%	0.1%			
Total %	0.5%	41.8%	8.7%	0.1%	51.0%	0.2%	0.1%	0.4%	0.0%	0.8%	0.5%	39.3%	0.2%	0.0%	40.0%	7.7%	0.2%	0.3%	0.0%	8.2%	100.0%	

AM PEAK HOUR	Latrobe Road Southbound					Golden Foothill Parkway(North) Westbound					Latrobe Road Northbound					Golden Foothill Parkway(North) Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	1	316	120	0	437	2	2	2	0	6	7	163	0	1	171	24	0	1	0	25	639
8:00	1	271	105	0	377	1	1	4	0	6	7	145	1	0	153	35	1	1	0	37	573
8:15	1	299	87	2	389	3	1	3	0	7	6	151	1	0	158	37	0	3	0	40	594
8:30	1	224	46	1	272	3	0	3	0	6	3	177	1	0	181	18	0	2	0	20	479
Total Volume	4	1110	358	3	1475	9	4	12	0	25	23	636	3	1	663	114	1	7	0	122	2285
% App Total	0.3%	75.3%	24.3%	0.2%		36.0%	16.0%	48.0%	0.0%		3.5%	95.9%	0.5%	0.2%		93.4%	0.8%	5.7%	0.0%		
PHF	1.000	.878	.746	.375	.844	.750	.500	.750	.000	.893	.821	.898	.750	.250	.916	.770	.250	.583	.000	.763	.894

PM PEAK HOUR	Latrobe Road Southbound					Golden Foothill Parkway(North) Westbound					Latrobe Road Northbound					Golden Foothill Parkway(North) Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	3	179	31	0	213	2	1	4	0	7	0	238	1	0	239	67	1	4	0	72	531
16:30	3	168	23	1	195	5	0	3	0	8	3	362	4	0	369	105	3	3	0	111	683
16:45	7	137	22	0	166	2	0	3	0	5	1	283	2	0	286	57	2	1	0	60	517
17:00	2	175	29	2	208	1	1	0	0	2	0	334	0	0	334	105	1	2	0	108	652
Total Volume	15	659	105	3	782	10	2	10	0	22	4	1217	7	0	1228	334	7	10	0	351	2383
% App Total	1.9%	84.3%	13.4%	0.4%		45.5%	9.1%	45.5%	0.0%		0.3%	99.1%	0.6%	0.0%		95.2%	2.0%	2.8%	0.0%		
PHF	.536	.920	.847	.375	.918	.500	.500	.625	.000	.688	.333	.840	.438	.000	.832	.795	.583	.625	.000	.791	.872

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

ALL TRAFFIC DATA

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7907-003 Latrobe Road & Suncast Lane
Date : 11/18/2015

Unshifted Count = All Vehicles & Uturns

	Latrobe Road Southbound					Suncast Lane Westbound					Latrobe Road Northbound					Suncast Lane Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	0	103	10	0	113	0	0	0	0	0	1	87	0	0	88	6	0	0	0	6	207	0
6:15	0	139	5	0	144	0	0	0	0	0	0	63	0	0	63	0	0	0	0	0	207	0
6:30	0	169	11	0	180	0	0	0	0	0	1	87	0	0	88	1	0	0	0	1	269	0
6:45	0	221	14	0	235	0	0	0	0	0	0	110	0	0	110	2	0	0	0	2	347	0
Total	0	632	40	0	672	0	0	0	0	0	2	347	0	0	349	9	0	0	0	9	1030	0
7:00	0	206	21	0	227	0	0	0	0	0	1	123	0	0	124	6	0	0	0	6	357	0
7:15	0	236	29	0	265	0	0	0	0	0	2	148	0	0	150	4	0	0	0	4	419	0
7:30	0	191	29	0	220	0	0	0	0	0	1	136	0	0	137	6	0	1	0	7	364	0
7:45	0	272	41	0	313	0	0	0	0	0	5	172	0	0	177	4	0	1	0	5	495	0
Total	0	905	120	0	1025	0	0	0	0	0	9	579	0	0	588	20	0	2	0	22	1635	0
8:00	0	235	40	0	275	0	0	0	0	0	7	126	0	0	133	24	0	3	0	27	435	0
8:15	0	248	39	0	287	0	0	0	0	0	6	150	0	0	156	8	0	2	0	10	453	0
8:30	0	211	40	0	251	0	0	0	0	0	2	169	0	0	171	9	0	1	0	10	432	0
8:45	0	215	42	0	257	0	0	0	0	0	4	125	0	0	129	6	0	1	0	7	393	0
Total	0	909	161	0	1070	0	0	0	0	0	19	570	0	0	589	47	0	7	0	54	1713	0
16:00	0	140	7	0	147	0	0	0	0	0	1	260	0	0	261	40	0	6	0	46	454	0
16:15	0	159	17	0	176	0	0	0	0	0	1	213	0	0	214	26	0	6	0	32	422	0
16:30	0	146	26	0	172	0	0	0	0	0	1	325	0	0	326	43	0	4	0	47	545	0
16:45	0	133	21	0	154	0	0	0	0	0	1	239	0	0	240	44	0	4	0	48	442	0
Total	0	578	71	0	649	0	0	0	0	0	4	1037	0	0	1041	153	0	20	0	173	1863	0
17:00	0	153	20	0	173	0	0	0	0	0	0	272	0	0	272	58	0	7	0	65	510	0
17:15	0	171	22	0	193	0	0	0	0	0	1	186	0	0	187	32	0	5	0	37	417	0
17:30	0	180	10	0	190	0	0	0	0	0	2	280	0	0	282	33	0	5	0	38	510	0
17:45	0	148	8	0	156	0	0	0	0	0	0	165	0	0	165	22	0	1	0	23	344	0
Total	0	652	60	0	712	0	0	0	0	0	3	903	0	0	906	145	0	18	0	163	1781	0
18:00	0	108	16	0	124	0	0	0	0	0	2	168	0	0	170	30	0	3	0	33	327	0
18:15	0	108	18	0	126	0	0	0	0	0	1	97	0	0	98	46	0	1	0	47	271	0
18:30	0	113	8	0	121	0	0	0	0	0	0	92	0	0	92	24	0	2	0	26	239	0
18:45	0	100	11	0	111	0	0	0	0	0	0	88	0	0	88	6	0	0	0	6	205	0
Total	0	429	53	0	482	0	0	0	0	0	3	445	0	0	448	106	0	6	0	112	1042	0
Grand Total	0	4105	505	0	4610	0	0	0	0	0	40	3881	0	0	3921	480	0	53	0	533	9064	0
Apprch %	0.0%	89.0%	11.0%	0.0%		0.0%	0.0%	0.0%	0.0%		1.0%	99.0%	0.0%	0.0%		90.1%	0.0%	9.9%	0.0%			
Total %	0.0%	45.3%	5.6%	0.0%	50.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	42.8%	0.0%	0.0%	43.3%	5.3%	0.0%	0.6%	0.0%	5.9%	100.0%	

AM PEAK HOUR	Latrobe Road Southbound					Suncast Lane Westbound					Latrobe Road Northbound					Suncast Lane Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	272	41	0	313	0	0	0	0	0	5	172	0	0	177	4	0	1	0	5	495
8:00	0	235	40	0	275	0	0	0	0	0	7	126	0	0	133	24	0	3	0	27	435
8:15	0	248	39	0	287	0	0	0	0	0	6	150	0	0	156	8	0	2	0	10	453
8:30	0	211	40	0	251	0	0	0	0	0	2	169	0	0	171	9	0	1	0	10	432
Total Volume	0	966	160	0	1126	0	0	0	0	0	20	617	0	0	637	45	0	7	0	52	1815
% App Total	0.0%	85.8%	14.2%	0.0%		0.0%	0.0%	0.0%	0.0%		3.1%	96.9%	0.0%	0.0%		86.5%	0.0%	13.5%	0.0%		
PHF	.000	.888	.976	.000	.899	.000	.000	.000	.000	.000	.714	.897	.000	.000	.900	.469	.000	.583	.000	.481	.917

PM PEAK HOUR	Latrobe Road Southbound					Suncast Lane Westbound					Latrobe Road Northbound					Suncast Lane Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	159	17	0	176	0	0	0	0	0	1	213	0	0	214	26	0	6	0	32	422
16:30	0	146	26	0	172	0	0	0	0	0	1	325	0	0	326	43	0	4	0	47	545
16:45	0	133	21	0	154	0	0	0	0	0	1	239	0	0	240	44	0	4	0	48	442
17:00	0	153	20	0	173	0	0	0	0	0	0	272	0	0	272	58	0	7	0	65	510
Total Volume	0	591	84	0	675	0	0	0	0	0	3	1049	0	0	1052	171	0	21	0	192	1919
% App Total	0.0%	87.6%	12.4%	0.0%		0.0%	0.0%	0.0%	0.0%		0.3%	99.7%	0.0%	0.0%		89.1%	0.0%	10.9%	0.0%		
PHF	.000	.929	.808	.000	.959	.000	.000	.000	.000	.000	.750	.807	.000	.000	.807	.737	.000	.750	.000	.738	.880

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

ALL TRAFFIC DATA

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7907-004 Latrobe Road & Golden Foothill Parkway(South)/Club\
Date : 11/18/2015

Unshifted Count = All Vehicles & Uturns

	Latrobe Road Southbound					Golden Foothill Parkway(South)/Clubview Drive Westbound					Latrobe Road Northbound					Golden Foothill Parkway(South)/Clubview Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	7	45	59	0	111	1	2	15	0	18	0	53	0	0	53	14	2	0	0	16	198	0
6:15	17	64	49	0	130	0	3	20	0	23	0	36	0	0	36	3	1	0	0	4	193	0
6:30	22	55	70	0	147	0	3	31	0	34	3	50	0	0	53	6	1	2	0	9	243	0
6:45	58	96	81	0	235	1	3	32	0	36	4	60	1	0	65	11	3	0	0	14	350	0
Total	104	260	259	0	623	2	11	98	0	111	7	199	1	0	207	34	7	2	0	43	984	0
7:00	52	81	65	0	198	1	5	41	0	47	4	64	1	0	69	21	0	0	0	21	335	0
7:15	38	91	96	0	225	0	4	48	0	52	0	79	0	0	79	13	2	1	0	16	372	0
7:30	29	90	74	0	193	3	7	42	0	52	3	89	0	0	92	11	4	0	0	15	352	0
7:45	50	96	114	0	260	4	11	58	0	73	1	88	1	0	90	19	5	1	0	25	448	0
Total	169	358	349	0	876	8	27	189	0	224	8	320	2	0	330	64	11	2	0	77	1507	0
8:00	35	108	109	0	252	2	12	41	0	55	1	82	1	0	84	21	7	1	0	29	420	0
8:15	27	110	117	0	254	1	17	42	0	60	2	82	0	0	84	36	6	0	0	42	440	0
8:30	29	95	81	0	205	2	2	60	0	64	5	77	2	0	84	29	6	3	0	38	391	0
8:45	25	119	77	0	221	4	8	44	0	56	2	70	1	0	73	11	1	1	0	13	363	0
Total	116	432	384	0	932	9	39	187	0	235	10	311	4	0	325	97	20	5	0	122	1614	0
16:00	34	71	30	0	135	1	2	30	0	33	0	139	0	0	139	101	8	0	0	109	416	0
16:15	41	103	36	0	180	0	3	22	0	25	0	101	1	0	102	81	9	1	0	91	398	0
16:30	40	73	18	0	131	0	3	44	0	47	3	161	1	0	165	132	10	5	0	147	490	0
16:45	43	78	27	0	148	2	7	30	0	39	0	125	0	0	125	80	5	1	0	86	398	0
Total	158	325	111	0	594	3	15	126	0	144	3	526	2	0	531	394	32	7	0	433	1702	0
17:00	52	88	17	0	157	1	4	26	0	31	0	137	1	0	138	109	10	2	0	121	447	0
17:15	53	94	42	0	189	0	4	22	0	26	0	111	0	0	111	61	5	0	0	66	392	0
17:30	58	104	18	0	180	2	2	67	0	71	3	110	2	0	115	95	15	2	0	112	478	0
17:45	40	79	29	0	148	2	1	20	0	23	1	99	3	0	103	48	6	0	0	54	328	0
Total	203	365	106	0	674	5	11	135	0	151	4	457	6	0	467	313	36	4	0	353	1645	0
18:00	44	56	9	0	109	1	1	20	0	22	0	80	1	0	81	56	8	0	0	64	276	0
18:15	38	68	13	0	119	1	2	12	0	15	3	46	1	0	50	25	2	0	0	27	211	0
18:30	45	63	14	0	122	1	3	18	0	22	2	56	1	0	59	22	4	2	0	28	231	0
18:45	31	43	17	0	91	1	2	20	0	23	0	38	2	0	40	23	1	1	0	25	179	0
Total	158	230	53	0	441	4	8	70	0	82	5	220	5	0	230	126	15	3	0	144	897	0
Grand Total	908	1970	1262	0	4140	31	111	805	0	947	37	2033	20	0	2090	1028	121	23	0	1172	8349	0
Apprch %	21.9%	47.6%	30.5%	0.0%		3.3%	11.7%	85.0%	0.0%		1.8%	97.3%	1.0%	0.0%		87.7%	10.3%	2.0%	0.0%			
Total %	10.9%	23.6%	15.1%	0.0%	49.6%	0.4%	1.3%	9.6%	0.0%	11.3%	0.4%	24.4%	0.2%	0.0%	25.0%	12.3%	1.4%	0.3%	0.0%	14.0%	100.0%	

AM PEAK HOUR	Latrobe Road Southbound					Golden Foothill Parkway(South)/Clubview Drive Westbound					Latrobe Road Northbound					Golden Foothill Parkway(South)/Clubview Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	50	96	114	0	260	4	11	58	0	73	1	88	1	0	90	19	5	1	0	25	448
8:00	35	108	109	0	252	2	12	41	0	55	1	82	1	0	84	21	7	1	0	29	420
8:15	27	110	117	0	254	1	17	42	0	60	2	82	0	0	84	36	6	0	0	42	440
8:30	29	95	81	0	205	2	2	60	0	64	5	77	2	0	84	29	6	3	0	38	391
Total Volume	141	409	421	0	971	9	42	201	0	252	9	329	4	0	342	105	24	5	0	134	1699
% App Total	14.5%	42.1%	43.4%	0.0%		3.6%	16.7%	79.8%	0.0%		2.6%	96.2%	1.2%	0.0%		78.4%	17.9%	3.7%	0.0%		
PHF	.705	.930	.900	.000	.934	.563	.618	.838	.000	.863	.450	.935	.500	.000	.950	.729	.857	.417	.000	.798	.948

PM PEAK HOUR	Latrobe Road Southbound					Golden Foothill Parkway(South)/Clubview Drive Westbound					Latrobe Road Northbound					Golden Foothill Parkway(South)/Clubview Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	41	103	36	0	180	0	3	22	0	25	0	101	1	0	102	81	9	1	0	91	398
16:30	40	73	18	0	131	0	3	44	0	47	3	161	1	0	165	132	10	5	0	147	490
16:45	43	78	27	0	148	2	7	30	0	39	0	125	0	0	125	80	5	1	0	86	398
17:00	52	88	17	0	157	1	4	26	0	31	0	137	1	0	138	109	10	2	0	121	447
Total Volume	176	342	98	0	616	3	17	122	0	142	3	524	3	0	530	402	34	9	0	445	1733
% App Total	28.6%	55.5%	15.9%	0.0%		2.1%	12.0%	85.9%	0.0%		0.6%	98.9%	0.6%	0.0%		90.3%	7.6%	2.0%	0.0%		
PHF	.846	.830	.681	.000	.856	.375	.607	.693	.000	.755	.250	.814	.750	.000	.803	.761	.850	.450	.000	.757	.884

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

ALL TRAFFIC DATA

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7907-005 Post Street & White Rock Road
Date : 11/18/2015

Unshifted Count = All Vehicles & Uturns

	Post Street Southbound					White Rock Road Westbound					Post Street Northbound					White Rock Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	4	0	12	0	16	0	32	15	0	47	2	0	0	0	2	7	16	0	0	23	88	0
6:15	4	1	12	0	17	4	37	18	0	59	3	0	0	0	3	6	20	0	0	26	105	0
6:30	9	0	19	0	28	1	52	21	0	74	2	0	2	0	4	10	30	0	0	40	146	0
6:45	10	1	26	0	37	5	74	15	0	94	5	2	1	0	8	7	32	0	0	39	178	0
Total	27	2	69	0	98	10	195	69	0	274	12	2	3	0	17	30	98	0	0	128	517	0
7:00	15	1	27	0	43	3	88	26	0	117	9	1	2	0	12	9	42	1	1	53	225	1
7:15	13	1	25	0	39	4	96	32	0	132	8	0	2	0	10	15	52	1	0	68	249	0
7:30	13	2	31	0	46	7	129	23	0	159	9	0	2	0	11	18	53	4	0	75	291	0
7:45	18	2	28	0	48	7	112	58	0	177	14	2	4	0	20	18	51	1	0	70	315	0
Total	59	6	111	0	176	21	425	139	0	585	40	3	10	0	53	60	198	7	1	266	1080	1
8:00	11	4	26	0	41	6	136	43	0	185	10	1	2	0	13	23	58	3	0	84	323	0
8:15	7	2	26	0	35	4	135	31	0	170	15	0	1	0	16	21	86	2	0	109	330	0
8:30	12	1	27	0	40	2	104	23	0	129	5	0	0	0	5	21	63	0	1	85	259	1
8:45	11	2	18	0	31	12	105	37	0	154	9	3	2	0	14	28	41	2	0	71	270	0
Total	41	9	97	0	147	24	480	134	0	638	39	4	5	0	48	93	248	7	1	349	1182	1
16:00	24	2	32	0	58	2	61	26	0	89	16	5	3	0	24	40	108	6	0	154	325	0
16:15	19	3	40	0	62	5	86	31	0	122	5	4	4	0	13	45	126	2	1	174	371	1
16:30	35	5	52	0	92	4	90	21	0	115	11	2	5	0	18	47	142	4	1	194	419	1
16:45	33	3	38	0	74	13	88	31	0	132	11	4	6	0	21	40	163	1	2	206	433	2
Total	111	13	162	0	286	24	325	109	0	458	43	15	18	0	76	172	539	13	4	728	1548	4
17:00	38	4	38	0	80	9	87	40	0	136	16	6	9	0	31	50	189	7	0	246	493	0
17:15	38	3	40	0	81	6	97	33	0	136	22	7	8	0	37	43	160	1	2	206	460	2
17:30	28	4	29	0	61	5	96	20	0	121	13	2	7	0	22	42	168	3	0	213	417	0
17:45	35	2	26	0	63	5	64	23	0	92	12	2	2	0	16	22	135	1	0	158	329	0
Total	139	13	133	0	285	25	344	116	0	485	63	17	26	0	106	157	652	12	2	823	1699	2
18:00	25	3	26	0	54	3	77	32	0	112	14	0	5	0	19	34	141	5	0	180	365	0
18:15	31	1	30	0	62	1	72	26	1	100	11	1	6	0	18	24	103	0	0	127	307	1
18:30	22	1	20	0	43	5	59	29	0	93	9	1	6	0	16	13	110	0	0	123	275	0
18:45	26	3	12	0	41	1	77	19	0	97	18	3	2	0	23	8	103	3	2	116	277	2
Total	104	8	88	0	200	10	285	106	1	402	52	5	19	0	76	79	457	8	2	546	1224	3
Grand Total	481	51	660	0	1192	114	2054	673	1	2842	249	46	81	0	376	591	2192	47	10	2840	7250	11
Apprch %	40.4%	4.3%	55.4%	0.0%		4.0%	72.3%	23.7%	0.0%		66.2%	12.2%	21.5%	0.0%		20.8%	77.2%	1.7%	0.4%			
Total %	6.6%	0.7%	9.1%	0.0%	16.4%	1.6%	28.3%	9.3%	0.0%	39.2%	3.4%	0.6%	1.1%	0.0%	5.2%	8.2%	30.2%	0.6%	0.1%	39.2%	100.0%	

AM PEAK HOUR	Post Street Southbound					White Rock Road Westbound					Post Street Northbound					White Rock Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	13	2	31	0	46	7	129	23	0	159	9	0	2	0	11	18	53	4	0	75	291
7:45	18	2	28	0	48	7	112	58	0	177	14	2	4	0	20	18	51	1	0	70	315
8:00	11	4	26	0	41	6	136	43	0	185	10	1	2	0	13	23	58	3	0	84	323
8:15	7	2	26	0	35	4	135	31	0	170	15	0	1	0	16	21	86	2	0	109	330
Total Volume	49	10	111	0	170	24	512	155	0	691	48	3	9	0	60	80	248	10	0	338	1259
% App Total	28.8%	5.9%	65.3%	0.0%		3.5%	74.1%	22.4%	0.0%		80.0%	5.0%	15.0%	0.0%		23.7%	73.4%	3.0%	0.0%		
PHF	.681	.625	.895	.000	.885	.857	.941	.668	.000	.934	.800	.375	.563	.000	.750	.870	.721	.625	.000	.775	.954

PM PEAK HOUR	Post Street Southbound					White Rock Road Westbound					Post Street Northbound					White Rock Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	35	5	52	0	92	4	90	21	0	115	11	2	5	0	18	47	142	4	1	194	419
16:45	33	3	38	0	74	13	88	31	0	132	11	4	6	0	21	40	163	1	2	206	433
17:00	38	4	38	0	80	9	87	40	0	136	16	6	9	0	31	50	189	7	0	246	493
17:15	38	3	40	0	81	6	97	33	0	136	22	7	8	0	37	43	160	1	2	206	460
Total Volume	144	15	168	0	327	32	362	125	0	519	60	19	28	0	107	180	654	13	5	852	1805
% App Total	44.0%	4.6%	51.4%	0.0%		6.2%	69.7%	24.1%	0.0%		56.1%	17.8%	26.2%	0.0%		21.1%	76.8%	1.5%	0.6%		
PHF	.947	.750	.808	.000	.889	.615	.933	.781	.000	.954	.682	.679	.778	.000	.723	.900	.865	.464	.625	.866	.915

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

ALL TRAFFIC DATA

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7907-006 Valley View Parkway & White Rock Road
Date : 11/18/2015

Unshifted Count = All Vehicles & Uturns

	Valley View Parkway Southbound					White Rock Road Westbound					Valley View Parkway Northbound					White Rock Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	0	0	2	0	2	0	24	2	0	26	17	0	0	0	17	0	11	5	0	16	61	0
6:15	2	1	0	0	3	0	25	1	0	26	18	3	1	0	22	1	15	3	0	19	70	0
6:30	0	1	0	0	1	5	38	2	0	45	28	1	2	0	31	1	30	10	0	41	118	0
6:45	0	1	1	0	2	6	38	4	0	48	33	3	10	0	46	3	28	11	0	42	138	0
Total	2	3	3	0	8	11	125	9	0	145	96	7	13	0	116	5	84	29	0	118	387	0
7:00	5	0	3	0	8	1	62	7	0	70	32	6	25	0	63	3	44	8	0	55	196	0
7:15	0	1	1	0	2	12	97	5	0	114	29	2	17	0	48	9	33	20	0	62	226	0
7:30	3	2	4	0	9	8	88	8	0	104	57	6	33	0	96	5	62	11	0	78	287	0
7:45	2	1	4	0	7	15	127	9	0	151	40	4	32	0	76	8	47	16	0	71	305	0
Total	10	4	12	0	26	36	374	29	0	439	158	18	107	0	283	25	186	55	0	266	1014	0
8:00	2	1	2	0	5	30	140	17	0	187	38	7	10	0	55	7	21	20	0	48	295	0
8:15	3	5	34	0	42	6	91	22	0	119	36	8	13	0	57	36	29	16	0	81	299	0
8:30	13	3	23	0	39	4	45	14	0	63	33	6	4	0	43	14	21	13	0	48	193	0
8:45	6	4	3	0	13	6	86	21	0	113	32	9	4	0	45	7	18	13	0	38	209	0
Total	24	13	62	0	99	46	362	74	0	482	139	30	31	0	200	64	89	62	0	215	996	0
16:00	22	11	15	0	48	3	33	12	0	48	25	4	6	0	35	8	59	32	0	99	230	0
16:15	18	10	8	0	36	8	67	17	0	92	21	6	10	0	37	6	71	29	0	106	271	0
16:30	28	11	8	0	47	8	52	11	0	71	20	6	11	0	37	11	91	32	0	134	289	0
16:45	31	9	12	0	52	5	46	15	0	66	23	10	13	0	46	15	103	33	0	151	315	0
Total	99	41	43	0	183	24	198	55	0	277	89	26	40	0	155	40	324	126	0	490	1105	0
17:00	42	9	17	0	68	13	61	21	0	95	30	6	10	0	46	11	123	48	0	182	391	0
17:15	52	13	22	0	87	11	64	23	0	98	24	7	13	0	44	9	100	37	0	146	375	0
17:30	39	17	10	0	66	7	41	10	0	58	31	6	9	0	46	8	108	56	0	172	342	0
17:45	28	9	6	0	43	7	39	25	0	71	19	8	9	0	36	11	87	33	0	131	281	0
Total	161	48	55	0	264	38	205	79	0	322	104	27	41	0	172	39	418	174	0	631	1389	0
18:00	35	16	11	0	62	5	41	16	0	62	26	5	5	0	36	7	80	40	0	127	287	0
18:15	19	11	11	0	41	10	38	25	0	73	22	5	3	0	30	13	86	31	0	130	274	0
18:30	31	11	11	0	53	5	24	7	0	36	24	9	3	0	36	4	62	33	0	99	224	0
18:45	19	10	6	0	35	6	37	10	0	53	15	2	6	0	23	9	63	38	0	110	221	0
Total	104	48	39	0	191	26	140	58	0	224	87	21	17	0	125	33	291	142	0	466	1006	0
Grand Total	400	157	214	0	771	181	1404	304	0	1889	673	129	249	0	1051	206	1392	588	0	2186	5897	0
Apprch %	51.9%	20.4%	27.8%	0.0%		9.6%	74.3%	16.1%	0.0%		64.0%	12.3%	23.7%	0.0%		9.4%	63.7%	26.9%	0.0%			
Total %	6.8%	2.7%	3.6%	0.0%	13.1%	3.1%	23.8%	5.2%	0.0%	32.0%	11.4%	2.2%	4.2%	0.0%	17.8%	3.5%	23.6%	10.0%	0.0%	37.1%	100.0%	

AM PEAK HOUR	Valley View Parkway Southbound					White Rock Road Westbound					Valley View Parkway Northbound					White Rock Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	3	2	4	0	9	8	88	8	0	104	57	6	33	0	96	5	62	11	0	78	287
7:45	2	1	4	0	7	15	127	9	0	151	40	4	32	0	76	8	47	16	0	71	305
8:00	2	1	2	0	5	30	140	17	0	187	38	7	10	0	55	7	21	20	0	48	295
8:15	3	5	34	0	42	6	91	22	0	119	36	8	13	0	57	36	29	16	0	81	299
Total Volume	10	9	44	0	63	59	446	56	0	561	171	25	88	0	284	56	159	63	0	278	1186
% App Total	15.9%	14.3%	69.8%	0.0%		10.5%	79.5%	10.0%	0.0%		60.2%	8.8%	31.0%	0.0%		20.1%	57.2%	22.7%	0.0%		
PHF	.833	.450	.324	.000	.375	.492	.796	.636	.000	.750	.750	.781	.667	.000	.740	.389	.641	.788	.000	.858	.972

PM PEAK HOUR	Valley View Parkway Southbound					White Rock Road Westbound					Valley View Parkway Northbound					White Rock Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	31	9	12	0	52	5	46	15	0	66	23	10	13	0	46	15	103	33	0	151	315
17:00	42	9	17	0	68	13	61	21	0	95	30	6	10	0	46	11	123	48	0	182	391
17:15	52	13	22	0	87	11	64	23	0	98	24	7	13	0	44	9	100	37	0	146	375
17:30	39	17	10	0	66	7	41	10	0	58	31	6	9	0	46	8	108	56	0	172	342
Total Volume	164	48	61	0	273	36	212	69	0	317	108	29	45	0	182	43	434	174	0	651	1423
% App Total	60.1%	17.6%	22.3%	0.0%		11.4%	66.9%	21.8%	0.0%		59.3%	15.9%	24.7%	0.0%		6.6%	66.7%	26.7%	0.0%		
PHF	.788	.706	.693	.000	.784	.692	.828	.750	.000	.809	.871	.725	.865	.000	.989	.717	.882	.777	.000	.894	.910

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

ALL TRAFFIC DATA

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7907-007 Silva Valley Parkway & Tong Road
Date : 11/18/2015

Unshifted Count = All Vehicles & Uturns

	Silva Valley Parkway Southbound					Tong Road Westbound					Silva Valley Parkway Northbound					Tong Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
6:00	0	24	0	0	24	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	29	0
6:15	0	31	0	0	31	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	45	0
6:30	0	50	0	0	50	0	0	0	0	0	0	26	0	0	26	0	0	0	0	0	76	0
6:45	0	52	0	0	52	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	87	0
Total	0	157	0	0	157	0	0	0	0	0	0	80	0	0	80	0	0	0	0	0	237	0
7:00	0	80	0	0	80	0	0	0	0	0	0	71	0	0	71	0	0	0	0	0	151	0
7:15	0	107	0	0	107	0	0	1	0	1	0	50	0	0	50	0	0	0	0	0	158	0
7:30	0	115	0	0	115	0	0	1	0	1	0	89	1	0	90	0	0	0	0	0	206	0
7:45	0	170	0	0	170	0	0	1	0	1	0	92	0	0	92	0	0	0	0	0	263	0
Total	0	472	0	0	472	0	0	3	0	3	0	302	1	0	303	0	0	0	0	0	778	0
8:00	0	172	0	0	172	0	0	0	0	0	0	36	3	0	39	0	0	0	0	0	211	0
8:15	0	110	0	0	110	0	0	2	0	2	0	45	0	0	45	0	0	0	0	0	157	0
8:30	0	67	0	0	67	0	0	1	0	1	0	38	0	0	38	0	0	0	0	0	106	0
8:45	0	117	0	0	117	0	0	1	0	1	0	27	0	0	27	0	0	0	0	0	145	0
Total	0	466	0	0	466	0	0	4	0	4	0	146	3	0	149	0	0	0	0	0	619	0
16:00	0	65	0	0	65	1	0	0	0	1	0	95	1	0	96	0	0	0	0	0	162	0
16:15	0	72	0	0	72	0	0	1	0	1	0	98	1	0	99	0	0	0	0	0	172	0
16:30	0	68	0	0	68	0	0	0	0	0	0	130	0	0	130	0	0	0	0	0	198	0
16:45	0	66	0	0	66	0	0	0	0	0	0	153	0	0	153	0	0	0	0	0	219	0
Total	0	271	0	0	271	1	0	1	0	2	0	476	2	0	478	0	0	0	0	0	751	0
17:00	0	95	0	0	95	0	0	0	0	0	0	168	0	0	168	0	0	0	0	0	263	0
17:15	0	96	0	0	96	0	0	0	0	0	0	177	0	0	177	0	0	0	0	0	273	0
17:30	0	59	0	0	59	0	0	0	0	0	0	156	0	0	156	0	0	0	0	0	215	0
17:45	0	74	0	0	74	0	0	0	0	0	0	131	0	0	131	0	0	0	0	0	205	0
Total	0	324	0	0	324	0	0	0	0	0	0	632	0	0	632	0	0	0	0	0	956	0
18:00	0	62	0	0	62	0	0	0	0	0	0	122	0	0	122	0	0	0	0	0	184	0
18:15	0	67	0	0	67	0	0	0	0	0	0	112	0	0	112	0	0	0	0	0	179	0
18:30	0	38	0	0	38	0	0	0	0	0	0	96	0	0	96	0	0	0	0	0	134	0
18:45	0	51	0	0	51	0	0	0	0	0	0	89	0	0	89	0	0	0	0	0	140	0
Total	0	218	0	0	218	0	0	0	0	0	0	419	0	0	419	0	0	0	0	0	637	0
Grand Total	0	1908	0	0	1908	1	0	8	0	9	0	2055	6	0	2061	0	0	0	0	0	3978	0
Apprch %	0.0%	100.0%	0.0%	0.0%		11.1%	0.0%	88.9%	0.0%		0.0%	99.7%	0.3%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.0%	48.0%	0.0%	0.0%	48.0%	0.0%	0.0%	0.2%	0.0%	0.2%	0.0%	51.7%	0.2%	0.0%	51.8%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Silva Valley Parkway Southbound					Tong Road Westbound					Silva Valley Parkway Northbound					Tong Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	107	0	0	107	0	0	1	0	1	0	50	0	0	50	0	0	0	0	0	158
7:30	0	115	0	0	115	0	0	1	0	1	0	89	1	0	90	0	0	0	0	0	206
7:45	0	170	0	0	170	0	0	1	0	1	0	92	0	0	92	0	0	0	0	0	263
8:00	0	172	0	0	172	0	0	0	0	0	0	36	3	0	39	0	0	0	0	0	211
Total Volume	0	564	0	0	564	0	0	3	0	3	0	267	4	0	271	0	0	0	0	0	838
% App Total	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	98.5%	1.5%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.820	.000	.000	.820	.000	.000	.750	.000	.750	.000	.726	.333	.000	.736	.000	.000	.000	.000	.000	.797

PM PEAK HOUR	Silva Valley Parkway Southbound					Tong Road Westbound					Silva Valley Parkway Northbound					Tong Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	66	0	0	66	0	0	0	0	0	0	153	0	0	153	0	0	0	0	0	219
17:00	0	95	0	0	95	0	0	0	0	0	0	168	0	0	168	0	0	0	0	0	263
17:15	0	96	0	0	96	0	0	0	0	0	0	177	0	0	177	0	0	0	0	0	273
17:30	0	59	0	0	59	0	0	0	0	0	0	156	0	0	156	0	0	0	0	0	215
Total Volume	0	316	0	0	316	0	0	0	0	0	0	654	0	0	654	0	0	0	0	0	970
% App Total	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.823	.000	.000	.823	.000	.000	.000	.000	.000	.000	.924	.000	.000	.924	.000	.000	.000	.000	.000	.888

Appendix B

Analysis Worksheets for Existing (2015) Conditions

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	6964	7037	6904	6855	6959	6920	7113
Vehs Exited	6945	7082	6877	6910	6970	6911	7107
Starting Vehs	253	271	259	243	230	246	251
Ending Vehs	272	226	286	188	219	255	257
Travel Distance (mi)	4106	4190	4091	4067	4123	4093	4210
Travel Time (hr)	256.8	261.6	249.1	250.5	256.1	243.8	261.6
Total Delay (hr)	127.6	130.2	120.4	122.8	126.3	115.2	129.1
Total Stops	10790	10822	10419	10356	10817	10196	11131
Fuel Used (gal)	191.5	195.1	189.4	188.7	191.5	189.1	196.5

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	6966	6972	6899	6960
Vehs Exited	6936	6981	6891	6963
Starting Vehs	242	239	240	246
Ending Vehs	272	230	248	242
Travel Distance (mi)	4120	4157	4078	4124
Travel Time (hr)	257.8	255.4	253.1	254.6
Total Delay (hr)	128.3	124.9	125.1	125.0
Total Stops	10826	10707	10640	10667
Fuel Used (gal)	193.0	192.8	190.0	191.7

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.
No data recorded this interval.

SimTraffic Simulation Summary

Existing Conditions
AM Peak

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1665	1730	1703	1689	1644	1668	1710
Vehs Exited	1685	1739	1726	1686	1634	1656	1706
Starting Vehs	253	271	259	243	230	246	251
Ending Vehs	233	262	236	246	240	258	255
Travel Distance (mi)	979	1033	1030	1001	981	983	1020
Travel Time (hr)	58.2	65.3	61.4	60.9	58.8	59.0	60.2
Total Delay (hr)	27.4	32.8	28.8	29.5	27.9	28.0	28.0
Total Stops	2509	2819	2574	2561	2555	2565	2667
Fuel Used (gal)	45.1	48.2	47.1	46.0	45.4	45.9	46.8

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1687	1700	1731	1690
Vehs Exited	1680	1688	1712	1688
Starting Vehs	242	239	240	246
Ending Vehs	249	251	259	245
Travel Distance (mi)	1022	1031	1036	1012
Travel Time (hr)	60.7	63.8	65.0	61.3
Total Delay (hr)	28.4	31.6	32.3	29.5
Total Stops	2551	2587	2727	2609
Fuel Used (gal)	46.6	47.9	48.3	46.7

SimTraffic Simulation Summary

Existing Conditions
AM Peak

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1864	1938	1871	1901	1898	1881	1904
Vehs Exited	1832	1921	1824	1856	1850	1874	1918
Starting Vehs	233	262	236	246	240	258	255
Ending Vehs	265	279	283	291	288	265	241
Travel Distance (mi)	1061	1115	1057	1077	1085	1086	1105
Travel Time (hr)	67.7	74.1	67.6	69.3	70.4	65.0	70.5
Total Delay (hr)	34.2	39.1	34.3	35.4	36.5	31.0	36.0
Total Stops	2916	3033	2838	2845	2964	2617	2943
Fuel Used (gal)	50.2	52.6	49.9	50.6	51.1	50.3	52.3

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1908	1910	1874	1894
Vehs Exited	1849	1874	1875	1867
Starting Vehs	249	251	259	245
Ending Vehs	308	287	258	275
Travel Distance (mi)	1068	1088	1065	1081
Travel Time (hr)	69.4	66.4	68.3	68.9
Total Delay (hr)	36.0	32.2	34.9	35.0
Total Stops	2910	2822	2822	2875
Fuel Used (gal)	50.8	50.5	50.1	50.8

SimTraffic Simulation Summary

Existing Conditions
AM Peak

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1729	1689	1573	1654	1742	1621	1775
Vehs Exited	1692	1721	1648	1710	1792	1680	1736
Starting Vehs	265	279	283	291	288	265	241
Ending Vehs	302	247	208	235	238	206	280
Travel Distance (mi)	1032	1021	962	994	1060	992	1056
Travel Time (hr)	65.4	62.2	56.8	61.1	66.9	59.3	67.1
Total Delay (hr)	33.1	30.1	26.5	29.8	33.5	28.1	33.7
Total Stops	2712	2513	2385	2434	2738	2544	2830
Fuel Used (gal)	48.1	47.0	44.5	46.3	48.9	46.1	49.9

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1712	1665	1657	1681
Vehs Exited	1758	1686	1694	1709
Starting Vehs	308	287	258	275
Ending Vehs	262	266	221	241
Travel Distance (mi)	1042	1017	1003	1018
Travel Time (hr)	68.7	60.8	60.3	62.9
Total Delay (hr)	36.0	28.9	28.8	30.8
Total Stops	2810	2535	2508	2597
Fuel Used (gal)	49.7	46.6	46.4	47.3

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1706	1680	1757	1611	1675	1750	1724
Vehs Exited	1736	1701	1679	1658	1694	1701	1747
Starting Vehs	302	247	208	235	238	206	280
Ending Vehs	272	226	286	188	219	255	257
Travel Distance (mi)	1034	1021	1042	995	997	1031	1029
Travel Time (hr)	65.6	60.1	63.2	59.1	60.0	60.4	63.8
Total Delay (hr)	32.9	28.2	30.8	28.0	28.4	28.1	31.4
Total Stops	2653	2457	2622	2516	2560	2470	2691
Fuel Used (gal)	48.1	47.3	48.0	45.8	46.0	46.9	47.5

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1659	1697	1637	1687
Vehs Exited	1649	1733	1610	1690
Starting Vehs	262	266	221	241
Ending Vehs	272	230	248	242
Travel Distance (mi)	988	1020	974	1013
Travel Time (hr)	58.9	64.5	59.6	61.5
Total Delay (hr)	28.0	32.3	29.2	29.7
Total Stops	2555	2763	2583	2590
Fuel Used (gal)	45.8	47.8	45.2	46.8

1: El Dorado Hills Blvd & Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.2	0.2	0.0	0.0	0.0	2.5	1.1	1.4
Total Delay (hr)	0.2	0.1	0.7	0.1	0.1	0.2	0.7	1.7	0.1	1.5	4.3	0.0
Total Del/Veh (s)	36.5	11.0	20.0	34.8	31.9	7.6	36.8	8.8	6.0	36.4	10.7	6.8
Stop Delay (hr)	0.2	0.1	0.6	0.1	0.1	0.1	0.6	0.8	0.0	1.4	1.9	0.0
Stop Del/Veh (s)	34.8	9.9	19.5	33.3	28.5	7.0	33.4	4.2	3.6	33.1	4.8	4.4

1: El Dorado Hills Blvd & Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.7
Total Delay (hr)	9.6
Total Del/Veh (s)	12.9
Stop Delay (hr)	6.0
Stop Del/Veh (s)	8.1

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.2	1.3	0.4	3.8	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	2.1	0.9	0.4	2.7	2.8	1.3	9.8	1.7	0.3	1.0	5.6	3.2
Total Del/Veh (s)	44.5	42.4	4.1	93.9	111.0	85.5	66.7	10.3	8.2	67.6	24.1	17.0
Stop Delay (hr)	1.9	0.8	0.0	2.6	2.6	1.3	8.7	0.9	0.2	0.9	3.6	1.4
Stop Del/Veh (s)	41.4	38.1	0.0	88.7	104.7	81.5	59.0	5.6	4.9	61.8	15.6	7.5

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	32.0
Total Del/Veh (s)	30.9
Stop Delay (hr)	25.0
Stop Del/Veh (s)	24.1

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.7	0.0	0.0	0.0	0.0	0.0	0.7
Denied Del/Veh (s)	2.1	0.3	0.0	0.0	0.0	0.0	0.6
Total Delay (hr)	7.6	0.1	1.9	0.3	2.6	3.2	15.7
Total Del/Veh (s)	24.3	1.0	7.3	7.5	42.5	10.2	14.5
Stop Delay (hr)	5.6	0.0	0.5	0.1	2.1	0.7	9.1
Stop Del/Veh (s)	18.1	0.0	2.0	2.5	34.8	2.3	8.4

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	4.1	0.1	0.1	3.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.1	0.1	0.0	0.6	0.3	0.8	0.7	6.0	0.1	2.7	4.7	0.3
Total Del/Veh (s)	42.2	37.4	7.4	28.7	30.5	10.0	39.2	25.8	5.7	22.5	11.3	4.1
Stop Delay (hr)	0.1	0.1	0.0	0.5	0.2	0.7	0.6	4.0	0.1	2.2	2.3	0.2
Stop Del/Veh (s)	40.3	34.2	7.4	25.8	26.2	8.8	34.7	17.2	4.5	18.0	5.6	2.1

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	16.4
Total Del/Veh (s)	16.3
Stop Delay (hr)	11.0
Stop Del/Veh (s)	10.9

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	3.6	1.0	0.3	4.5	2.9	0.3	1.6	3.7	0.1	1.5	11.3	1.3
Total Del/Veh (s)	53.1	38.5	15.7	54.3	43.4	8.5	65.2	21.4	3.7	57.4	35.5	14.3
Stop Delay (hr)	3.4	0.8	0.3	4.0	2.4	0.2	1.5	3.2	0.1	1.3	6.9	0.9
Stop Del/Veh (s)	49.9	33.9	14.7	48.3	35.7	6.5	63.0	18.6	3.8	49.5	21.9	10.4

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	32.0
Total Del/Veh (s)	33.2
Stop Delay (hr)	25.2
Stop Del/Veh (s)	26.1

12: Driveway/Post St & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	3.0	0.4	0.3	0.1	0.1	0.1	3.9	0.3	0.3
Total Delay (hr)	1.0	1.2	0.0	0.6	3.9	0.6	0.4	0.0	0.0	0.4	0.1	0.3
Total Del/Veh (s)	46.2	18.1	4.6	54.4	26.8	11.2	46.6	39.2	3.8	34.7	22.1	9.0
Stop Delay (hr)	0.9	0.9	0.0	0.6	2.6	0.4	0.4	0.0	0.0	0.3	0.1	0.2
Stop Del/Veh (s)	42.8	13.9	2.9	48.5	17.7	7.9	44.5	36.9	3.9	32.4	19.4	8.2

12: Driveway/Post St & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.5
Total Delay (hr)	8.5
Total Del/Veh (s)	23.5
Stop Delay (hr)	6.5
Stop Del/Veh (s)	18.0

Total Zone Performance

Denied Delay (hr)	1.6
Denied Del/Veh (s)	1.1
Total Delay (hr)	114.4
Total Del/Veh (s)	235.7
Stop Delay (hr)	82.7
Stop Del/Veh (s)	170.4

13: Valley View Pkwy/Vine St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.6	0.6	0.5	3.6	0.7	0.6	4.1	0.2	0.2
Total Delay (hr)	0.5	1.2	0.3	0.7	3.3	0.3	1.2	0.1	0.2	0.1	0.1	0.2
Total Del/Veh (s)	34.0	21.4	16.4	38.1	25.0	17.2	22.1	19.3	8.3	30.5	33.3	11.7
Stop Delay (hr)	0.5	0.8	0.2	0.6	1.9	0.2	1.0	0.1	0.2	0.1	0.1	0.2
Stop Del/Veh (s)	28.6	14.6	12.7	30.9	14.2	11.0	19.0	15.2	6.4	28.1	29.9	10.8
Vehicles Entered	58	207	63	66	464	65	189	27	99	10	10	51
Vehicles Exited	58	207	63	66	465	66	189	27	99	10	10	51
Hourly Exit Rate	58	207	63	66	465	66	189	27	99	10	10	51
Input Volume	58	202	66	64	483	61	186	27	96	11	10	49
% of Volume	100	102	96	103	96	109	102	99	103	91	100	105

13: Valley View Pkwy/Vine St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	1.0
Total Delay (hr)	8.3
Total Del/Veh (s)	22.5
Stop Delay (hr)	5.8
Stop Del/Veh (s)	15.8
Vehicles Entered	1309
Vehicles Exited	1311
Hourly Exit Rate	1311
Input Volume	1312
% of Volume	100

Total Zone Performance

Denied Delay (hr)	93.1
Denied Del/Veh (s)	41.1
Total Delay (hr)	264.7
Total Del/Veh (s)	1569.7
Stop Delay (hr)	190.8
Stop Del/Veh (s)	1131.7
Vehicles Entered	7943
Vehicles Exited	194
Hourly Exit Rate	194
Input Volume	26989
% of Volume	1

Intersection: 1: El Dorado Hills Blvd & Saratoga Way

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	12	53	118	33	80	97	106	124	119	124	321	329
Average Queue (ft)	1	17	57	5	32	38	33	42	34	69	103	145
95th Queue (ft)	7	42	102	19	64	82	79	96	88	129	244	303
Link Distance (ft)		299		482	482		774	774	774		309	309
Upstream Blk Time (%)											1	1
Queuing Penalty (veh)											0	0
Storage Bay Dist (ft)	150		200			250				100		
Storage Blk Time (%)										4	4	
Queuing Penalty (veh)										28	6	

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	L	LT	TR	L	L	T	T	TR	L	T
Maximum Queue (ft)	166	149	174	276	175	368	377	144	161	187	180	287
Average Queue (ft)	84	77	68	153	109	211	217	50	65	88	50	154
95th Queue (ft)	141	133	167	244	196	351	360	111	131	158	125	247
Link Distance (ft)	1228	1228		621		646	646	646	646	646		774
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)			150		150						200	
Storage Blk Time (%)			0	14	3							2
Queuing Penalty (veh)			0	21	4							1

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	284	372	225
Average Queue (ft)	106	123	144
95th Queue (ft)	203	278	244
Link Distance (ft)	774	774	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			200
Storage Blk Time (%)		0	4
Queuing Penalty (veh)		0	13

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	R	L	T	T	T	T
Maximum Queue (ft)	357	308	134	184	226	146	262	217	204	203	58
Average Queue (ft)	226	193	20	43	54	25	151	35	28	27	17
95th Queue (ft)	321	289	78	115	151	82	234	121	111	118	47
Link Distance (ft)	1211		572	572	572			646	646	646	646
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)		450				275	575				
Storage Blk Time (%)					0						
Queuing Penalty (veh)					0						

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	9	49	36	33	102	153	112	55	68	233	248	291
Average Queue (ft)	0	9	8	5	41	60	41	16	28	90	109	138
95th Queue (ft)	3	34	28	23	82	116	81	42	58	182	204	250
Link Distance (ft)			778	778		526	526			839	839	839
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					0	2				0		
Queuing Penalty (veh)					1	2				0		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	70	163	176	221	234	230	108
Average Queue (ft)	22	77	101	102	128	100	41
95th Queue (ft)	53	133	151	184	213	190	80
Link Distance (ft)	839			572	572	572	572
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	152	195	94	134	176	183	191	220	102	145	158	144
Average Queue (ft)	72	110	29	61	99	110	71	97	43	59	84	66
95th Queue (ft)	141	172	72	112	170	176	157	186	84	124	140	126
Link Distance (ft)			346	346				315	315		278	278
Upstream Blk Time (%)								0				
Queuing Penalty (veh)								1				
Storage Bay Dist (ft)	325	325			175	175	175			270		
Storage Blk Time (%)					0	1	1	0				
Queuing Penalty (veh)					0	1	1	2				

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	108	97	50	63	249	402	428	367	250
Average Queue (ft)	45	11	23	15	45	215	234	50	62
95th Queue (ft)	97	54	50	46	166	367	385	222	166
Link Distance (ft)	278	278				839	839	839	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			25	225	225				250
Storage Blk Time (%)		2	1			8		1	0
Queuing Penalty (veh)		3	2			8		2	0

Intersection: 12: Driveway/Post St & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	102	127	143	33	145	333	243	78	37	70	109
Average Queue (ft)	55	39	64	5	44	180	95	26	12	26	40
95th Queue (ft)	97	97	118	24	111	294	182	63	30	59	83
Link Distance (ft)		315	315			1064	1064	216	216		408
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	5	1	1		0	20				7	7
Queuing Penalty (veh)	6	1	0		0	9				9	3

Zone Summary

Zone wide Queuing Penalty: 123

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	5	33	676	979	118
Future Volume (veh/h)	35	5	33	676	979	118
Number	3	18	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	50	7	41	835	1165	140
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.70	0.70	0.81	0.81	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	109	97	84	2260	1500	180
Arrive On Green	0.06	0.06	0.05	0.64	0.47	0.47
Sat Flow, veh/h	1774	1583	1774	3632	3276	382
Grp Volume(v), veh/h	50	7	41	835	646	659
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1795
Q Serve(g_s), s	0.9	0.1	0.8	3.7	10.1	10.2
Cycle Q Clear(g_c), s	0.9	0.1	0.8	3.7	10.1	10.2
Prop In Lane	1.00	1.00	1.00			0.21
Lane Grp Cap(c), veh/h	109	97	84	2260	834	846
V/C Ratio(X)	0.46	0.07	0.49	0.37	0.78	0.78
Avail Cap(c_a), veh/h	1330	1187	904	4776	2388	2423
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	15.1	14.7	15.5	2.9	7.3	7.4
Incr Delay (d2), s/veh	3.0	0.3	1.6	0.1	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	0.5	0.1	0.4	1.8	5.0	5.1
LnGrp Delay(d),s/veh	18.1	15.1	17.1	3.0	7.9	8.0
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	57			876	1305	
Approach Delay, s/veh	17.7			3.7	7.9	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		27.3			5.6	21.7		6.1
Change Period (Y+Rc), s		6.0			4.0	6.0		4.0
Max Green Setting (Gmax), s		45.0			17.0	45.0		25.0
Max Q Clear Time (g_c+I1), s		5.7			2.8	12.2		2.9
Green Ext Time (p_c), s		10.2			0.0	3.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	17	2	16	56	299	25	332	4	208	386	407
Future Volume (veh/h)	80	17	2	16	56	299	25	332	4	208	386	407
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	114	24	3	22	77	410	28	373	4	224	415	438
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.70	0.70	0.70	0.73	0.73	0.73	0.89	0.89	0.89	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	147	18	77	271	300	57	765	8	269	589	527
Arrive On Green	0.09	0.09	0.09	0.19	0.19	0.19	0.03	0.21	0.21	0.15	0.33	0.33
Sat Flow, veh/h	1774	1624	203	409	1433	1583	1774	3587	38	1774	1770	1583
Grp Volume(v), veh/h	114	0	27	99	0	410	28	184	193	224	415	438
Grp Sat Flow(s),veh/h/ln	1774	0	1827	1842	0	1583	1774	1770	1856	1774	1770	1583
Q Serve(g_s), s	3.3	0.0	0.7	2.4	0.0	10.0	0.8	4.8	4.8	6.5	10.8	13.5
Cycle Q Clear(g_c), s	3.3	0.0	0.7	2.4	0.0	10.0	0.8	4.8	4.8	6.5	10.8	13.5
Prop In Lane	1.00		0.11	0.22		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	160	0	165	349	0	300	57	378	396	269	589	527
V/C Ratio(X)	0.71	0.00	0.16	0.28	0.00	1.37	0.49	0.49	0.49	0.83	0.70	0.83
Avail Cap(c_a), veh/h	352	0	363	349	0	300	269	660	692	269	660	590
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	22.2	18.4	0.0	21.4	25.2	18.3	18.3	21.8	15.4	16.3
Incr Delay (d2), s/veh	5.7	0.0	0.5	0.4	0.0	185.8	6.5	1.0	0.9	19.7	3.0	9.0
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	1.9	0.0	0.4	1.3	0.0	19.8	0.5	2.5	2.6	4.6	5.7	7.2
LnGrp Delay(d),s/veh	29.1	0.0	22.7	18.8	0.0	207.2	31.7	19.2	19.2	41.5	18.4	25.2
LnGrp LOS	C		C	B		F	C	B	B	D	B	C
Approach Vol, veh/h		141			509			405			1077	
Approach Delay, s/veh		27.8			170.6			20.1			26.0	
Approach LOS		C			F			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	12.0	16.6		15.0	5.7	22.9		9.3
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	8.0	19.7		10.0	8.0	19.7		10.5
Max Q Clear Time (g_c+I1), s	12.5	6.8		12.0	2.8	15.5		5.3
Green Ext Time (p_c), s	0.0	1.7		0.0	0.0	2.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	59.5
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	359	4	12	392	58	10	0	29	79	1	45
Future Volume (veh/h)	8	359	4	12	392	58	10	0	29	79	1	45
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	9	386	4	14	445	66	11	0	33	104	1	59
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.89	0.89	0.89	0.76	0.76	0.76
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	1241	13	6	1242	556	10	0	29	148	2	131
Arrive On Green	0.00	0.35	0.29	0.00	0.35	0.35	0.02	0.00	0.04	0.08	0.08	0.10
Sat Flow, veh/h	1774	3589	37	1774	3539	1583	407	0	1220	1774	26	1561
Grp Volume(v), veh/h	9	190	200	14	445	66	44	0	0	104	0	60
Grp Sat Flow(s),veh/h/ln	1774	1770	1856	1774	1770	1583	1627	0	0	1774	0	1587
Q Serve(g_s), s	0.1	2.3	2.3	0.1	2.7	0.8	0.7	0.0	0.0	1.7	0.0	1.0
Cycle Q Clear(g_c), s	0.1	2.3	2.3	0.1	2.7	0.8	0.7	0.0	0.0	1.7	0.0	1.0
Prop In Lane	1.00		0.02	1.00		1.00	0.25		0.75	1.00		0.98
Lane Grp Cap(c), veh/h	6	612	642	6	1242	556	39	0	0	148	0	133
V/C Ratio(X)	1.48	0.31	0.31	2.30	0.36	0.12	1.13	0.00	0.00	0.70	0.00	0.45
Avail Cap(c_a), veh/h	487	2185	2292	487	4371	1955	446	0	0	669	0	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	7.0	7.0	14.6	7.0	6.4	14.0	0.0	0.0	13.0	0.0	12.5
Incr Delay (d2), s/veh	273.2	0.3	0.3	624.5	0.2	0.1	80.8	0.0	0.0	2.2	0.0	0.9
Initial Q Delay(d3),s/veh	82.6	0.0	0.0	22.9	0.0	0.0	4.6	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.2	1.2	1.8	1.3	0.4	1.2	0.0	0.0	0.9	0.0	0.5
LnGrp Delay(d),s/veh	370.3	7.3	7.3	661.9	7.2	6.5	99.5	0.0	0.0	15.2	0.0	13.4
LnGrp LOS	F	A	A	F	A	A	F			B		B
Approach Vol, veh/h		399			525			44			164	
Approach Delay, s/veh		15.5			24.6			99.5			14.6	
Approach LOS		B			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.8	14.2		4.7	3.9	14.1		6.4
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	8.5	34.3		8.5	8.5	34.3		11.5
Max Q Clear Time (g_c+I1), s	2.1	4.7		2.7	2.1	4.3		3.7
Green Ext Time (p_c), s	0.0	3.8		0.0	0.0	2.7		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	22.8
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	303	115	300	337	0	53	0	79	0	0	0
Future Volume (veh/h)	0	303	115	300	337	0	53	0	79	0	0	0
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	337	128	361	406	0	73	0	108	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.73	0.73	0.73	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	651	243	442	2179	0	166	0	286	156	57	0
Arrive On Green	0.00	0.26	0.24	0.25	0.62	0.00	0.09	0.00	0.14	0.00	0.00	0.00
Sat Flow, veh/h	975	2524	942	1774	3632	0	1774	0	1583	1280	1863	0
Grp Volume(v), veh/h	0	235	230	361	406	0	73	0	108	0	0	0
Grp Sat Flow(s),veh/h/ln	975	1770	1696	1774	1770	0	1774	0	1583	1280	1863	0
Q Serve(g_s), s	0.0	5.2	5.4	8.8	2.3	0.0	1.8	0.0	2.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.2	5.4	8.8	2.3	0.0	1.8	0.0	2.9	0.0	0.0	0.0
Prop In Lane	1.00		0.56	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	156	456	438	442	2179	0	166	0	286	156	57	0
V/C Ratio(X)	0.00	0.51	0.53	0.82	0.19	0.00	0.44	0.00	0.38	0.00	0.00	0.00
Avail Cap(c_a), veh/h	764	1559	1495	1771	7036	0	516	0	756	656	784	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	14.6	14.8	16.3	3.8	0.0	19.7	0.0	17.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.2	1.4	0.1	0.0	0.7	0.0	0.3	0.0	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	0.0	2.7	2.7	4.5	1.1	0.0	0.9	0.0	1.3	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	15.7	16.1	17.7	3.9	0.0	20.4	0.0	17.8	0.0	0.0	0.0
LnGrp LOS		B	B	B	A		C		B			
Approach Vol, veh/h		465			767			181			0	
Approach Delay, s/veh		15.9			10.4			18.9			0.0	
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	6.5	17.3		12.3		33.8	6.9	5.4
Change Period (Y+Rc), s	5.6	6.0		6.0		6.0	4.6	* 6
Max Green Setting (Gmax), s	45.4	40.0		20.0		91.0	11.4	* 17
Max Q Clear Time (g_c+I1), s	10.8	7.4		4.9		4.3	3.8	0.0
Green Ext Time (p_c), s	0.2	3.9		0.2		3.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	267	4	0	564
Future Vol, veh/h	0	3	267	4	0	564
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	74	74	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	361	5	0	688

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	183	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	828	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	828	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	828	-
HCM Lane V/C Ratio	-	-	0.005	-
HCM Control Delay (s)	-	-	9.4	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	394	0	102	58	331	0	0	264	431
Future Volume (veh/h)	0	0	0	394	0	102	58	331	0	0	264	431
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	1863	1863
Adj Flow Rate, veh/h				453	0	117	75	430	0	0	284	463
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	2	2
Cap, veh/h				513	0	229	107	1505	0	0	1094	489
Arrive On Green				0.14	0.00	0.14	0.06	0.43	0.00	0.00	0.31	0.31
Sat Flow, veh/h				3548	0	1583	1774	3632	0	0	3632	1583
Grp Volume(v), veh/h				453	0	117	75	430	0	0	284	463
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	1583
Q Serve(g_s), s				15.3	0.0	8.3	5.1	9.7	0.0	0.0	7.4	34.8
Cycle Q Clear(g_c), s				15.3	0.0	8.3	5.1	9.7	0.0	0.0	7.4	34.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				513	0	229	107	1505	0	0	1094	489
V/C Ratio(X)				0.88	0.00	0.51	0.70	0.29	0.00	0.00	0.26	0.95
Avail Cap(c_a), veh/h				872	0	389	364	1505	0	0	1450	649
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	0.99	0.99	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				51.2	0.0	48.2	56.2	22.9	0.0	0.0	31.7	41.2
Incr Delay (d2), s/veh				2.9	0.0	0.7	3.0	0.0	0.0	0.0	0.6	29.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.7	0.0	3.7	2.6	4.7	0.0	0.0	3.7	19.2
LnGrp Delay(d),s/veh				54.0	0.0	48.8	59.3	23.0	0.0	0.0	32.2	70.4
LnGrp LOS				D		D	E	C			C	E
Approach Vol, veh/h					570			505			747	
Approach Delay, s/veh					53.0			28.4			55.9	
Approach LOS					D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		58.7			14.2	44.5		23.4
Change Period (Y+Rc), s		6.8			6.8	* 6.8		5.8
Max Green Setting (Gmax), s		50.0			25.0	* 50		30.0
Max Q Clear Time (g_c+I1), s		11.7			7.1	36.8		17.3
Green Ext Time (p_c), s		1.1			0.1	0.9		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	47.4
HCM 2010 LOS	D

Notes



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	79	19	119	308	547	119
Future Volume (veh/h)	79	19	119	308	547	119
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	1863
Adj Flow Rate, veh/h	89	21	129	335	576	0
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, %	2	2	2	2	2	2
Cap, veh/h	220	101	223	1072	646	289
Arrive On Green	0.06	0.06	0.06	0.30	0.36	0.00
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583
Grp Volume(v), veh/h	89	21	129	335	576	0
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583
Q Serve(g_s), s	3.0	1.5	4.4	8.9	18.7	0.0
Cycle Q Clear(g_c), s	3.0	1.5	4.4	8.9	18.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	220	101	223	1072	646	289
V/C Ratio(X)	0.40	0.21	0.58	0.31	0.89	0.00
Avail Cap(c_a), veh/h	705	324	846	1450	1450	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.90	0.00
Uniform Delay (d), s/veh	54.9	54.2	55.4	32.7	37.6	0.0
Incr Delay (d2), s/veh	0.4	0.4	0.9	0.1	15.7	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	1.5	1.4	2.1	4.3	10.5	0.0
LnGrp Delay(d),s/veh	55.3	54.5	56.3	32.8	53.3	0.0
LnGrp LOS	E	D	E	C	D	
Approach Vol, veh/h	110			464	576	
Approach Delay, s/veh	55.2			39.3	53.3	
Approach LOS	E			D	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		43.8		13.6	14.7	29.1		
Change Period (Y+Rc), s		6.8		5.8	6.8	* 6.8		
Max Green Setting (Gmax), s		50.0		25.0	30.0	* 50		
Max Q Clear Time (g_c+I1), s		10.9		5.0	6.4	20.7		
Green Ext Time (p_c), s		0.9		0.2	0.2	1.6		

Intersection Summary	
HCM 2010 Ctrl Delay	47.9
HCM 2010 LOS	D

Notes

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	8682	8668	8309	8482	8388	8378	8298
Vehs Exited	8646	8596	8229	8427	8377	8323	8291
Starting Vehs	360	346	340	340	325	353	316
Ending Vehs	396	418	420	395	336	408	323
Travel Distance (mi)	4783	4756	4570	4685	4659	4643	4597
Travel Time (hr)	414.1	394.7	383.8	364.7	379.4	385.0	364.7
Total Delay (hr)	261.0	242.6	237.9	215.2	230.6	236.7	217.4
Total Stops	16147	16608	15327	15364	15898	15807	15149
Fuel Used (gal)	255.6	250.1	242.3	241.1	244.2	244.7	239.4

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	8544	8488	8524	8475
Vehs Exited	8441	8440	8478	8425
Starting Vehs	316	324	334	329
Ending Vehs	419	372	380	382
Travel Distance (mi)	4693	4683	4659	4673
Travel Time (hr)	367.8	373.6	372.7	380.1
Total Delay (hr)	218.3	223.5	223.5	230.7
Total Stops	15788	15653	15583	15734
Fuel Used (gal)	242.6	244.2	242.1	244.6

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.
No data recorded this interval.

SimTraffic Simulation Summary

Existing Conditions
PM Peak

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2188	2109	2062	2051	2102	2044	2028
Vehs Exited	2185	2059	2092	2042	2067	2036	1998
Starting Vehs	360	346	340	340	325	353	316
Ending Vehs	363	396	310	349	360	361	346
Travel Distance (mi)	1223	1140	1153	1156	1158	1146	1125
Travel Time (hr)	92.8	89.3	90.7	84.0	87.6	85.0	83.3
Total Delay (hr)	53.8	52.7	54.0	47.2	50.6	48.5	47.4
Total Stops	4030	3901	3893	3682	3675	3750	3717
Fuel Used (gal)	62.2	58.8	60.2	58.3	59.0	57.8	57.6

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2120	2070	2076	2082
Vehs Exited	2040	2040	2060	2059
Starting Vehs	316	324	334	329
Ending Vehs	396	354	350	354
Travel Distance (mi)	1142	1155	1178	1158
Travel Time (hr)	86.2	84.1	92.7	87.6
Total Delay (hr)	49.7	47.3	55.2	50.6
Total Stops	3797	3653	3876	3799
Fuel Used (gal)	58.7	58.5	60.4	59.2

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2251	2348	2201	2248	2278	2238	2212
Vehs Exited	2250	2296	2081	2211	2205	2214	2179
Starting Vehs	363	396	310	349	360	361	346
Ending Vehs	364	448	430	386	433	385	379
Travel Distance (mi)	1206	1259	1155	1195	1198	1214	1200
Travel Time (hr)	95.1	108.9	100.7	90.7	105.0	102.3	96.9
Total Delay (hr)	56.5	68.7	64.0	52.4	66.6	63.4	58.4
Total Stops	4010	4535	3999	3928	4328	4190	4107
Fuel Used (gal)	62.5	67.3	61.8	60.8	64.5	64.4	62.7

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2330	2220	2312	2265
Vehs Exited	2357	2196	2263	2223
Starting Vehs	396	354	350	354
Ending Vehs	369	378	399	389
Travel Distance (mi)	1272	1188	1193	1208
Travel Time (hr)	106.2	95.9	97.3	99.9
Total Delay (hr)	65.8	57.8	58.8	61.2
Total Stops	4431	4056	4037	4161
Fuel Used (gal)	67.0	62.3	62.4	63.6

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2142	2078	1997	2121	2058	2060	2010
Vehs Exited	2071	2182	2090	2187	2132	2105	2060
Starting Vehs	364	448	430	386	433	385	379
Ending Vehs	435	344	337	320	359	340	329
Travel Distance (mi)	1185	1185	1126	1203	1182	1157	1133
Travel Time (hr)	111.0	101.7	100.5	98.4	99.9	97.5	92.0
Total Delay (hr)	73.1	63.8	64.2	59.9	62.4	60.6	55.7
Total Stops	4051	4065	3796	4013	4142	3896	3614
Fuel Used (gal)	65.3	63.1	60.6	63.2	62.7	61.2	59.3

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2012	2117	2044	2061
Vehs Exited	2062	2073	2109	2101
Starting Vehs	369	378	399	389
Ending Vehs	319	422	334	352
Travel Distance (mi)	1134	1161	1145	1161
Travel Time (hr)	90.3	92.0	90.3	97.4
Total Delay (hr)	54.1	54.6	53.5	60.2
Total Stops	3837	3810	3847	3907
Fuel Used (gal)	59.1	59.9	59.5	61.4

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2101	2133	2049	2062	1950	2036	2048
Vehs Exited	2140	2059	1966	1987	1973	1968	2054
Starting Vehs	435	344	337	320	359	340	329
Ending Vehs	396	418	420	395	336	408	323
Travel Distance (mi)	1169	1172	1135	1131	1121	1126	1140
Travel Time (hr)	115.1	94.8	91.9	91.6	86.8	100.2	92.4
Total Delay (hr)	77.7	57.4	55.7	55.7	51.1	64.2	55.9
Total Stops	4056	4107	3639	3741	3753	3971	3711
Fuel Used (gal)	65.5	60.9	59.7	58.8	58.0	61.4	59.8

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2082	2081	2092	2064
Vehs Exited	1982	2131	2046	2029
Starting Vehs	319	422	334	352
Ending Vehs	419	372	380	382
Travel Distance (mi)	1145	1180	1143	1146
Travel Time (hr)	85.1	101.6	92.5	95.2
Total Delay (hr)	48.7	63.8	55.9	58.6
Total Stops	3723	4134	3823	3862
Fuel Used (gal)	57.8	63.4	59.8	60.5

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.3	0.3	0.0	0.0	0.0	4.3	2.5	1.7
Total Delay (hr)	0.4	0.3	0.3	0.5	0.2	1.2	1.7	7.0	0.4	2.4	4.3	0.1
Total Del/Veh (s)	41.1	37.4	9.5	34.8	38.3	16.4	49.4	19.4	15.1	50.1	19.9	8.6
Stop Delay (hr)	0.4	0.2	0.2	0.5	0.2	1.1	1.5	3.4	0.2	2.2	3.0	0.1
Stop Del/Veh (s)	39.2	33.3	8.8	32.6	33.1	14.2	42.4	9.5	8.0	45.8	13.8	7.2

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	0.8
Denied Del/Veh (s)	0.9
Total Delay (hr)	18.9
Total Del/Veh (s)	22.6
Stop Delay (hr)	13.0
Stop Del/Veh (s)	15.6

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	3.6	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.2	0.7	0.1	2.3	1.3	1.3	12.3	7.4	1.7	1.6	20.5	1.5
Total Del/Veh (s)	32.8	33.3	3.2	49.6	58.0	64.9	44.6	20.4	19.5	185.1	125.7	16.6
Stop Delay (hr)	1.1	0.6	0.0	2.1	1.2	1.2	9.7	4.0	1.0	1.5	18.4	1.0
Stop Del/Veh (s)	30.2	29.5	0.0	45.1	52.3	61.7	35.1	11.1	11.7	175.0	112.9	10.8

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.2
Total Delay (hr)	51.9
Total Del/Veh (s)	44.2
Stop Delay (hr)	41.8
Stop Del/Veh (s)	35.7

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.3	0.1	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	1.3	0.6	0.0	0.0	0.0	0.0	0.3
Total Delay (hr)	3.9	0.4	5.9	1.6	2.8	3.6	18.2
Total Del/Veh (s)	16.9	2.0	11.4	11.8	55.9	18.3	13.7
Stop Delay (hr)	2.7	0.0	1.5	0.4	2.4	1.3	8.4
Stop Del/Veh (s)	11.9	0.0	2.9	2.9	47.4	6.8	6.3

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.5	0.2	0.2	3.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	5.8	0.6	0.3	1.0	0.1	7.1	0.0	26.8	0.4	10.0	4.9	0.0
Total Del/Veh (s)	69.3	59.0	17.2	60.8	58.9	41.4	141.7	65.2	9.4	64.4	18.3	2.8
Stop Delay (hr)	5.4	0.5	0.3	0.9	0.1	6.7	0.0	19.4	0.3	8.7	3.2	0.0
Stop Del/Veh (s)	64.3	55.7	16.1	56.1	54.6	39.6	127.4	47.3	7.5	55.9	12.1	1.6

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.3
Total Delay (hr)	56.9
Total Del/Veh (s)	48.3
Stop Delay (hr)	45.7
Stop Del/Veh (s)	38.7

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	4.6	3.6	0.7	2.9	2.3	0.6	1.2	9.8	1.3	3.8	5.5	0.6
Total Del/Veh (s)	48.7	36.8	26.9	52.2	43.0	12.1	57.4	32.6	13.3	55.4	31.8	10.0
Stop Delay (hr)	4.3	3.0	0.6	2.7	1.9	0.5	1.1	8.4	1.3	3.4	3.8	0.5
Stop Del/Veh (s)	44.9	30.8	24.2	47.5	36.8	10.2	54.8	28.0	12.6	48.7	21.8	7.6

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	37.0
Total Del/Veh (s)	33.4
Stop Delay (hr)	31.4
Stop Del/Veh (s)	28.4

12: Driveway/Post St & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.3	3.7
Denied Del/Veh (s)	0.4	0.1	0.3	3.2	0.4	0.3	0.1	0.1	0.1	73.9	77.5	71.2
Total Delay (hr)	3.6	4.4	0.0	0.8	2.8	0.8	0.7	0.1	0.1	7.0	0.4	4.1
Total Del/Veh (s)	63.0	21.4	8.5	61.0	28.2	15.1	47.3	29.0	9.1	132.1	99.9	79.8
Stop Delay (hr)	3.3	3.0	0.0	0.7	2.0	0.6	0.7	0.1	0.1	6.6	0.4	3.7
Stop Del/Veh (s)	57.4	14.7	4.4	56.3	20.5	11.4	45.0	26.4	8.9	124.8	91.2	73.7

12: Driveway/Post St & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	8.1
Denied Del/Veh (s)	14.3
Total Delay (hr)	24.7
Total Del/Veh (s)	43.7
Stop Delay (hr)	21.2
Stop Del/Veh (s)	37.5

Total Zone Performance

Denied Delay (hr)	9.9
Denied Del/Veh (s)	6.2
Total Delay (hr)	207.7
Total Del/Veh (s)	600.2
Stop Delay (hr)	161.5
Stop Del/Veh (s)	466.7

13: Valley View Pkwy/Vine St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.5	0.3	0.3	3.9	0.4	0.4	3.7	0.7	0.6
Total Delay (hr)	0.4	2.7	0.7	0.4	1.4	0.3	0.9	0.2	0.1	1.1	0.4	0.2
Total Del/Veh (s)	41.9	18.5	17.2	41.2	23.2	12.8	29.4	28.0	10.9	25.2	25.3	10.6
Stop Delay (hr)	0.3	1.5	0.4	0.4	0.9	0.2	0.8	0.2	0.1	1.0	0.3	0.2
Stop Del/Veh (s)	35.0	10.0	10.9	36.7	15.8	9.6	26.7	24.5	9.7	22.2	21.5	9.2
Vehicles Entered	32	532	146	36	212	72	106	29	44	161	50	60
Vehicles Exited	32	533	147	36	212	72	106	29	44	161	50	60
Hourly Exit Rate	32	533	147	36	212	72	106	29	44	161	50	60
Input Volume	43	608	174	36	212	69	108	29	45	164	48	61
% of Volume	75	88	84	101	100	104	98	100	98	98	105	99

13: Valley View Pkwy/Vine St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.9
Total Delay (hr)	8.8
Total Del/Veh (s)	21.2
Stop Delay (hr)	6.3
Stop Del/Veh (s)	15.2
Vehicles Entered	1480
Vehicles Exited	1482
Hourly Exit Rate	1482
Input Volume	1597
% of Volume	93

Total Zone Performance

Denied Delay (hr)	86.8
Denied Del/Veh (s)	32.7
Total Delay (hr)	563.9
Total Del/Veh (s)	1477.5
Stop Delay (hr)	490.5
Stop Del/Veh (s)	1285.3
Vehicles Entered	9190
Vehicles Exited	379
Hourly Exit Rate	379
Input Volume	30731
% of Volume	1

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	46	100	80	90	210	207	272	302	306	124	330	269
Average Queue (ft)	5	41	38	26	103	81	118	139	134	91	156	112
95th Queue (ft)	25	80	69	64	181	161	240	272	273	150	320	244
Link Distance (ft)		324		482	482		778	778	778		309	309
Upstream Blk Time (%)											5	1
Queuing Penalty (veh)											0	0
Storage Bay Dist (ft)	150		200			250				100		
Storage Blk Time (%)		0				0	0			12	13	
Queuing Penalty (veh)		0				0	0			45	22	

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	L	LT	TR	L	L	T	T	TR	L	T
Maximum Queue (ft)	124	144	143	172	233	455	458	291	356	389	225	740
Average Queue (ft)	61	62	65	83	114	290	301	156	193	221	88	480
95th Queue (ft)	107	115	118	160	190	419	429	255	305	350	252	839
Link Distance (ft)	1293	1293			621	641	641	641	641	641		778
Upstream Blk Time (%)												6
Queuing Penalty (veh)												18
Storage Bay Dist (ft)			150	150							200	
Storage Blk Time (%)			0	0	4						0	65
Queuing Penalty (veh)			0	1	9						0	20

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	707	488	215
Average Queue (ft)	379	157	91
95th Queue (ft)	779	424	176
Link Distance (ft)	778	778	
Upstream Blk Time (%)	0	0	
Queuing Penalty (veh)	1	0	
Storage Bay Dist (ft)			200
Storage Blk Time (%)		0	1
Queuing Penalty (veh)		0	1

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	R	L	T	T	T	T
Maximum Queue (ft)	298	261	312	362	474	299	168	281	140	101	62
Average Queue (ft)	157	99	81	105	145	89	90	127	56	37	16
95th Queue (ft)	259	216	222	263	341	231	144	246	118	81	48
Link Distance (ft)	1211		572	572	572			641	641	641	641
Upstream Blk Time (%)			0	0	0						
Queuing Penalty (veh)			0	0	1						
Storage Bay Dist (ft)		450				275	575				
Storage Blk Time (%)					1	0					
Queuing Penalty (veh)					5	1					

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	T	T	T	R
Maximum Queue (ft)	279	318	115	124	125	312	312	132	638	701	665	158
Average Queue (ft)	146	208	21	43	76	191	190	6	335	407	461	40
95th Queue (ft)	273	302	77	92	154	293	291	60	549	621	658	110
Link Distance (ft)			778	778		526	526		839	839	839	839
Upstream Blk Time (%)										0		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	350	350			100			225				
Storage Blk Time (%)		0			1	39			21			
Queuing Penalty (veh)		0			4	23			0			

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R
Maximum Queue (ft)	332	344	408	273	212	32
Average Queue (ft)	218	232	178	130	101	5
95th Queue (ft)	317	323	335	224	184	21
Link Distance (ft)			572	572	572	572
Upstream Blk Time (%)			0			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)	325	325				
Storage Blk Time (%)	0	1	0			
Queuing Penalty (veh)	1	3	3			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	223	253	247	250	135	142	143	154	169	150	269	270
Average Queue (ft)	106	144	117	139	62	79	45	75	65	46	164	157
95th Queue (ft)	193	224	202	220	120	126	105	127	124	110	242	238
Link Distance (ft)			346	346				315	315		278	278
Upstream Blk Time (%)		0	0	0							0	0
Queuing Penalty (veh)		0	0	0							0	0
Storage Bay Dist (ft)	325	325			175	175	175			270		
Storage Blk Time (%)		0	0		0	0	0	0			0	
Queuing Penalty (veh)		0	0		0	0	0	0			0	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B25	SB	SB	SB	SB	SB	SB	
Directions Served	T	T	R	T	T	L	L	T	T	T	R	
Maximum Queue (ft)	241	227	59	7	2	152	207	282	305	94	128	
Average Queue (ft)	141	96	47	0	0	68	73	111	131	9	27	
95th Queue (ft)	215	201	58	4	3	129	154	243	264	70	88	
Link Distance (ft)	278	278		247	501			839	839	839		
Upstream Blk Time (%)	0	0										
Queuing Penalty (veh)	0	0										
Storage Bay Dist (ft)			25			225	225				250	
Storage Blk Time (%)		11	23				0	1		0		
Queuing Penalty (veh)		38	61				0	3		0		

Intersection: 12: Driveway/Post St & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR	
Maximum Queue (ft)	104	336	336	123	126	250	246	92	61	75	441	
Average Queue (ft)	98	207	188	14	42	110	115	38	19	72	342	
95th Queue (ft)	118	335	309	66	94	195	209	79	46	81	538	
Link Distance (ft)		315	315			585	585	216	216		408	
Upstream Blk Time (%)		1	1								42	
Queuing Penalty (veh)		6	3								0	
Storage Bay Dist (ft)	80			110	120					50		
Storage Blk Time (%)	42	10	17	0	0	8				76	6	
Queuing Penalty (veh)	155	21	4	0	0	4				150	13	

Zone Summary

Zone wide Queuing Penalty: 615

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	172	21	3	1056	595	84
Future Volume (veh/h)	172	21	3	1056	595	84
Number	3	18	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	232	28	4	1304	620	88
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.74	0.74	0.81	0.81	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	309	276	10	2186	1647	233
Arrive On Green	0.17	0.17	0.01	0.62	0.53	0.53
Sat Flow, veh/h	1774	1583	1774	3632	3207	441
Grp Volume(v), veh/h	232	28	4	1304	352	356
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1785
Q Serve(g_s), s	6.0	0.7	0.1	10.7	5.6	5.6
Cycle Q Clear(g_c), s	6.0	0.7	0.1	10.7	5.6	5.6
Prop In Lane	1.00	1.00	1.00			0.25
Lane Grp Cap(c), veh/h	309	276	10	2186	936	944
V/C Ratio(X)	0.75	0.10	0.42	0.60	0.38	0.38
Avail Cap(c_a), veh/h	922	823	627	3311	1655	1670
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	18.9	16.7	23.8	5.6	6.7	6.7
Incr Delay (d2), s/veh	3.6	0.2	10.3	0.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.3	0.1	5.2	2.8	2.9
LnGrp Delay(d),s/veh	22.5	16.8	34.2	5.9	7.0	7.0
LnGrp LOS	C	B	C	A	A	A
Approach Vol, veh/h	260			1308	708	
Approach Delay, s/veh	21.9			6.0	7.0	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		35.7			4.3	31.5		12.4
Change Period (Y+Rc), s		6.0			4.0	6.0		4.0
Max Green Setting (Gmax), s		45.0			17.0	45.0		25.0
Max Q Clear Time (g_c+I1), s		12.7			2.1	7.6		8.0
Green Ext Time (p_c), s		17.0			0.0	7.5		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.1
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	402	34	9	3	17	122	3	524	3	176	342	98
Future Volume (veh/h)	402	34	9	3	17	122	3	524	3	176	342	98
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	529	45	12	4	22	161	4	655	4	205	398	114
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.80	0.80	0.80	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	314	251	67	36	201	203	10	877	5	239	1015	288
Arrive On Green	0.18	0.18	0.18	0.13	0.13	0.13	0.01	0.24	0.24	0.13	0.37	0.37
Sat Flow, veh/h	1774	1418	378	284	1564	1583	1774	3606	22	1774	2724	772
Grp Volume(v), veh/h	529	0	57	26	0	161	4	321	338	205	257	255
Grp Sat Flow(s),veh/h/ln	1774	0	1796	1849	0	1583	1774	1770	1859	1774	1770	1727
Q Serve(g_s), s	10.5	0.0	1.6	0.7	0.0	5.9	0.1	10.0	10.0	6.7	6.3	6.5
Cycle Q Clear(g_c), s	10.5	0.0	1.6	0.7	0.0	5.9	0.1	10.0	10.0	6.7	6.3	6.5
Prop In Lane	1.00		0.21	0.15		1.00	1.00		0.01	1.00		0.45
Lane Grp Cap(c), veh/h	314	0	318	237	0	203	10	430	452	239	659	643
V/C Ratio(X)	1.69	0.00	0.18	0.11	0.00	0.79	0.42	0.75	0.75	0.86	0.39	0.40
Avail Cap(c_a), veh/h	314	0	318	312	0	267	239	587	617	239	659	643
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	20.8	22.9	0.0	25.1	29.4	20.8	20.8	25.1	13.7	13.7
Incr Delay (d2), s/veh	321.8	0.0	0.3	0.2	0.0	11.4	26.7	3.5	3.3	25.2	0.4	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	33.1	0.0	0.8	0.4	0.0	3.2	0.1	5.2	5.5	4.9	3.1	3.1
LnGrp Delay(d),s/veh	346.3	0.0	21.0	23.1	0.0	36.5	56.1	24.2	24.1	50.3	14.0	14.1
LnGrp LOS	F		C	C		D	E	C	C	D	B	B
Approach Vol, veh/h		586			187			663			717	
Approach Delay, s/veh		314.6			34.6			24.4			24.4	
Approach LOS		F			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	12.0	19.7		12.6	4.3	27.4		15.0
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	8.0	19.7		10.0	8.0	19.7		10.5
Max Q Clear Time (g_c+I1), s	12.5	12.0		7.9	2.1	8.5		12.5
Green Ext Time (p_c), s	0.0	2.5		0.1	0.0	2.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	104.3
HCM 2010 LOS	F

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	481	16	47	589	84	11	2	36	42	1	18
Future Volume (veh/h)	36	481	16	47	589	84	11	2	36	42	1	18
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	594	20	54	677	97	16	3	51	60	1	26
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.87	0.87	0.87	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	1444	49	57	1487	665	16	3	50	91	3	78
Arrive On Green	0.03	0.41	0.36	0.03	0.42	0.42	0.04	0.04	0.06	0.05	0.05	0.07
Sat Flow, veh/h	1774	3494	118	1774	3539	1583	373	70	1190	1774	59	1533
Grp Volume(v), veh/h	44	301	313	54	677	97	70	0	0	60	0	27
Grp Sat Flow(s),veh/h/ln	1774	1770	1842	1774	1770	1583	1634	0	0	1774	0	1592
Q Serve(g_s), s	0.9	4.2	4.2	1.1	4.8	1.3	1.5	0.0	0.0	1.2	0.0	0.6
Cycle Q Clear(g_c), s	0.9	4.2	4.2	1.1	4.8	1.3	1.5	0.0	0.0	1.2	0.0	0.6
Prop In Lane	1.00		0.06	1.00		1.00	0.23		0.73	1.00		0.96
Lane Grp Cap(c), veh/h	45	731	761	57	1487	665	69	0	0	91	0	81
V/C Ratio(X)	0.98	0.41	0.41	0.94	0.46	0.15	1.02	0.00	0.00	0.66	0.00	0.33
Avail Cap(c_a), veh/h	409	1837	1912	409	3673	1643	377	0	0	563	0	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	7.2	7.2	16.7	7.2	6.2	16.4	0.0	0.0	16.2	0.0	15.7
Incr Delay (d2), s/veh	32.3	0.4	0.4	21.8	0.2	0.1	34.8	0.0	0.0	3.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	2.2	0.8	2.3	0.6	1.3	0.0	0.0	0.6	0.0	0.3
LnGrp Delay(d),s/veh	49.2	7.6	7.6	38.6	7.5	6.3	51.4	0.0	0.0	19.2	0.0	16.5
LnGrp LOS	D	A	A	D	A	A	F			B		B
Approach Vol, veh/h		658			828			70			87	
Approach Delay, s/veh		10.4			9.4			51.4			18.4	
Approach LOS		B			A			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	18.6		5.5	5.1	18.3		5.8
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	8.5	34.3		8.5	8.5	34.3		11.5
Max Q Clear Time (g_c+I1), s	2.9	6.8		3.5	3.1	6.2		3.2
Green Ext Time (p_c), s	0.0	6.1		0.1	0.0	4.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.0
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	532	71	99	367	0	238	0	239	0	0	0
Future Volume (veh/h)	0	532	71	99	367	0	238	0	239	0	0	0
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	591	79	119	442	0	326	0	327	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.73	0.73	0.73	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1027	137	173	1862	0	441	0	448	146	4	0
Arrive On Green	0.00	0.33	0.31	0.10	0.53	0.00	0.25	0.00	0.24	0.00	0.00	0.00
Sat Flow, veh/h	944	3140	419	1774	3632	0	1774	0	1583	1049	1863	0
Grp Volume(v), veh/h	0	333	337	119	442	0	326	0	327	0	0	0
Grp Sat Flow(s),veh/h/ln	944	1770	1789	1774	1770	0	1774	0	1583	1049	1863	0
Q Serve(g_s), s	0.0	7.7	7.7	3.2	3.3	0.0	8.3	0.0	9.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.7	7.7	3.2	3.3	0.0	8.3	0.0	9.4	0.0	0.0	0.0
Prop In Lane	1.00		0.23	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	146	579	585	173	1862	0	441	0	448	146	4	0
V/C Ratio(X)	0.00	0.57	0.58	0.69	0.24	0.00	0.74	0.00	0.73	0.00	0.00	0.00
Avail Cap(c_a), veh/h	614	1457	1473	1655	6575	0	482	0	706	578	733	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.7	13.8	21.5	6.3	0.0	17.1	0.0	16.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.1	1.8	0.1	0.0	4.5	0.0	0.9	0.0	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	0.0	3.9	3.9	1.6	1.6	0.0	4.6	0.0	4.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	14.9	14.9	23.3	6.4	0.0	21.6	0.0	17.8	0.0	0.0	0.0
LnGrp LOS		B	B	C	A		C		B			
Approach Vol, veh/h		670			561			653			0	
Approach Delay, s/veh		14.9			10.0			19.7			0.0	
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	9.8	21.5		18.0		31.3	14.9	3.1
Change Period (Y+Rc), s	5.6	6.0		6.0		6.0	4.6	* 6
Max Green Setting (Gmax), s	45.4	40.0		20.0		91.0	11.4	* 17
Max Q Clear Time (g_c+I1), s	5.2	9.7		11.4		5.3	10.3	0.0
Green Ext Time (p_c), s	0.0	5.8		0.6		4.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	654	0	0	316
Future Vol, veh/h	0	0	654	0	0	316
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	711	0	0	385

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	356	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	640	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	640	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	250	0	151	52	887	0	0	186	170
Future Volume (veh/h)	0	0	0	250	0	151	52	887	0	0	186	170
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	1863	1863
Adj Flow Rate, veh/h				278	0	168	56	954	0	0	214	195
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, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				436	0	194	177	1052	0	0	502	225
Arrive On Green				0.12	0.00	0.12	0.10	0.30	0.00	0.00	0.14	0.14
Sat Flow, veh/h				3548	0	1583	1774	3632	0	0	3632	1583
Grp Volume(v), veh/h				278	0	168	56	954	0	0	214	195
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	1583
Q Serve(g_s), s				9.1	0.0	12.7	3.6	31.6	0.0	0.0	6.7	14.7
Cycle Q Clear(g_c), s				9.1	0.0	12.7	3.6	31.6	0.0	0.0	6.7	14.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				436	0	194	177	1052	0	0	502	225
V/C Ratio(X)				0.64	0.00	0.86	0.32	0.91	0.00	0.00	0.43	0.87
Avail Cap(c_a), veh/h				872	0	389	364	1450	0	0	1450	649
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	0.86	0.86	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				50.9	0.0	52.5	51.0	41.2	0.0	0.0	47.8	51.2
Incr Delay (d2), s/veh				0.6	0.0	4.4	0.3	4.8	0.0	0.0	2.6	33.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.5	0.0	5.8	1.8	16.2	0.0	0.0	3.5	8.5
LnGrp Delay(d),s/veh				51.5	0.0	56.9	51.4	46.0	0.0	0.0	50.5	85.0
LnGrp LOS				D		E	D	D			D	F
Approach Vol, veh/h					446			1010			409	
Approach Delay, s/veh					53.5			46.3			66.9	
Approach LOS					D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		43.1			19.0	24.1		20.8
Change Period (Y+Rc), s		6.8			6.8	* 6.8		5.8
Max Green Setting (Gmax), s		50.0			25.0	* 50		30.0
Max Q Clear Time (g_c+I1), s		33.6			5.6	16.7		14.7
Green Ext Time (p_c), s		2.6			0.0	0.6		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	52.5
HCM 2010 LOS	D

Notes



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	433	46	308	491	350	87
Future Volume (veh/h)	433	46	308	491	350	87
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	1863
Adj Flow Rate, veh/h	487	52	335	534	368	0
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, %	2	2	2	2	2	2
Cap, veh/h	552	254	401	1045	436	195
Arrive On Green	0.16	0.16	0.12	0.30	0.25	0.00
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583
Grp Volume(v), veh/h	487	52	335	534	368	0
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583
Q Serve(g_s), s	16.9	3.5	11.6	15.3	12.1	0.0
Cycle Q Clear(g_c), s	16.9	3.5	11.6	15.3	12.1	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	552	254	401	1045	436	195
V/C Ratio(X)	0.88	0.20	0.84	0.51	0.84	0.00
Avail Cap(c_a), veh/h	705	324	846	1450	1450	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.95	0.00
Uniform Delay (d), s/veh	50.1	44.5	52.8	35.7	44.9	0.0
Incr Delay (d2), s/veh	9.0	0.1	1.8	0.1	17.0	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	8.7	3.2	5.6	7.5	6.9	0.0
LnGrp Delay(d),s/veh	59.1	44.6	54.6	35.8	61.9	0.0
LnGrp LOS	E	D	D	D	E	
Approach Vol, veh/h	539			869	368	
Approach Delay, s/veh	57.7			43.0	61.9	
Approach LOS	E			D	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		42.8		25.4	21.0	21.8		
Change Period (Y+Rc), s		6.8		5.8	6.8	* 6.8		
Max Green Setting (Gmax), s		50.0		25.0	30.0	* 50		
Max Q Clear Time (g_c+I1), s		17.3		18.9	13.6	14.1		
Green Ext Time (p_c), s		1.4		0.7	0.6	1.0		

Intersection Summary	
HCM 2010 Ctrl Delay	51.4
HCM 2010 LOS	D

Notes

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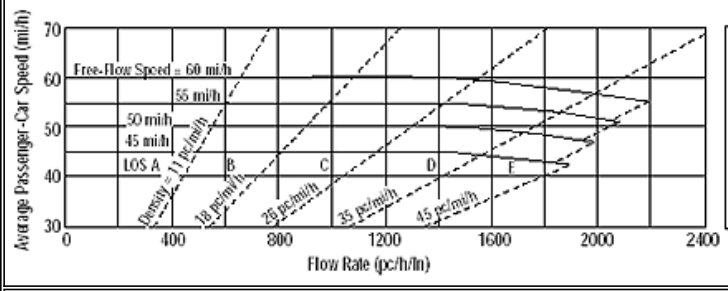
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		Site Information	
Analyst	Kimley-Horn	Highway/Direction to Travel	Latrobe Road
Agency or Company		From/To	Golden Foothills-N/White Rock
Date Performed	1/25/2016	Jurisdiction	EDC
Analysis Time Period	AM	Analysis Year	Existing 2015

Project Description

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1472	Peak-Hour Factor, PHF	0.84
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs		Calc Speed Adj and FFS	
Lane Width, LW (ft)	12.0	f_{LW} (mi/h)	0.0
Total Lateral Clearance, LC (ft)	7.0	f_{LC} (mi/h)	1.1
Access Points, A (A/mi)	1	f_A (mi/h)	0.3
Median Type, M	Divided	f_M (mi/h)	0.0
FFS (measured)		FFS (mi/h)	53.7
Base Free-Flow Speed, BFFS	55.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	884	Required Number of Lanes, N	
Speed, S (mi/h)	55.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	16.1	Max Service Flow Rate (pc/h/ln)	
LOS	B	Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*876.2*

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.79*
Bicycle level of service (Exhibit 15-4)	*C*

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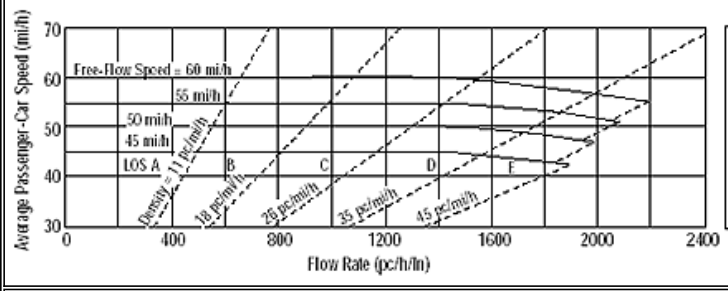
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		Site Information	
Analyst	Kimley-Horn	Highway/Direction to Travel	Latrobe Road
Agency or Company		From/To	Golden Foothills-N/White Rock
Date Performed	1/25/2016	Jurisdiction	EDC
Analysis Time Period	AM	Analysis Year	Existing 2015

Project Description

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	762	Peak-Hour Factor, PHF	0.85
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs		Calc Speed Adj and FFS	
Lane Width, LW (ft)	12.0	f_{LW} (mi/h)	0.0
Total Lateral Clearance, LC (ft)	7.0	f_{LC} (mi/h)	1.1
Access Points, A (A/mi)	1	f_A (mi/h)	0.3
Median Type, M	Divided	f_M (mi/h)	0.0
FFS (measured)		FFS (mi/h)	43.7
Base Free-Flow Speed, BFFS	45.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	452	Required Number of Lanes, N	
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	10.0	Max Service Flow Rate (pc/h/ln)	
LOS	A	Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*448.2*

Z15-0002/P15-0006/PD15-0004/S17-0015

EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.34*
Bicycle level of service (Exhibit 15-4)	*B*

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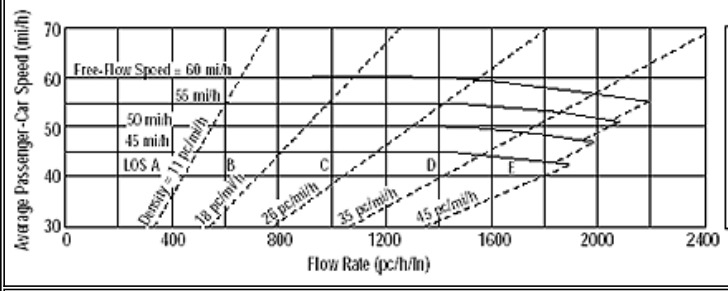
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		Site Information	
Analyst	Kimley-Horn	Highway/Direction to Travel	White Rock Road
Agency or Company		From/To	Latrobe to Post
Date Performed	1/25/2016	Jurisdiction	EDC
Analysis Time Period	AM	Analysis Year	Existing 2015

Project Description

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	338	Peak-Hour Factor, PHF	0.78
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs		Calc Speed Adj and FFS	
Lane Width, LW (ft)	12.0	f_{LW} (mi/h)	0.0
Total Lateral Clearance, LC (ft)	12.0	f_{LC} (mi/h)	0.0
Access Points, A (A/mi)	1	f_A (mi/h)	0.3
Median Type, M	Undivided	f_M (mi/h)	1.6
FFS (measured)		FFS (mi/h)	43.2
Base Free-Flow Speed, BFFS	45.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	218	Required Number of Lanes, N	
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	4.8	Max Service Flow Rate (pc/h/ln)	
LOS	A	Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*216.7*

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*1.98*
Bicycle level of service (Exhibit 15-4)	*B*

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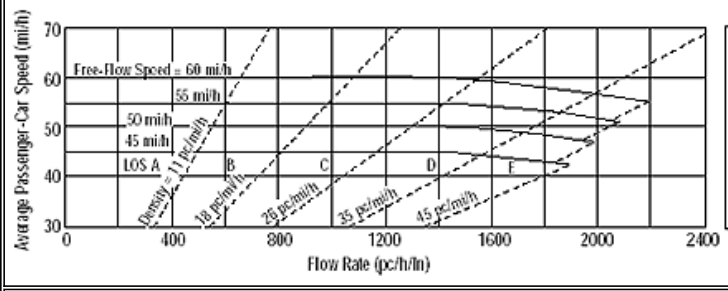
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		Site Information	
Analyst	Kimley-Horn	Highway/Direction to Travel	White Rock Road
Agency or Company		From/To	Latrobe to Post
Date Performed	1/25/2016	Jurisdiction	EDC
Analysis Time Period	AM	Analysis Year	Existing 2015

Project Description

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	671	Peak-Hour Factor, PHF	0.93
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs		Calc Speed Adj and FFS	
Lane Width, LW (ft)	12.0	f_{LW} (mi/h)	0.0
Total Lateral Clearance, LC (ft)	12.0	f_{LC} (mi/h)	0.0
Access Points, A (A/mi)	0	f_A (mi/h)	0.0
Median Type, M	Undivided	f_M (mi/h)	1.6
FFS (measured)		FFS (mi/h)	43.4
Base Free-Flow Speed, BFFS	45.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	364	Required Number of Lanes, N	
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	8.1	Max Service Flow Rate (pc/h/ln)	
LOS	A	Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*360.8*

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.23*
Bicycle level of service (Exhibit 15-4)	*B*

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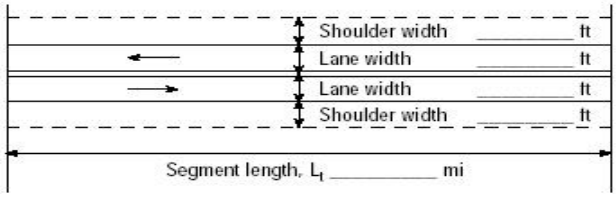
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*Kimley-Horn*	Highway / Direction of Travel	*White Rock Road*
Agency or Company		From/To	*Post to Valley View*
Date Performed	*1/25/2016*	Jurisdiction	
Analysis Time Period	*AM EB*	Analysis Year	*Existing 2015*

Project Description:

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.86*

No-passing zone *100%*

% Trucks and Buses , P_T *2 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *9*/mi

Analysis direction vol., V_d *278*veh/h

Opposing direction vol., V_o *691*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.3*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.992*	*0.998*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*326*	*805*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.3 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*42.8 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*32.8 mi/h*
		Percent free flow speed, PFFS	*76.7 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.1*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.998*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*324*	*803*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*42.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*28.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*50.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.19*

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1697*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*76.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*323.3*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.18*
Bicycle level of service (Exhibit 15-4)	*B*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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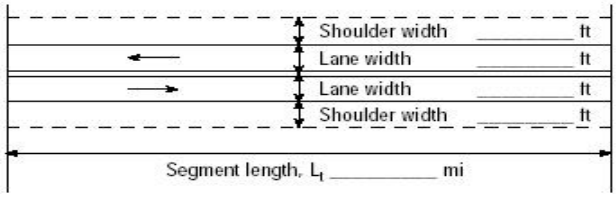
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*Kimley-Horn*	Highway / Direction of Travel	*White Rock Road*
Agency or Company		From/To	*Valley View to Post*
Date Performed	*1/25/2016*	Jurisdiction	
Analysis Time Period	*AM WB*	Analysis Year	*Existing 2015*

Project Description:

Input Data



Show North Arrow

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.93*

No-passing zone *100%*

% Trucks and Buses , P_T *2 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *9*/mi

Analysis direction vol., V_d	*691*veh/h
Opposing direction vol., V_o	*278*veh/h
Shoulder width ft	*6.0*
Lane Width ft	*12.0*
Segment Length mi	*0.3*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.998*	*0.992*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*744*	*301*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.3 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*42.8 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*31.3 mi/h*
		Percent free flow speed, PFFS	*73.2 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.998*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*743*	*300*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*61.3*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.2*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*82.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.44*

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1686*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1697*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*743.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.60*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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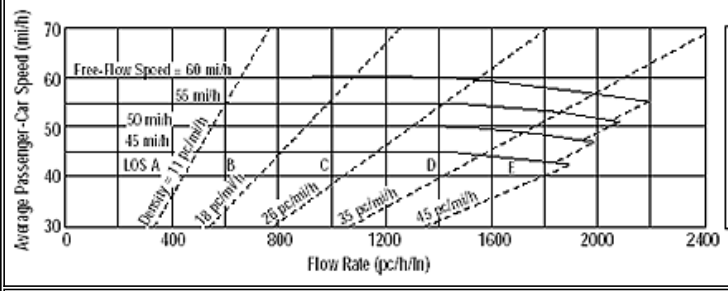
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		Site Information	
Analyst	Kimley-Horn	Highway/Direction to Travel	Latrobe Road
Agency or Company		From/To	Golden Foothills-N/White Rock
Date Performed	1/25/2016	Jurisdiction	EDC
Analysis Time Period	PM	Analysis Year	Existing 2015

Project Description

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	779	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs		Calc Speed Adj and FFS	
Lane Width, LW (ft)	12.0	f_{LW} (mi/h)	0.0
Total Lateral Clearance, LC (ft)	7.0	f_{LC} (mi/h)	1.1
Access Points, A (A/mi)	1	f_A (mi/h)	0.3
Median Type, M	Divided	f_M (mi/h)	0.0
FFS (measured)		FFS (mi/h)	53.7
Base Free-Flow Speed, BFFS	55.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	427	Required Number of Lanes, N	
Speed, S (mi/h)	55.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	7.8	Max Service Flow Rate (pc/h/ln)	
LOS	A	Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*423.4*

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.47*
Bicycle level of service (Exhibit 15-4)	*B*

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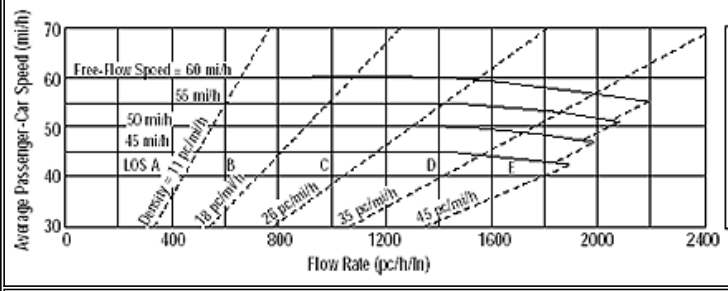
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		Site Information	
Analyst	Kimley-Horn	Highway/Direction to Travel	Latrobe Road
Agency or Company		From/To	Golden Foothills-N/White Rock
Date Performed	1/25/2016	Jurisdiction	EDC
Analysis Time Period	PM	Analysis Year	Existing 2015

Project Description

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1561	Peak-Hour Factor, PHF	0.91
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs		Calc Speed Adj and FFS	
Lane Width, LW (ft)	12.0	f_{LW} (mi/h)	0.0
Total Lateral Clearance, LC (ft)	7.0	f_{LC} (mi/h)	1.1
Access Points, A (A/mi)	1	f_A (mi/h)	0.3
Median Type, M	Divided	f_M (mi/h)	0.0
FFS (measured)		FFS (mi/h)	43.7
Base Free-Flow Speed, BFFS	45.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	866	Required Number of Lanes, N	
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	19.2	Max Service Flow Rate (pc/h/ln)	
LOS	C	Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*857.7*

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.67*
Bicycle level of service (Exhibit 15-4)	*C*

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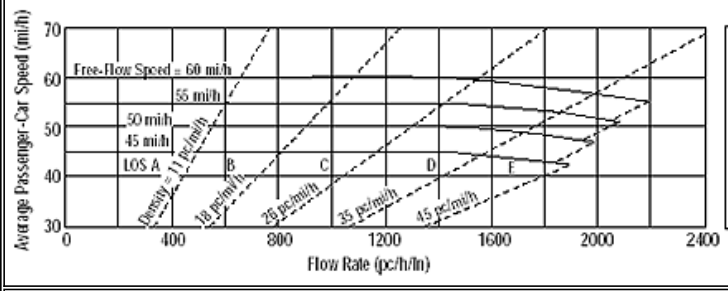
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		Site Information	
Analyst	Kimley-Horn	Highway/Direction to Travel	White Rock Road
Agency or Company		From/To	Latrobe to Post
Date Performed	1/25/2016	Jurisdiction	EDC
Analysis Time Period	PM	Analysis Year	Existing 2015

Project Description

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	847	Peak-Hour Factor, PHF	0.87
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs		Calc Speed Adj and FFS	
Lane Width, LW (ft)	12.0	f_{LW} (mi/h)	0.0
Total Lateral Clearance, LC (ft)	12.0	f_{LC} (mi/h)	0.0
Access Points, A (A/mi)	1	f_A (mi/h)	0.3
Median Type, M	Undivided	f_M (mi/h)	1.6
FFS (measured)		FFS (mi/h)	43.2
Base Free-Flow Speed, BFFS	45.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	491	Required Number of Lanes, N	
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	10.9	Max Service Flow Rate (pc/h/ln)	
LOS	A	Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*486.8*

Z15-0002/P15-0006/PD15-0004/S17-0015

EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.39*
Bicycle level of service (Exhibit 15-4)	*B*

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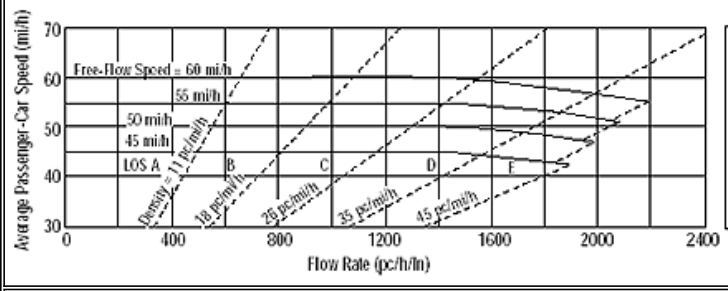
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		Site Information	
Analyst	Kimley-Horn	Highway/Direction to Travel	White Rock Road
Agency or Company		From/To	Latrobe to Post
Date Performed	1/25/2016	Jurisdiction	EDC
Analysis Time Period	PM	Analysis Year	Existing 2015

Project Description

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	590	Peak-Hour Factor, PHF	0.94
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs		Calc Speed Adj and FFS	
Lane Width, LW (ft)	12.0	f_{LW} (mi/h)	0.0
Total Lateral Clearance, LC (ft)	12.0	f_{LC} (mi/h)	0.0
Access Points, A (A/mi)	0	f_A (mi/h)	0.0
Median Type, M	Undivided	f_M (mi/h)	1.6
FFS (measured)		FFS (mi/h)	43.4
Base Free-Flow Speed, BFFS	45.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	316	Required Number of Lanes, N	
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	7.0	Max Service Flow Rate (pc/h/ln)	
LOS	A	Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*313.8*

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.16*
Bicycle level of service (Exhibit 15-4)	*B*

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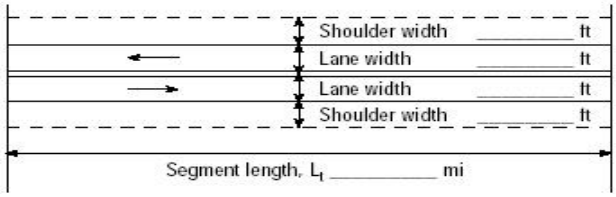
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*Kimley-Horn*	Highway / Direction of Travel	*White Rock Road*
Agency or Company		From/To	*Post to Valley View*
Date Performed	*1/25/2016*	Jurisdiction	
Analysis Time Period	*PM EB*	Analysis Year	*Existing 2015*

Project Description:

Input Data



☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.89*

No-passing zone *100%*

Show North Arrow

% Trucks and Buses , P_T *2 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *9*/mi

Analysis direction vol., V_d *651*veh/h

Opposing direction vol., V_o *519*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.3*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.998*	*0.998*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*733*	*584*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.3 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.9 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*42.8 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*30.7 mi/h*
		Percent free flow speed, PFFS	*71.7 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*731*	*583*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*64.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*80.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.43*

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1697*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*71.7*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*731.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.59*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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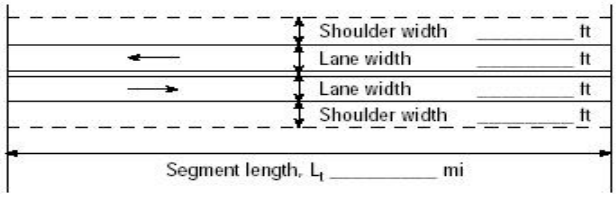
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*Kimley-Horn*	Highway / Direction of Travel	*White Rock Road*
Agency or Company		From/To	*Valley View to Post*
Date Performed	*1/25/2016*	Jurisdiction	
Analysis Time Period	*PM WB*	Analysis Year	*Existing 2015*

Project Description:

Input Data



☐ Class I highway ☐ Class II highway ☑ Class III highway



Terrain ☑ Level ☐ Rolling

Analysis direction vol., V_d	*519*veh/h	Grade Length	mi Up/down
Opposing direction vol., V_o	*651*veh/h	Peak-hour factor, PHF	*0.95*
Shoulder width ft	*6.0*	No-passing zone	*100%*
Lane Width ft	*12.0*	% Trucks and Buses , P_T	*2 %*
Segment Length mi	*0.3*	% Recreational vehicles, P_R	*0%*
		Access points *mi*	*9*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.2*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.996*	*0.998*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*549*	*687*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.3 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*42.8 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*31.6 mi/h*
		Percent free flow speed, PFFS	*74.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*546*	*685*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*56.3*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.3*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*70.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.32*

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1697*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*74.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*546.3*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.46*
Bicycle level of service (Exhibit 15-4)	*B*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

	Segment Inputs				Existing Conditions												
					Flow Inputs		AM LOS Performance Measures						PM LOS Performance Measures				
		Length	Number of Lanes	Interchange Density	AM Peak	PM Peak	V_p	FFS		S	D	LOS	V_p	FFS		S	D	LOS
		(ft)	(N)	(I/mi)	(veh/h)	(veh/h)	(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)		(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)	
EB	West of Latrobe Rd SB Off Ramp	6690	3	0.33	2,665	4,386	994.547	74.12	75	74.9997	13.261	B	1636.804	74.12	75	70.5109	23.2	C
EB	Latrobe Rd NB Off Ramp to Latrobe Rd On Ramp	1990	3	0.50	1,274	2,884	475.442	73.6	75	71.954	6.6076	A	1076.275	73.6	75	74.9356	14.363	B
EB	Silva Valley Pkwy SB/NB Off Ramp to Silva Valley Pkwy NB/SB On Ramp	2375	3	0.50	1,554	3,077	579.935	73.6	75	73.0466	7.9392	A	1148.301	73.6	75	74.7565	15.361	B
EB	East of Silva Valley Pkwy NB/SB On Ramp	3400	3	0.50	1,792	3,472	668.754	73.6	75	73.7854	9.0635	A	1295.71	73.6	75	74.032	17.502	B
WB	Silva Valley Pkwy NB/SB Off Ramp to Silva Valley Pkwy SB/NB On Ramp	2350	2	0.50	2,646	1,740	1481.18	73.6	75	72.4369	20.448	C	974.0217	73.6	75	74.9925	12.988	B
WB	El Dorado Hills Blvd Off Ramp to El Dorado Hills Blvd On Ramp	3565	2	0.50	2,531	1,634	1416.81	73.6	75	73.0768	19.388	C	914.6848	73.6	75	74.9194	12.209	B
WB	West of El Dorado Hills Blvd On Ramp	5890	2	0.33	3,773	3,020	2112.06	74.12	75	61.31	34.449	D	1690.543	74.12	75	69.7213	24.247	C
Univeral	Weaving Segments	2000	3	0.50	1,652	3,556	616.507	73.6	75	73.372	8.4025	A						
		3425	3	0.50	3,135	1,962	1169.95	73.6	75	74.6803	15.666	B	732.1957	73.6	75	74.2061	9.8671	A
PHF	0.92																	
(P_T)	6%																	
f_{HV}	0.970873786																	

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

	Segment Inputs				Existing Conditions																											
					AM Flow Inputs			AM LOS Performance Measures														PM Flow Inputs			PM LOS Performance Measures										
		Number of Lanes	Number of Ramp Lanes	Length of Acceleration Lane (L_A)	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	v_F/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	v_F/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
		(N)		(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/h)	(pc/h)			(pc/h/ln)						(pc/mi/ln)		(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/hr)	(pc/h)			(pc/h/ln)						(pc/mi/ln)	
EB	Latrobe Rd On Ramp	3	1	110	1652	1274	378	1850	1426	423	41	0.5806	828.1	7200	299	621	828	0.2569	14.351	B	3556	2884	672	3981	3229	752	92	0.5806	1874.6	7200	677	1406	1875	0.5529	24.929	C
	Silva Valley On Ramp	3	1	550	1792	1554	238	2006	1740	266	50	0.5929	1031.5	7200	354	774	1032	0.2786	12.028	B	3472	3077	395	3887	3445	442	98	0.5929	2042.5	7200	701	1532	2042	0.5399	21.204	C
WB	El Dorado Hills Blvd On Ramp	2	1	795	3773	2531	1242	4224	2834	1391	81	1	2833.6	4800	0	2125	2834	0.88	32.799	D	3020	1634	1386	3381	1829	1552	52	1	1829.4	4800	0	1372	1829	0.7044	26.149	C
	Silva Valley On Ramp	2	1	800	3135	2646	489	3510	2962	547	85	1	2962.4	4800	0	2222	2962	0.7312	27.584	C	1962	1740	222	2197	1948	249	56	1	1948	4800	0	1461	1948	0.4576	17.478	B

Univeral Inputs:

Length	1500	(ft)
S_{hv}	70	(mi/h)
S_{FR}	35	(mi/h)
PHF	0.92	
(P_T)	6%	
f_{HV}	0.970873786	

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

					Existing Conditions																									
	Segment Inputs				AM Flow Inputs			AM LOS Performance Measures											PM Flow Inputs			PM LOS Performance Measures										
		Number of Lanes	Number of Ramp Lanes	L_{EQ}	Length of Deceleration Lane (L_D)	Downstream Volume	Upstream Volume	Ramp Volume	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
		(N)		(ft)	(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)		(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)	
EB	Latrobe SB Off Ramp	3	1	568	140	1582	2665	1083	344.826	2983.6	1212.5	0.436	1984.7	7200	499	1489	1985	0.4144	20.061	C	3588	4386	798	788.174	4910.4	893.41	0.436	2644.8	7200	1133	1984	2645	0.682	25.737	C
EB	Latrobe NB Off Ramp	3	1	-	140	1274	1582	308	-	1771.2	344.83	0.6999	1343.1	7200	428	1007	1343	0.246	14.542	B	2884	3588	704	-	4017	788.17	0.6233	2800.8	7200	1216	2101	2801	0.5579	27.079	C
EB	Silva Valley SB Off Ramp	3	1	-	150	1554	1652	98	-	1849.5	109.72	0.7087	1342.7	7200	253	1007	1343	0.2569	14.45	B	3077	3556	479	-	3981.2	536.27	0.6358	2726.5	7200	1255	2045	2727	0.5529	26.35	C
WB	El Dorado Hills Blvd Off Ramp	3	1	-	190	2531	3135	604	-	3509.8	676.22	0.6411	2493	7200	1017	1870	2493	0.4875	23.982	C	1634	1962	328	-	2196.6	367.22	0.6882	1626.2	7200	570	1220	1626	0.3051	16.527	B
WB	Silva Valley NB Off Ramp	3	2	-	150	2646	3142	496	-	3517.7	555.3	0.6465	2470.5	7200	1047	1853	2471	0.4886	24.148	C	1740	2141	401	-	2397	448.95	0.6794	1772.5	7200	624	1329	1772	0.3329	18.145	B

Univeral Inputs:

Leng	1500	(ft)
S_{FF}	70	(mi/h)
S_{FR}	35	(mi/h)
PHF	0.92	
(P_T)	6%	
f_{HV}	0.970873786	

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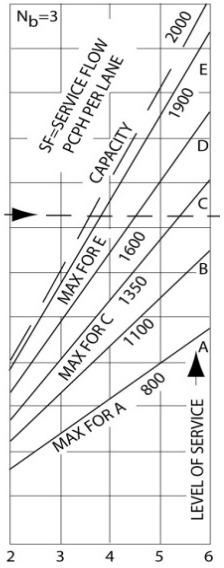
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

EB US-50, East of Latrobe Rd On Ramp, Existing Conditons (PM)

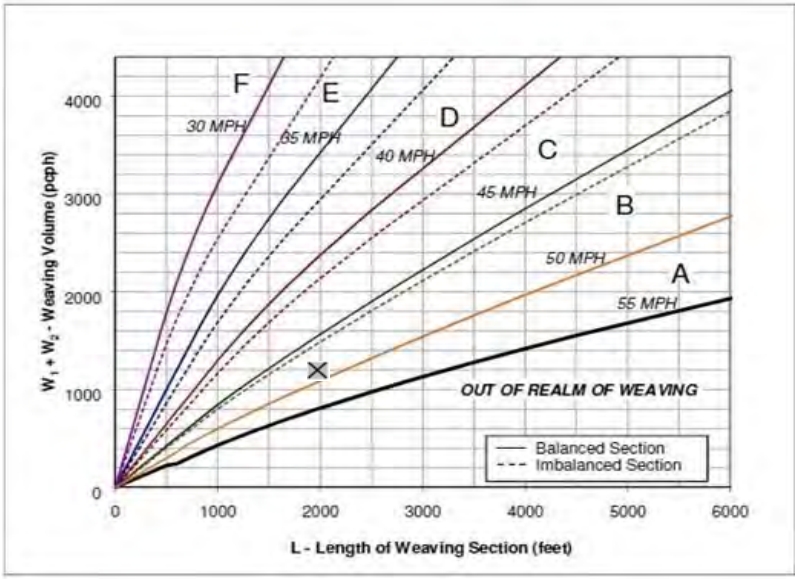
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS



Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	3,556	Volume (vph)	672	Volume (vph)	479
Truck Percentage	6%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,663	Volume (pcph)	679	Volume (pcph)	484

W1 + W2	1,163
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	49.0
Weaving Intensity Factor (k)	1.60
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	988
Level of Service (LOS)	B



Appendix C

Analysis Worksheets for
Existing (2015) plus Proposed Project Conditions

Montano de El Dorado — Existing Plus Project Conditions

SimTraffic Simulation Summary — AM Peak

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	7397	7291	7393	7248	7357	7505	7352
Vehs Exited	7375	7326	7381	7230	7364	7473	7367
Starting Vehs	291	328	314	322	323	292	321
Ending Vehs	313	293	326	340	316	324	306
Travel Distance (mi)	4953	4999	4970	4907	4940	5067	4905
Travel Time (hr)	326.4	327.8	320.5	319.8	339.4	338.5	324.9
Total Delay (hr)	173.3	173.5	167.1	168.1	186.6	182.0	172.7
Total Stops	12672	12808	12483	12396	12697	13077	12420
Fuel Used (gal)	230.7	231.5	230.4	228.3	233.7	237.7	230.4

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	7380	7365	7317	7359
Vehs Exited	7420	7360	7323	7363
Starting Vehs	305	267	289	297
Ending Vehs	265	272	283	296
Travel Distance (mi)	5033	4988	4923	4968
Travel Time (hr)	346.6	327.9	316.6	328.8
Total Delay (hr)	191.0	174.4	164.5	175.3
Total Stops	12790	12840	12336	12648
Fuel Used (gal)	238.1	232.9	228.7	232.2

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1759	1788	1779	1734	1735	1810	1709
Vehs Exited	1723	1766	1784	1762	1731	1768	1747
Starting Vehs	291	328	314	322	323	292	321
Ending Vehs	327	350	309	294	327	334	283
Travel Distance (mi)	1183	1242	1190	1214	1156	1233	1181
Travel Time (hr)	76.7	83.9	76.1	76.9	78.0	77.6	73.3
Total Delay (hr)	40.2	45.5	39.1	39.5	42.3	39.7	36.8
Total Stops	2946	3258	2989	3045	3078	2939	2855
Fuel Used (gal)	54.6	57.8	54.8	56.2	54.5	56.2	53.9

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1736	1799	1783	1763
Vehs Exited	1737	1758	1769	1753
Starting Vehs	305	267	289	297
Ending Vehs	304	308	303	308
Travel Distance (mi)	1197	1207	1231	1203
Travel Time (hr)	81.2	74.2	80.3	77.8
Total Delay (hr)	44.0	37.1	42.2	40.6
Total Stops	3179	2933	3102	3031
Fuel Used (gal)	56.2	55.2	57.4	55.7

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2084	2005	2105	2023	2108	2051	2047
Vehs Exited	2058	2013	2055	1945	2043	2012	1981
Starting Vehs	327	350	309	294	327	334	283
Ending Vehs	353	342	359	372	392	373	349
Travel Distance (mi)	1328	1329	1356	1279	1354	1324	1263
Travel Time (hr)	90.1	90.7	92.0	85.1	97.8	89.6	85.1
Total Delay (hr)	49.1	49.8	50.1	45.6	56.0	48.5	45.8
Total Stops	3593	3610	3633	3337	3666	3504	3233
Fuel Used (gal)	62.8	62.4	63.9	60.0	65.4	62.9	59.8

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2077	2048	2089	2066
Vehs Exited	2022	1975	2058	2018
Starting Vehs	304	308	303	308
Ending Vehs	359	381	334	353
Travel Distance (mi)	1325	1309	1318	1319
Travel Time (hr)	94.6	87.4	88.5	90.1
Total Delay (hr)	53.8	47.3	47.8	49.4
Total Stops	3375	3447	3471	3491
Fuel Used (gal)	63.3	61.1	62.4	62.4

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1803	1778	1720	1751	1808	1860	1814
Vehs Exited	1806	1821	1771	1803	1850	1890	1786
Starting Vehs	353	342	359	372	392	373	349
Ending Vehs	350	299	308	320	350	343	377
Travel Distance (mi)	1224	1242	1185	1237	1237	1284	1244
Travel Time (hr)	80.5	79.5	75.3	80.2	87.0	90.3	83.5
Total Delay (hr)	42.7	41.1	38.7	41.9	48.7	50.7	45.0
Total Stops	3112	3105	2887	3070	3007	3548	3247
Fuel Used (gal)	56.8	57.3	54.9	57.1	58.9	61.4	58.4

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1839	1747	1675	1773
Vehs Exited	1847	1750	1742	1808
Starting Vehs	359	381	334	353
Ending Vehs	351	378	267	331
Travel Distance (mi)	1276	1217	1189	1234
Travel Time (hr)	89.9	83.2	73.6	82.3
Total Delay (hr)	50.6	45.5	37.0	44.2
Total Stops	3219	3274	2918	3139
Fuel Used (gal)	60.9	57.7	54.2	57.7

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1751	1720	1789	1740	1706	1784	1782
Vehs Exited	1788	1726	1771	1720	1740	1803	1853
Starting Vehs	350	299	308	320	350	343	377
Ending Vehs	313	293	326	340	316	324	306
Travel Distance (mi)	1217	1185	1239	1177	1193	1225	1216
Travel Time (hr)	79.1	73.7	77.1	77.6	76.6	81.0	83.0
Total Delay (hr)	41.4	37.1	39.1	41.2	39.5	43.1	45.1
Total Stops	3021	2835	2974	2944	2946	3086	3085
Fuel Used (gal)	56.5	54.0	56.8	55.1	54.9	57.1	58.3

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1728	1771	1770	1752
Vehs Exited	1814	1877	1754	1780
Starting Vehs	351	378	267	331
Ending Vehs	265	272	283	296
Travel Distance (mi)	1234	1255	1185	1213
Travel Time (hr)	80.8	83.1	74.2	78.6
Total Delay (hr)	42.6	44.5	37.6	41.1
Total Stops	3017	3186	2845	2997
Fuel Used (gal)	57.8	58.9	54.6	56.4

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.0
Denied Del/Veh (s)	0.1	0.1	0.2	0.1	0.2	0.1	0.0	0.0	0.0	2.6	1.3	1.1
Total Delay (hr)	0.2	0.1	0.7	0.1	0.1	0.2	0.7	1.9	0.1	1.6	4.7	0.1
Total Del/Veh (s)	38.0	38.6	20.4	37.1	40.4	8.5	37.6	9.6	6.8	37.6	11.7	8.2
Stop Delay (hr)	0.2	0.1	0.7	0.1	0.1	0.2	0.7	1.0	0.0	1.4	2.2	0.0
Stop Del/Veh (s)	36.3	33.1	18.9	35.6	36.6	7.7	33.8	4.8	4.2	34.1	5.3	5.9

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	0.6
Denied Del/Veh (s)	0.8
Total Delay (hr)	10.4
Total Del/Veh (s)	13.9
Stop Delay (hr)	6.5
Stop Del/Veh (s)	8.7

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.2	1.2	0.4	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	2.0	0.9	0.5	2.7	2.4	1.2	11.5	2.2	0.4	1.1	5.9	3.2
Total Del/Veh (s)	42.6	44.3	4.3	90.1	103.5	80.2	77.8	13.4	9.7	71.0	24.6	16.9
Stop Delay (hr)	1.8	0.8	0.0	2.6	2.3	1.2	10.3	1.4	0.3	1.0	3.8	1.5
Stop Del/Veh (s)	39.6	40.1	0.0	85.2	97.1	76.3	69.3	8.5	6.6	64.2	15.5	7.7

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	34.1
Total Del/Veh (s)	32.5
Stop Delay (hr)	26.8
Stop Del/Veh (s)	25.6

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.4	0.0	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	1.3	0.3	0.0	0.1	0.0	0.0	0.4
Total Delay (hr)	8.3	0.1	1.7	0.3	4.6	7.0	22.1
Total Del/Veh (s)	26.5	1.0	6.6	6.7	75.0	21.9	20.1
Stop Delay (hr)	4.9	0.0	0.6	0.1	4.1	3.1	12.9
Stop Del/Veh (s)	15.8	0.0	2.3	2.9	66.9	9.6	11.7

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	4.0	0.1	0.1	3.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.2	0.2	0.0	1.5	0.6	1.4	1.7	4.7	0.1	9.3	6.1	0.4
Total Del/Veh (s)	92.6	84.2	9.9	77.2	75.8	19.5	98.0	20.0	5.5	75.9	14.3	5.3
Stop Delay (hr)	0.2	0.2	0.0	1.4	0.6	1.3	1.7	3.2	0.1	8.2	3.2	0.2
Stop Del/Veh (s)	90.7	81.2	9.9	73.4	70.9	17.6	94.1	13.8	4.5	67.4	7.4	2.3

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	26.4
Total Del/Veh (s)	25.9
Stop Delay (hr)	20.4
Stop Del/Veh (s)	20.0

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Denied Delay (hr)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	4.4	1.1	0.2	5.8	2.9	0.4	0.1	1.6	3.4	0.1	1.8	11.8
Total Del/Veh (s)	64.9	42.3	11.3	63.2	42.6	9.0	65.6	62.3	19.6	3.7	58.7	36.5
Stop Delay (hr)	4.0	0.9	0.2	5.2	2.4	0.3	0.1	1.5	2.9	0.1	1.5	7.3
Stop Del/Veh (s)	59.1	35.8	9.7	57.1	34.9	6.9	65.5	60.1	17.0	3.8	50.6	22.6

5: Latrobe Road & White Rock Road Performance by movement

Movement	SBR	All
Denied Delay (hr)	0.0	0.3
Denied Del/Veh (s)	0.0	0.3
Total Delay (hr)	1.0	34.5
Total Del/Veh (s)	10.6	34.7
Stop Delay (hr)	0.6	27.1
Stop Del/Veh (s)	6.9	27.3

6: Latrobe Rd & Driveway Performance by movement

Movement	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.3	0.0	0.0	0.8	1.2
Total Del/Veh (s)	3.0	1.3	1.2	6.3	1.9	1.7
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	2.9	0.1	0.1	3.8	0.1	0.1

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.7	0.5	0.2	0.1	0.1	0.1	3.0	0.2	0.3	0.0	0.1	0.2
Total Delay (hr)	2.2	0.0	0.1	0.1	0.1	0.1	0.5	1.2	0.0	0.1	4.3	1.6
Total Del/Veh (s)	52.6	46.9	35.8	59.0	53.4	15.2	64.3	6.0	4.1	72.0	12.9	14.6
Stop Delay (hr)	2.0	0.0	0.1	0.1	0.1	0.1	0.4	0.8	0.0	0.1	2.2	0.8
Stop Del/Veh (s)	48.7	43.4	33.0	56.6	50.5	14.5	62.1	4.2	3.2	68.1	6.8	7.4

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	10.1
Total Del/Veh (s)	14.5
Stop Delay (hr)	6.7
Stop Del/Veh (s)	9.7

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	4.0	0.3	0.3
Total Delay (hr)	1.4	1.9	0.0	1.4	4.8	1.0	1.0	0.1	0.0	0.8	0.1	0.4
Total Del/Veh (s)	66.8	30.1	5.8	90.3	29.6	16.5	61.8	26.1	4.9	71.1	28.6	13.0
Stop Delay (hr)	1.3	1.6	0.0	1.3	3.9	0.8	1.0	0.0	0.0	0.8	0.1	0.4
Stop Del/Veh (s)	62.9	25.3	3.9	86.9	24.0	14.4	59.2	24.2	4.8	68.1	25.5	11.7

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	13.0
Total Del/Veh (s)	32.1
Stop Delay (hr)	11.4
Stop Del/Veh (s)	28.1

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	6.6	3.6	3.1	3.6	0.8	0.7	4.1	0.1	0.2
Total Delay (hr)	0.6	1.2	0.3	0.8	6.1	0.4	1.3	0.2	0.2	0.1	0.1	0.2
Total Del/Veh (s)	35.0	22.8	15.8	45.2	36.0	21.5	24.5	20.4	7.0	34.1	32.9	13.9
Stop Delay (hr)	0.5	0.9	0.2	0.8	5.1	0.4	1.2	0.1	0.1	0.1	0.1	0.2
Stop Del/Veh (s)	31.8	16.8	13.0	40.6	30.2	20.3	21.3	16.5	5.3	32.2	29.3	13.7

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	1.0
Denied Del/Veh (s)	2.6
Total Delay (hr)	11.4
Total Del/Veh (s)	28.5
Stop Delay (hr)	9.6
Stop Del/Veh (s)	24.1

Total Network Performance

Denied Delay (hr)	2.8
Denied Del/Veh (s)	1.4
Total Delay (hr)	172.6
Total Del/Veh (s)	81.1
Stop Delay (hr)	122.6
Stop Del/Veh (s)	57.6

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	8	52	128	32	96	101	108	137	129	124	305	337
Average Queue (ft)	0	17	59	5	36	39	35	48	42	70	112	162
95th Queue (ft)	5	43	108	18	72	86	83	108	104	132	256	331
Link Distance (ft)		932	932	482	482		774	774	774		309	309
Upstream Blk Time (%)											0	3
Queuing Penalty (veh)											0	0
Storage Bay Dist (ft)	150					250				100		
Storage Blk Time (%)										4	5	
Queuing Penalty (veh)										27	8	

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	LT	R	L	LT	TR	L	L	T	T	TR	L
Maximum Queue (ft)	158	150	7	169	253	174	395	397	134	160	208	205
Average Queue (ft)	86	78	0	65	144	102	224	228	63	80	96	54
95th Queue (ft)	141	138	7	160	226	192	371	380	120	143	168	138
Link Distance (ft)	1228	1228	1228		621		646	646	646	646	646	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				150		150						200
Storage Blk Time (%)				0	11	1						0
Queuing Penalty (veh)				0	17	2						0

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (ft)	293	255	362	225
Average Queue (ft)	173	117	114	145
95th Queue (ft)	269	211	271	247
Link Distance (ft)	774	774	774	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)	5		0	5
Queuing Penalty (veh)	2		0	14

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	R	L	T	T	T	T
Maximum Queue (ft)	344	310	125	146	193	109	231	321	326	328	249
Average Queue (ft)	215	181	25	48	59	30	137	155	134	109	88
95th Queue (ft)	310	288	82	115	146	82	208	280	254	231	181
Link Distance (ft)	1211		572	572	572			646	646	646	646
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)		450				275	575				
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	8	46	43	31	124	224	188	81	93	215	244	298
Average Queue (ft)	0	10	8	7	72	99	63	25	42	74	94	123
95th Queue (ft)	6	36	30	27	133	189	139	60	82	166	197	245
Link Distance (ft)			778	778		526	526			839	839	839
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					6	11				0		
Queuing Penalty (veh)					10	8				0		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	75	306	334	394	374	338	273
Average Queue (ft)	18	198	218	145	140	107	47
95th Queue (ft)	51	290	305	327	319	277	159
Link Distance (ft)	839			572	572	572	572
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		0	0	0			
Queuing Penalty (veh)		0	2	1			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	UL	T	T
Maximum Queue (ft)	189	221	96	121	178	185	192	223	133	139	121	136
Average Queue (ft)	79	142	39	44	115	127	86	90	50	60	50	56
95th Queue (ft)	187	220	82	89	184	190	179	165	95	118	100	112
Link Distance (ft)			767	767				315	315		273	273
Upstream Blk Time (%)								0				
Queuing Penalty (veh)								0				
Storage Bay Dist (ft)	325	325			175	175	175			275		
Storage Blk Time (%)					0	3	2	0				
Queuing Penalty (veh)					0	3	2	1				

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	133	77	52	79	249	477	500	423	245
Average Queue (ft)	53	9	21	25	57	237	263	76	49
95th Queue (ft)	108	43	50	63	196	423	446	301	159
Link Distance (ft)	273	273				839	839	839	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			25	225	225				250
Storage Blk Time (%)		1	1		0	9		0	0
Queuing Penalty (veh)		2	2		0	10		1	0

Intersection: 6: Latrobe Rd & Driveway

Movement	WB	NB	SB	SB	SB	B25	B80	B80
Directions Served	R	TR	L	T	T	T	T	T
Maximum Queue (ft)	30	10	36	96	110	10	26	34
Average Queue (ft)	13	0	8	5	7	0	0	0
95th Queue (ft)	35	7	30	49	58	5	0	6
Link Distance (ft)	261	491		468	468	243	273	273
Upstream Blk Time (%)							0	0
Queuing Penalty (veh)							0	0
Storage Bay Dist (ft)			250					
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	124	205	64	80	185	171	72	487	504
Average Queue (ft)	42	100	22	26	75	68	7	177	209
95th Queue (ft)	110	177	55	62	152	145	42	409	452
Link Distance (ft)		660	453		907	907		491	491
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								1	4
Storage Bay Dist (ft)	100			200			195		
Storage Blk Time (%)	0	17			0			7	
Queuing Penalty (veh)	0	12			0			0	

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	B20	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	T	L	TR	L	TR
Maximum Queue (ft)	104	164	174	100	145	277	259	361	133	60	75	163
Average Queue (ft)	65	67	77	17	67	217	129	81	50	14	37	58
95th Queue (ft)	113	147	146	62	139	301	240	258	105	40	77	126
Link Distance (ft)		315	315			198	198	1217	216	216		410
Upstream Blk Time (%)						17	4					
Queuing Penalty (veh)						71	17					
Storage Bay Dist (ft)	80			110	120						50	
Storage Blk Time (%)	13	5	5	0	2	33					21	12
Queuing Penalty (veh)	15	4	1	0	6	19					26	5

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	109	141	176	145	347	330	124	253	36	74
Average Queue (ft)	43	50	76	71	181	134	85	66	8	25
95th Queue (ft)	89	112	146	156	342	306	132	165	28	55
Link Distance (ft)		1217	1217		368	368		331		245
Upstream Blk Time (%)					6	5		0		
Queuing Penalty (veh)					0	0		0		
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)	0	0		1	30		8	0		0
Queuing Penalty (veh)	0	0		2	21		11	0		0

Network Summary

Network wide Queuing Penalty: 329

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	7	20	622	970	163
Future Volume (veh/h)	50	7	20	622	970	163
Number	3	18	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	71	10	22	691	1078	181
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.70	0.70	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	142	126	49	2169	1402	235
Arrive On Green	0.08	0.08	0.03	0.61	0.46	0.46
Sat Flow, veh/h	1774	1583	1774	3632	3128	508
Grp Volume(v), veh/h	71	10	22	691	628	631
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1773
Q Serve(g_s), s	1.2	0.2	0.4	3.1	9.6	9.7
Cycle Q Clear(g_c), s	1.2	0.2	0.4	3.1	9.6	9.7
Prop In Lane	1.00	1.00	1.00			0.29
Lane Grp Cap(c), veh/h	142	126	49	2169	818	819
V/C Ratio(X)	0.50	0.08	0.45	0.32	0.77	0.77
Avail Cap(c_a), veh/h	1363	1217	927	4896	2448	2453
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	13.9	15.6	3.0	7.3	7.3
Incr Delay (d2), s/veh	2.7	0.3	2.4	0.1	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	0.7	0.1	0.2	1.5	4.7	4.7
LnGrp Delay(d),s/veh	17.1	14.1	17.9	3.1	7.9	7.9
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	81			713	1259	
Approach Delay, s/veh	16.7			3.6	7.9	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		25.9			4.9	21.0		6.6
Change Period (Y+Rc), s		6.0			4.0	6.0		4.0
Max Green Setting (Gmax), s		45.0			17.0	45.0		25.0
Max Q Clear Time (g_c+I1), s		5.1			2.4	11.7		3.2
Green Ext Time (p_c), s		8.0			0.0	3.4		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	24	5	9	42	202	9	330	4	141	411	423
Future Volume (veh/h)	108	24	5	9	42	202	9	330	4	141	411	423
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	135	30	6	10	49	235	9	347	4	152	442	455
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.80	0.80	0.80	0.86	0.86	0.86	0.95	0.95	0.95	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	160	32	56	276	285	21	877	10	194	606	542
Arrive On Green	0.11	0.11	0.11	0.18	0.18	0.18	0.01	0.24	0.24	0.11	0.34	0.34
Sat Flow, veh/h	1774	1508	302	313	1534	1583	1774	3584	41	1774	1770	1583
Grp Volume(v), veh/h	135	0	36	59	0	235	9	171	180	152	442	455
Grp Sat Flow(s),veh/h/ln	1774	0	1810	1847	0	1583	1774	1770	1855	1774	1770	1583
Q Serve(g_s), s	3.8	0.0	0.9	1.4	0.0	7.5	0.3	4.2	4.2	4.4	11.4	13.9
Cycle Q Clear(g_c), s	3.8	0.0	0.9	1.4	0.0	7.5	0.3	4.2	4.2	4.4	11.4	13.9
Prop In Lane	1.00		0.17	0.17		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	188	0	192	332	0	285	21	433	454	194	606	542
V/C Ratio(X)	0.72	0.00	0.19	0.18	0.00	0.82	0.43	0.40	0.40	0.78	0.73	0.84
Avail Cap(c_a), veh/h	356	0	364	353	0	303	272	667	699	272	667	597
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	21.3	18.2	0.0	20.6	25.6	16.5	16.5	22.7	15.1	15.9
Incr Delay (d2), s/veh	5.0	0.0	0.5	0.3	0.0	16.0	13.6	0.6	0.6	9.5	3.7	9.6
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	2.1	0.0	0.5	0.7	0.0	4.5	0.2	2.1	2.2	2.6	6.1	7.4
LnGrp Delay(d),s/veh	27.6	0.0	21.8	18.4	0.0	36.7	39.2	17.1	17.1	32.1	18.7	25.4
LnGrp LOS	C		C	B		D	D	B	B	C	B	C
Approach Vol, veh/h		171			294			360			1049	
Approach Delay, s/veh		26.4			33.0			17.6			23.6	
Approach LOS		C			C			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	9.7	18.1		14.4	4.6	23.2		10.0
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	5.6	19.7		10.0	8.0	19.7		10.5
Max Q Clear Time (g_c+I1), s	16.4	6.2		9.5	2.3	15.9		5.8
Green Ext Time (p_c), s	0.1	1.6		0.1	0.0	2.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	361	4	13	393	59	10	0	30	80	1	45
Future Volume (veh/h)	8	361	4	13	393	59	10	0	30	80	1	45
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	9	388	4	15	447	67	11	0	34	105	1	59
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.89	0.89	0.89	0.76	0.76	0.76
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	1240	13	6	1244	556	10	0	30	149	2	131
Arrive On Green	0.00	0.35	0.29	0.00	0.35	0.35	0.02	0.00	0.04	0.08	0.08	0.10
Sat Flow, veh/h	1774	3589	37	1774	3539	1583	397	0	1229	1774	26	1561
Grp Volume(v), veh/h	9	191	201	15	447	67	45	0	0	105	0	60
Grp Sat Flow(s),veh/h/ln	1774	1770	1856	1774	1770	1583	1626	0	0	1774	0	1587
Q Serve(g_s), s	0.1	2.3	2.3	0.1	2.7	0.8	0.7	0.0	0.0	1.7	0.0	1.0
Cycle Q Clear(g_c), s	0.1	2.3	2.3	0.1	2.7	0.8	0.7	0.0	0.0	1.7	0.0	1.0
Prop In Lane	1.00		0.02	1.00		1.00	0.24		0.76	1.00		0.98
Lane Grp Cap(c), veh/h	6	611	641	6	1244	556	40	0	0	149	0	133
V/C Ratio(X)	1.48	0.31	0.31	2.47	0.36	0.12	1.12	0.00	0.00	0.71	0.00	0.45
Avail Cap(c_a), veh/h	485	2179	2286	485	4359	1950	445	0	0	668	0	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	7.0	7.0	14.6	7.0	6.4	14.1	0.0	0.0	13.0	0.0	12.5
Incr Delay (d2), s/veh	274.9	0.3	0.3	699.9	0.2	0.1	76.2	0.0	0.0	2.3	0.0	0.9
Initial Q Delay(d3),s/veh	83.7	0.0	0.0	7.2	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.2	1.2	2.0	1.3	0.4	1.2	0.0	0.0	0.9	0.0	0.5
LnGrp Delay(d),s/veh	373.2	7.3	7.3	721.8	7.2	6.5	94.7	0.0	0.0	15.3	0.0	13.4
LnGrp LOS	F	A	A	F	A	A	F			B		B
Approach Vol, veh/h		401			529			45			165	
Approach Delay, s/veh		15.6			27.4			94.7			14.6	
Approach LOS		B			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.8	14.3		4.7	4.0	14.1		6.5
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	8.5	34.3		8.5	8.5	34.3		11.5
Max Q Clear Time (g_c+I1), s	2.1	4.7		2.7	2.1	4.3		3.7
Green Ext Time (p_c), s	0.0	3.8		0.0	0.0	2.7		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	307	115	300	340	0	53	0	79	0	0	0
Future Volume (veh/h)	0	307	115	300	340	0	53	0	79	0	0	0
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	341	128	361	410	0	73	0	108	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.73	0.73	0.73	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	656	242	442	2182	0	166	0	285	156	56	0
Arrive On Green	0.00	0.26	0.25	0.25	0.62	0.00	0.09	0.00	0.14	0.00	0.00	0.00
Sat Flow, veh/h	972	2533	935	1774	3632	0	1774	0	1583	1280	1863	0
Grp Volume(v), veh/h	0	237	232	361	410	0	73	0	108	0	0	0
Grp Sat Flow(s),veh/h/ln	972	1770	1698	1774	1770	0	1774	0	1583	1280	1863	0
Q Serve(g_s), s	0.0	5.3	5.5	8.9	2.3	0.0	1.8	0.0	2.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.3	5.5	8.9	2.3	0.0	1.8	0.0	2.9	0.0	0.0	0.0
Prop In Lane	1.00		0.55	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	156	459	440	442	2182	0	166	0	285	156	56	0
V/C Ratio(X)	0.00	0.52	0.53	0.82	0.19	0.00	0.44	0.00	0.38	0.00	0.00	0.00
Avail Cap(c_a), veh/h	758	1555	1492	1767	7018	0	515	0	754	655	782	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	14.6	14.8	16.4	3.8	0.0	19.8	0.0	17.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.2	1.4	0.1	0.0	0.7	0.0	0.3	0.0	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	0.0	2.7	2.7	4.5	1.2	0.0	0.9	0.0	1.3	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	15.8	16.1	17.8	3.9	0.0	20.5	0.0	17.9	0.0	0.0	0.0
LnGrp LOS		B	B	B	A		C		B			
Approach Vol, veh/h		469			771			181			0	
Approach Delay, s/veh		15.9			10.4			18.9			0.0	
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	6.5	17.4		12.3		33.9	6.9	5.4
Change Period (Y+Rc), s	5.6	6.0		6.0		6.0	4.6	* 6
Max Green Setting (Gmax), s	45.4	40.0		20.0		91.0	11.4	* 17
Max Q Clear Time (g_c+I1), s	10.9	7.5		4.9		4.3	3.8	0.0
Green Ext Time (p_c), s	0.2	3.9		0.2		3.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	270	4	0	569
Future Vol, veh/h	0	3	270	4	0	569
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	74	74	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	365	5	0	694

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	185	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	826	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	826	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	826	-
HCM Lane V/C Ratio	-	-	0.005	-
HCM Control Delay (s)	-	-	9.4	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	398	0	102	58	334	0	0	269	431
Future Volume (veh/h)	0	0	0	398	0	102	58	334	0	0	269	431
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	1863	1863
Adj Flow Rate, veh/h				457	0	117	75	434	0	0	289	463
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	2	2
Cap, veh/h				517	0	231	107	1505	0	0	1094	489
Arrive On Green				0.15	0.00	0.15	0.06	0.43	0.00	0.00	0.31	0.31
Sat Flow, veh/h				3548	0	1583	1774	3632	0	0	3632	1583
Grp Volume(v), veh/h				457	0	117	75	434	0	0	289	463
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	1583
Q Serve(g_s), s				15.4	0.0	8.3	5.1	9.8	0.0	0.0	7.5	34.8
Cycle Q Clear(g_c), s				15.4	0.0	8.3	5.1	9.8	0.0	0.0	7.5	34.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				517	0	231	107	1505	0	0	1094	489
V/C Ratio(X)				0.88	0.00	0.51	0.70	0.29	0.00	0.00	0.26	0.95
Avail Cap(c_a), veh/h				872	0	389	364	1505	0	0	1450	649
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	0.99	0.99	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				51.1	0.0	48.1	56.2	23.0	0.0	0.0	31.7	41.1
Incr Delay (d2), s/veh				3.1	0.0	0.6	3.0	0.0	0.0	0.0	0.6	29.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.8	0.0	3.7	2.6	4.8	0.0	0.0	3.7	19.2
LnGrp Delay(d),s/veh				54.2	0.0	48.7	59.3	23.0	0.0	0.0	32.3	70.4
LnGrp LOS				D		D	E	C			C	E
Approach Vol, veh/h					574			509			752	
Approach Delay, s/veh					53.1			28.3			55.7	
Approach LOS					D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		58.7			14.2	44.5		23.6
Change Period (Y+Rc), s		6.8			6.8	* 6.8		5.8
Max Green Setting (Gmax), s		50.0			25.0	* 50		30.0
Max Q Clear Time (g_c+I1), s		11.8			7.1	36.8		17.4
Green Ext Time (p_c), s		1.2			0.1	0.9		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	47.3
HCM 2010 LOS	D

Notes



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	79	19	122	311	557	119
Future Volume (veh/h)	79	19	122	311	557	119
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	1863
Adj Flow Rate, veh/h	89	21	133	338	586	0
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, %	2	2	2	2	2	2
Cap, veh/h	220	101	223	1082	656	293
Arrive On Green	0.06	0.06	0.06	0.31	0.37	0.00
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583
Grp Volume(v), veh/h	89	21	133	338	586	0
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583
Q Serve(g_s), s	3.0	1.5	4.6	8.9	19.0	0.0
Cycle Q Clear(g_c), s	3.0	1.5	4.6	8.9	19.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	220	101	223	1082	656	293
V/C Ratio(X)	0.40	0.21	0.60	0.31	0.89	0.00
Avail Cap(c_a), veh/h	705	324	846	1450	1450	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.90	0.00
Uniform Delay (d), s/veh	54.9	54.2	55.5	32.5	37.3	0.0
Incr Delay (d2), s/veh	0.4	0.4	0.9	0.1	15.7	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	1.5	1.4	2.2	4.4	10.5	0.0
LnGrp Delay(d),s/veh	55.3	54.5	56.4	32.6	53.0	0.0
LnGrp LOS	E	D	E	C	D	
Approach Vol, veh/h	110			471	586	
Approach Delay, s/veh	55.2			39.3	53.0	
Approach LOS	E			D	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		44.1		13.6	14.7	29.4		
Change Period (Y+Rc), s		6.8		5.8	6.8	* 6.8		
Max Green Setting (Gmax), s		50.0		25.0	30.0	* 50		
Max Q Clear Time (g_c+I1), s		10.9		5.0	6.6	21.0		
Green Ext Time (p_c), s		0.9		0.2	0.2	1.6		

Intersection Summary	
HCM 2010 Ctrl Delay	47.7
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	17	816	26	14	1489
Future Vol, veh/h	0	17	816	26	14	1489
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	-	-	250	-
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	18	887	28	15	1618

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	458	0	0	915	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	550	-	-	741	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	550	-	-	741	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	550	741	-
HCM Lane V/C Ratio	-	-	0.034	0.021	-
HCM Control Delay (s)	-	-	11.8	10	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Montano de El Dorado — Existing Plus Project Conditions

SimTraffic Simulation Summary — PM PEAK

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	8985	8950	8783	9045	8896	8961	9083
Vehs Exited	8914	8772	8566	8979	8818	8869	8948
Starting Vehs	439	401	431	461	424	460	407
Ending Vehs	510	579	648	527	502	552	542
Travel Distance (mi)	5593	5498	5312	5647	5538	5541	5653
Travel Time (hr)	546.2	641.9	683.5	593.6	555.5	536.6	510.5
Total Delay (hr)	371.5	470.0	517.8	417.8	382.7	363.3	334.1
Total Stops	19070	20178	19209	19862	18605	18774	19143
Fuel Used (gal)	309.2	327.7	330.9	320.4	309.9	305.3	302.7

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	8862	8928	8990	8948
Vehs Exited	8878	8766	8949	8846
Starting Vehs	462	369	407	421
Ending Vehs	446	531	448	522
Travel Distance (mi)	5574	5574	5639	5557
Travel Time (hr)	523.6	512.2	524.8	562.8
Total Delay (hr)	349.3	337.9	349.1	389.4
Total Stops	18611	18563	18967	19098
Fuel Used (gal)	303.4	300.0	305.9	311.5

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2160	2193	2233	2169	2128	2209	2183
Vehs Exited	2170	2101	2161	2151	2147	2197	2124
Starting Vehs	439	401	431	461	424	460	407
Ending Vehs	429	493	503	479	405	472	466
Travel Distance (mi)	1380	1359	1383	1398	1378	1386	1357
Travel Time (hr)	113.2	119.0	117.6	125.0	110.6	112.9	109.6
Total Delay (hr)	70.3	76.5	74.4	81.9	67.8	69.4	67.1
Total Stops	4592	4482	4512	4734	4337	4375	4414
Fuel Used (gal)	71.5	72.0	72.4	74.7	70.8	71.2	70.1

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2160	2061	2235	2169
Vehs Exited	2167	2022	2118	2134
Starting Vehs	462	369	407	421
Ending Vehs	455	408	524	462
Travel Distance (mi)	1403	1306	1384	1373
Travel Time (hr)	117.5	100.1	114.4	114.0
Total Delay (hr)	73.5	59.3	71.1	71.1
Total Stops	4761	4115	4614	4489
Fuel Used (gal)	72.6	65.9	71.5	71.3

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2466	2466	2433	2456	2405	2367	2454
Vehs Exited	2353	2380	2358	2384	2283	2338	2418
Starting Vehs	429	493	503	479	405	472	466
Ending Vehs	542	579	578	551	527	501	502
Travel Distance (mi)	1455	1458	1452	1469	1379	1417	1509
Travel Time (hr)	137.8	153.1	148.4	151.8	131.1	121.4	135.7
Total Delay (hr)	92.2	107.8	103.3	105.8	87.8	76.9	88.7
Total Stops	5053	5309	4971	5329	4692	4673	5187
Fuel Used (gal)	79.8	82.9	81.1	82.5	75.2	75.0	80.7

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2482	2444	2419	2437
Vehs Exited	2403	2296	2403	2360
Starting Vehs	455	408	524	462
Ending Vehs	534	556	540	535
Travel Distance (mi)	1450	1459	1463	1451
Travel Time (hr)	135.6	129.3	147.3	139.2
Total Delay (hr)	90.2	83.7	101.6	93.8
Total Stops	5111	4869	5258	5049
Fuel Used (gal)	78.7	77.5	81.9	79.5

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2183	2030	2040	2206	2193	2191	2200
Vehs Exited	2230	2015	2067	2255	2195	2145	2228
Starting Vehs	542	579	578	551	527	501	502
Ending Vehs	495	594	551	502	525	547	474
Travel Distance (mi)	1380	1219	1188	1410	1402	1353	1379
Travel Time (hr)	145.6	175.4	179.4	157.5	152.8	142.2	123.7
Total Delay (hr)	102.4	137.2	142.3	113.5	109.3	100.0	80.6
Total Stops	4825	4351	4345	4913	4748	4669	4483
Fuel Used (gal)	78.5	80.2	80.4	82.1	81.2	77.1	73.7

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2116	2243	2170	2149
Vehs Exited	2251	2284	2300	2198
Starting Vehs	534	556	540	535
Ending Vehs	399	515	410	496
Travel Distance (mi)	1399	1409	1416	1355
Travel Time (hr)	138.7	138.1	136.1	148.9
Total Delay (hr)	95.2	94.1	92.1	106.7
Total Stops	4587	4831	4730	4648
Fuel Used (gal)	78.3	77.8	78.8	78.8

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2176	2261	2077	2214	2170	2194	2246
Vehs Exited	2161	2276	1980	2189	2193	2189	2178
Starting Vehs	495	594	551	502	525	547	474
Ending Vehs	510	579	648	527	502	552	542
Travel Distance (mi)	1378	1461	1289	1369	1379	1386	1408
Travel Time (hr)	149.5	194.3	238.1	159.3	161.0	160.2	141.5
Total Delay (hr)	106.5	148.6	197.7	116.5	117.8	117.0	97.7
Total Stops	4600	6036	5381	4886	4828	5057	5059
Fuel Used (gal)	79.5	92.5	97.0	81.1	82.8	82.0	78.3

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2104	2180	2166	2175
Vehs Exited	2057	2164	2128	2151
Starting Vehs	399	515	410	496
Ending Vehs	446	531	448	522
Travel Distance (mi)	1322	1401	1375	1377
Travel Time (hr)	131.7	144.7	127.0	160.7
Total Delay (hr)	90.4	100.8	84.3	117.7
Total Stops	4152	4748	4365	4913
Fuel Used (gal)	73.9	78.8	73.6	82.0

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	0.0
Denied Del/Veh (s)	0.1	0.1	0.2	0.2	0.3	0.3	0.0	0.0	0.0	5.4	3.0	1.7
Total Delay (hr)	0.4	0.4	0.3	0.6	0.2	1.4	1.7	7.5	0.3	2.4	4.6	0.1
Total Del/Veh (s)	42.8	45.9	10.8	37.3	40.6	17.7	49.1	20.4	15.8	51.3	20.3	8.6
Stop Delay (hr)	0.4	0.3	0.3	0.6	0.2	1.2	1.5	3.7	0.2	2.2	3.2	0.1
Stop Del/Veh (s)	39.7	39.7	9.8	35.0	35.4	15.5	42.2	10.1	8.7	47.0	14.1	7.2

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	1.0
Denied Del/Veh (s)	1.2
Total Delay (hr)	20.0
Total Del/Veh (s)	23.4
Stop Delay (hr)	13.8
Stop Del/Veh (s)	16.2

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	2.0	0.6	3.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.1	0.7	0.1	2.6	1.3	0.9	13.7	7.5	1.7	1.7	21.1	1.7
Total Del/Veh (s)	33.6	32.7	3.0	52.7	57.2	46.2	47.8	20.4	19.2	199.1	125.1	17.8
Stop Delay (hr)	1.1	0.6	0.0	2.4	1.2	0.9	10.8	4.1	1.0	1.6	18.9	1.1
Stop Del/Veh (s)	31.0	28.8	0.0	48.5	51.5	43.5	37.6	11.1	11.2	189.1	112.3	11.4

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.2
Total Delay (hr)	54.2
Total Del/Veh (s)	45.0
Stop Delay (hr)	43.6
Stop Del/Veh (s)	36.2

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.3	0.1	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	1.3	0.6	0.0	0.0	0.0	0.0	0.3
Total Delay (hr)	5.1	0.4	6.1	1.6	2.9	4.1	20.2
Total Del/Veh (s)	21.5	1.9	11.4	11.6	59.5	20.1	14.8
Stop Delay (hr)	3.3	0.0	1.4	0.4	2.4	1.7	9.2
Stop Del/Veh (s)	13.7	0.0	2.6	2.6	50.7	8.2	6.7

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.5	0.2	0.2	3.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	6.0	0.6	0.3	0.9	0.1	7.5	0.2	32.5	0.3	9.9	5.7	0.0
Total Del/Veh (s)	71.0	56.9	16.0	60.3	61.7	43.4	110.1	76.1	8.9	65.0	19.8	3.2
Stop Delay (hr)	5.6	0.5	0.3	0.9	0.1	7.1	0.2	23.9	0.3	8.5	3.8	0.0
Stop Del/Veh (s)	65.9	53.6	14.9	55.3	57.0	41.5	96.8	56.0	7.3	56.1	13.1	1.8

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.3
Total Delay (hr)	64.1
Total Del/Veh (s)	52.7
Stop Delay (hr)	51.2
Stop Del/Veh (s)	42.1

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Denied Delay (hr)	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Denied Del/Veh (s)	6.5	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.4
Total Delay (hr)	5.6	6.4	0.9	3.2	2.0	1.1	0.3	1.5	12.3	4.8	11.4	6.8
Total Del/Veh (s)	57.0	65.4	33.2	55.9	40.7	17.5	55.0	62.0	40.5	51.1	139.0	37.9
Stop Delay (hr)	4.9	5.6	0.8	3.0	1.7	1.0	0.3	1.4	10.7	4.8	10.6	4.7
Stop Del/Veh (s)	50.6	57.5	29.1	51.5	34.8	15.3	53.1	58.5	35.1	50.2	129.4	26.6

5: Latrobe Road & White Rock Road Performance by movement

Movement	SBR	All
Denied Delay (hr)	0.0	1.2
Denied Del/Veh (s)	0.0	1.1
Total Delay (hr)	0.6	56.9
Total Del/Veh (s)	9.4	49.6
Stop Delay (hr)	0.4	50.0
Stop Del/Veh (s)	6.6	43.5

6: Latrobe Rd & Driveway Performance by movement

Movement	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.2	3.5	0.1	0.2	0.2	4.2
Total Del/Veh (s)	9.7	8.3	11.2	19.9	0.7	5.9
Stop Delay (hr)	0.2	2.0	0.1	0.2	0.0	2.5
Stop Del/Veh (s)	9.4	4.7	8.1	17.8	0.0	3.4

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	3.9	0.1	0.1	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	36.5	28.8	36.7	0.1	0.1	0.1	27.2	12.6	9.9	0.0	0.0	0.0
Total Delay (hr)	11.6	0.3	0.3	0.2	0.1	0.1	0.1	8.6	0.1	0.3	2.8	0.5
Total Del/Veh (s)	110.5	124.5	113.6	72.8	88.9	30.6	86.3	25.3	29.9	82.3	13.0	13.1
Stop Delay (hr)	10.7	0.3	0.3	0.2	0.1	0.1	0.1	6.7	0.1	0.3	2.0	0.3
Stop Del/Veh (s)	102.1	114.4	106.3	70.5	85.6	29.4	81.4	19.8	26.5	79.3	9.1	9.1

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	All
Denied Delay (hr)	8.3
Denied Del/Veh (s)	11.7
Total Delay (hr)	25.1
Total Del/Veh (s)	34.8
Stop Delay (hr)	21.2
Stop Del/Veh (s)	29.5

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.3	4.4	27.6
Denied Del/Veh (s)	3.9	3.2	2.5	0.0	0.0	0.0	0.5	0.2	0.2	534.6	559.8	519.7
Total Delay (hr)	8.2	7.3	0.3	2.1	3.4	1.2	2.5	0.3	0.3	9.5	0.9	6.0
Total Del/Veh (s)	143.5	37.3	15.2	93.3	34.9	22.8	64.1	32.4	16.3	228.0	157.9	155.0
Stop Delay (hr)	7.8	5.7	0.2	2.0	2.8	1.1	2.3	0.3	0.3	9.3	0.9	5.8
Stop Del/Veh (s)	137.0	29.0	10.5	90.3	29.2	20.3	60.8	29.3	15.7	222.3	150.4	150.2

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	62.1
Denied Del/Veh (s)	99.3
Total Delay (hr)	42.0
Total Del/Veh (s)	69.9
Stop Delay (hr)	38.6
Stop Del/Veh (s)	64.2

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	3.3	0.1	0.2	3.8	0.5	0.5	3.7	0.7	0.7
Total Delay (hr)	0.6	4.8	1.0	0.5	2.8	0.2	1.0	0.3	0.2	1.4	0.4	0.2
Total Del/Veh (s)	49.9	24.4	21.5	46.3	22.7	8.9	32.1	30.6	11.3	29.0	26.3	13.2
Stop Delay (hr)	0.5	2.9	0.7	0.4	2.0	0.2	0.9	0.2	0.1	1.3	0.3	0.2
Stop Del/Veh (s)	43.9	14.6	13.6	41.9	16.4	7.4	29.2	26.8	10.0	26.1	22.6	12.1

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.7
Total Delay (hr)	13.3
Total Del/Veh (s)	24.5
Stop Delay (hr)	9.7
Stop Del/Veh (s)	17.9

Total Network Performance

Denied Delay (hr)	74.0
Denied Del/Veh (s)	29.3
Total Delay (hr)	315.3
Total Del/Veh (s)	121.2
Stop Delay (hr)	245.5
Stop Del/Veh (s)	94.3

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	38	108	96	90	255	165	261	295	285	124	318	265
Average Queue (ft)	3	42	40	29	107	77	126	146	141	87	145	117
95th Queue (ft)	20	87	74	70	201	142	248	281	275	145	308	255
Link Distance (ft)		932	932	482	482		774	774	774		309	309
Upstream Blk Time (%)											5	1
Queuing Penalty (veh)											0	0
Storage Bay Dist (ft)	150					250				100		
Storage Blk Time (%)	0	0					0			10	14	
Queuing Penalty (veh)	0	0					0			40	23	

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	L	LT	TR	L	L	T	T	TR	L	T
Maximum Queue (ft)	119	130	159	198	161	494	498	333	331	370	225	706
Average Queue (ft)	57	58	79	108	70	304	314	162	190	215	86	485
95th Queue (ft)	101	111	140	177	135	453	461	277	299	333	249	851
Link Distance (ft)	1228	1228		621		646	646	646	646	646		774
Upstream Blk Time (%)						0	0					7
Queuing Penalty (veh)						1	1					23
Storage Bay Dist (ft)			150		150						200	
Storage Blk Time (%)			0	3	0						0	68
Queuing Penalty (veh)			1	5	0						0	21

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	683	542	210
Average Queue (ft)	396	160	97
95th Queue (ft)	802	421	194
Link Distance (ft)	774	774	
Upstream Blk Time (%)	1	0	
Queuing Penalty (veh)	2	0	
Storage Bay Dist (ft)			200
Storage Blk Time (%)		0	1
Queuing Penalty (veh)		1	2

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	R	L	T	T	T	T
Maximum Queue (ft)	302	262	267	373	416	270	189	303	202	114	69
Average Queue (ft)	177	105	69	99	133	83	88	157	63	43	19
95th Queue (ft)	277	226	183	250	318	214	153	280	148	91	52
Link Distance (ft)	1211		572	572	572			646	646	646	646
Upstream Blk Time (%)				0	0				0		
Queuing Penalty (veh)				0	0				0		
Storage Bay Dist (ft)		450				275	575				
Storage Blk Time (%)					1	0					
Queuing Penalty (veh)					4	0					

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	T	T	T	R
Maximum Queue (ft)	288	338	67	129	125	345	347	209	746	798	784	299
Average Queue (ft)	143	205	20	44	71	199	198	13	406	478	519	44
95th Queue (ft)	273	304	54	93	153	312	311	86	701	770	799	178
Link Distance (ft)			778	778		526	526		839	839	839	839
Upstream Blk Time (%)									0	0	0	
Queuing Penalty (veh)									0	1	1	
Storage Bay Dist (ft)	350	350			100			225				
Storage Blk Time (%)	0	0			1	42			26			
Queuing Penalty (veh)	0	0			3	25			2			

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R
Maximum Queue (ft)	332	347	506	292	222	52
Average Queue (ft)	216	234	201	139	108	5
95th Queue (ft)	309	327	397	237	198	32
Link Distance (ft)			572	572	572	572
Upstream Blk Time (%)			1	0		
Queuing Penalty (veh)			3	0		
Storage Bay Dist (ft)	325	325				
Storage Blk Time (%)	0	1	1			
Queuing Penalty (veh)	1	3	7			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	UL	T	T
Maximum Queue (ft)	271	329	312	324	145	154	128	130	209	262	334	298
Average Queue (ft)	148	213	162	172	68	81	46	64	91	81	179	185
95th Queue (ft)	266	314	301	304	130	135	99	109	168	181	306	285
Link Distance (ft)			372	372				315	315		278	278
Upstream Blk Time (%)			3	2					0	0	2	1
Queuing Penalty (veh)			0	0					0	0	7	4
Storage Bay Dist (ft)	325	325			175	175	175			275		
Storage Blk Time (%)	0	0	4		0	0	0			0	2	
Queuing Penalty (veh)	0	1	13		0	0	0			0	2	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B25	B25	B25	SB	SB	SB	SB
Directions Served	T	T	R	T	T	T	T		L	L	T	T
Maximum Queue (ft)	294	355	61	220	266	265	283	97	214	249	535	495
Average Queue (ft)	189	200	48	49	67	63	71	17	129	145	225	182
95th Queue (ft)	292	390	59	228	272	318	342	162	243	269	584	420
Link Distance (ft)	278	278		243	243	468	468	468			839	839
Upstream Blk Time (%)	1	18		5	13	3	6	2			1	0
Queuing Penalty (veh)	3	70		37	101	17	30	9			3	0
Storage Bay Dist (ft)			25						225	225		
Storage Blk Time (%)		11	50						9	16	2	
Queuing Penalty (veh)		38	138						19	34	5	

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	241	137
Average Queue (ft)	23	24
95th Queue (ft)	173	90
Link Distance (ft)	839	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		250
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 6: Latrobe Rd & Driveway

Movement	WB	NB	NB	SB
Directions Served	R	T	TR	L
Maximum Queue (ft)	77	167	202	69
Average Queue (ft)	30	40	49	23
95th Queue (ft)	63	248	276	57
Link Distance (ft)	261	491	491	
Upstream Blk Time (%)		2	4	
Queuing Penalty (veh)		19	27	
Storage Bay Dist (ft)				250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	125	652	74	54	549	577	125	360	383
Average Queue (ft)	99	410	27	7	256	276	22	123	152
95th Queue (ft)	169	674	64	43	525	551	77	291	324
Link Distance (ft)		660	453		739	739		491	491
Upstream Blk Time (%)		11			3	5			
Queuing Penalty (veh)		0			0	0			
Storage Bay Dist (ft)	100			200			195		
Storage Blk Time (%)	9	67			14			4	
Queuing Penalty (veh)	20	128			1			1	

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	B20	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	T	L	TR	L	TR
Maximum Queue (ft)	105	355	372	135	144	254	267	214	214	125	75	456
Average Queue (ft)	103	319	292	42	88	131	161	24	111	46	73	422
95th Queue (ft)	109	394	409	129	152	237	270	134	191	97	79	483
Link Distance (ft)		315	315			198	198	1217	216	216		410
Upstream Blk Time (%)		26	9			4	7		1			88
Queuing Penalty (veh)		130	47			13	21		0			0
Storage Bay Dist (ft)	80			110	120						50	
Storage Blk Time (%)	78	9	32	0	10	13					85	7
Queuing Penalty (veh)	282	18	24	0	18	11					180	14

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	157	368	410	139	244	193	121	144	124	216
Average Queue (ft)	43	165	196	41	129	77	69	47	79	61
95th Queue (ft)	111	320	349	105	213	165	117	102	132	155
Link Distance (ft)		1217	1217		368	368		331		245
Upstream Blk Time (%)										0
Queuing Penalty (veh)										0
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)	0	11		0	13		4	1	7	1
Queuing Penalty (veh)	0	5		1	5		3	1	8	2

Network Summary

Network wide Queuing Penalty: 1681

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	180	21	3	1067	606	92
Future Volume (veh/h)	180	21	3	1067	606	92
Number	3	18	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	243	28	4	1317	631	96
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.74	0.74	0.81	0.81	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	321	286	10	2179	1630	248
Arrive On Green	0.18	0.18	0.01	0.62	0.53	0.53
Sat Flow, veh/h	1774	1583	1774	3632	3175	468
Grp Volume(v), veh/h	243	28	4	1317	362	365
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1780
Q Serve(g_s), s	6.4	0.7	0.1	11.2	5.9	6.0
Cycle Q Clear(g_c), s	6.4	0.7	0.1	11.2	5.9	6.0
Prop In Lane	1.00	1.00	1.00			0.26
Lane Grp Cap(c), veh/h	321	286	10	2179	936	942
V/C Ratio(X)	0.76	0.10	0.42	0.60	0.39	0.39
Avail Cap(c_a), veh/h	903	806	614	3242	1621	1631
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	19.1	16.8	24.4	5.8	6.9	6.9
Incr Delay (d2), s/veh	3.7	0.1	10.4	0.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.3	0.1	5.4	2.9	2.9
LnGrp Delay(d),s/veh	22.8	16.9	34.7	6.2	7.2	7.2
LnGrp LOS	C	B	C	A	A	A
Approach Vol, veh/h	271			1321	727	
Approach Delay, s/veh	22.2			6.2	7.2	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		36.2			4.3	32.0		12.9
Change Period (Y+Rc), s		6.0			4.0	6.0		4.0
Max Green Setting (Gmax), s		45.0			17.0	45.0		25.0
Max Q Clear Time (g_c+I1), s		13.2			2.1	8.0		8.4
Green Ext Time (p_c), s		17.1			0.0	7.7		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	34	9	3	17	124	3	527	3	178	345	104
Future Volume (veh/h)	408	34	9	3	17	124	3	527	3	178	345	104
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	537	45	12	4	22	163	4	659	4	207	401	121
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.80	0.80	0.80	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	313	250	67	37	203	205	10	879	5	238	1002	299
Arrive On Green	0.18	0.18	0.18	0.13	0.13	0.13	0.01	0.24	0.24	0.13	0.37	0.37
Sat Flow, veh/h	1774	1418	378	284	1564	1583	1774	3607	22	1774	2688	802
Grp Volume(v), veh/h	537	0	57	26	0	163	4	323	340	207	262	260
Grp Sat Flow(s),veh/h/ln	1774	0	1796	1849	0	1583	1774	1770	1859	1774	1770	1721
Q Serve(g_s), s	10.5	0.0	1.6	0.7	0.0	5.9	0.1	10.1	10.1	6.8	6.5	6.6
Cycle Q Clear(g_c), s	10.5	0.0	1.6	0.7	0.0	5.9	0.1	10.1	10.1	6.8	6.5	6.6
Prop In Lane	1.00		0.21	0.15		1.00	1.00		0.01	1.00		0.47
Lane Grp Cap(c), veh/h	313	0	317	240	0	205	10	432	453	238	660	642
V/C Ratio(X)	1.72	0.00	0.18	0.11	0.00	0.79	0.42	0.75	0.75	0.87	0.40	0.40
Avail Cap(c_a), veh/h	313	0	317	311	0	266	238	586	615	238	660	642
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	0.0	20.9	22.9	0.0	25.1	29.5	20.8	20.8	25.2	13.7	13.8
Incr Delay (d2), s/veh	335.5	0.0	0.3	0.2	0.0	11.8	26.7	3.6	3.4	27.1	0.4	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	34.2	0.0	0.8	0.4	0.0	3.2	0.1	5.3	5.5	5.1	3.2	3.2
LnGrp Delay(d),s/veh	360.0	0.0	21.1	23.1	0.0	37.0	56.2	24.4	24.3	52.4	14.1	14.2
LnGrp LOS	F		C	C		D	E	C	C	D	B	B
Approach Vol, veh/h		594			189			667			729	
Approach Delay, s/veh		327.5			35.0			24.5			25.0	
Approach LOS		F			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	12.0	19.8		12.7	4.3	27.5		15.0
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	8.0	19.7		10.0	8.0	19.7		10.5
Max Q Clear Time (g_c+I1), s	10.8	12.1		7.9	2.1	8.6		12.5
Green Ext Time (p_c), s	0.0	2.5		0.1	0.0	2.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	108.2
HCM 2010 LOS	F

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	487	16	50	596	87	11	2	39	45	1	18
Future Volume (veh/h)	36	487	16	50	596	87	11	2	39	45	1	18
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	601	20	57	685	100	16	3	56	64	1	26
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.87	0.87	0.87	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	1441	48	61	1490	667	16	3	55	94	3	81
Arrive On Green	0.03	0.41	0.36	0.03	0.42	0.42	0.04	0.04	0.06	0.05	0.05	0.07
Sat Flow, veh/h	1774	3496	116	1774	3539	1583	348	65	1217	1774	59	1533
Grp Volume(v), veh/h	44	304	317	57	685	100	75	0	0	64	0	27
Grp Sat Flow(s),veh/h/ln	1774	1770	1842	1774	1770	1583	1631	0	0	1774	0	1592
Q Serve(g_s), s	0.9	4.3	4.3	1.1	4.9	1.4	1.6	0.0	0.0	1.2	0.0	0.6
Cycle Q Clear(g_c), s	0.9	4.3	4.3	1.1	4.9	1.4	1.6	0.0	0.0	1.2	0.0	0.6
Prop In Lane	1.00		0.06	1.00		1.00	0.21		0.75	1.00		0.96
Lane Grp Cap(c), veh/h	45	729	759	61	1490	667	73	0	0	94	0	84
V/C Ratio(X)	0.97	0.42	0.42	0.94	0.46	0.15	1.03	0.00	0.00	0.68	0.00	0.32
Avail Cap(c_a), veh/h	404	1815	1889	404	3629	1624	372	0	0	556	0	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	7.3	7.4	16.9	7.3	6.3	16.6	0.0	0.0	16.3	0.0	15.8
Incr Delay (d2), s/veh	31.6	0.4	0.4	20.2	0.2	0.1	36.4	0.0	0.0	3.3	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	2.2	0.9	2.4	0.6	1.4	0.0	0.0	0.7	0.0	0.3
LnGrp Delay(d),s/veh	48.7	7.8	7.8	37.1	7.5	6.4	53.3	0.0	0.0	19.6	0.0	16.6
LnGrp LOS	D	A	A	D	A	A	F			B		B
Approach Vol, veh/h		665			842			75			91	
Approach Delay, s/veh		10.5			9.4			53.3			18.7	
Approach LOS		B			A			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	18.8		5.6	5.2	18.5		5.9
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	8.5	34.3		8.5	8.5	34.3		11.5
Max Q Clear Time (g_c+I1), s	2.9	6.9		3.6	3.1	6.3		3.2
Green Ext Time (p_c), s	0.0	6.2		0.1	0.0	4.6		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	544	71	99	380	0	238	0	239	0	0	0
Future Volume (veh/h)	0	544	71	99	380	0	238	0	239	0	0	0
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	604	79	119	458	0	326	0	327	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.73	0.73	0.73	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	1042	136	173	1872	0	440	0	447	145	4	0
Arrive On Green	0.00	0.33	0.32	0.10	0.53	0.00	0.25	0.00	0.24	0.00	0.00	0.00
Sat Flow, veh/h	930	3149	411	1774	3632	0	1774	0	1583	1049	1863	0
Grp Volume(v), veh/h	0	339	344	119	458	0	326	0	327	0	0	0
Grp Sat Flow(s),veh/h/ln	930	1770	1790	1774	1770	0	1774	0	1583	1049	1863	0
Q Serve(g_s), s	0.0	7.9	7.9	3.2	3.5	0.0	8.4	0.0	9.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.9	7.9	3.2	3.5	0.0	8.4	0.0	9.5	0.0	0.0	0.0
Prop In Lane	1.00		0.23	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	145	585	592	173	1872	0	440	0	447	145	4	0
V/C Ratio(X)	0.00	0.58	0.58	0.69	0.24	0.00	0.74	0.00	0.73	0.00	0.00	0.00
Avail Cap(c_a), veh/h	595	1443	1460	1639	6512	0	478	0	700	572	726	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)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.8	13.9	21.7	6.3	0.0	17.3	0.0	17.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.1	1.8	0.1	0.0	4.7	0.0	0.9	0.0	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	0.0	4.0	4.1	1.7	1.7	0.0	4.6	0.0	4.3	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	14.9	15.0	23.5	6.4	0.0	21.9	0.0	18.0	0.0	0.0	0.0
LnGrp LOS		B	B	C	A		C		B			
Approach Vol, veh/h		683			577			653			0	
Approach Delay, s/veh		15.0			10.0			20.0			0.0	
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	9.9	21.9		18.1		31.7	14.9	3.1
Change Period (Y+Rc), s	5.6	6.0		6.0		6.0	4.6	* 6
Max Green Setting (Gmax), s	45.4	40.0		20.0		91.0	11.4	* 17
Max Q Clear Time (g_c+I1), s	5.2	9.9		11.5		5.5	10.4	0.0
Green Ext Time (p_c), s	0.0	5.9		0.6		4.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	671	0	0	332
Future Vol, veh/h	0	0	671	0	0	332
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	729	0	0	405

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	365	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	632	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	632	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	262	0	151	52	904	0	0	202	170
Future Volume (veh/h)	0	0	0	262	0	151	52	904	0	0	202	170
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	1863	1863
Adj Flow Rate, veh/h				291	0	168	56	972	0	0	232	195
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, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				436	0	195	185	1070	0	0	503	225
Arrive On Green				0.12	0.00	0.12	0.10	0.30	0.00	0.00	0.14	0.14
Sat Flow, veh/h				3548	0	1583	1774	3632	0	0	3632	1583
Grp Volume(v), veh/h				291	0	168	56	972	0	0	232	195
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	1583
Q Serve(g_s), s				9.6	0.0	12.7	3.6	32.2	0.0	0.0	7.3	14.7
Cycle Q Clear(g_c), s				9.6	0.0	12.7	3.6	32.2	0.0	0.0	7.3	14.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				436	0	195	185	1070	0	0	503	225
V/C Ratio(X)				0.67	0.00	0.86	0.30	0.91	0.00	0.00	0.46	0.87
Avail Cap(c_a), veh/h				872	0	389	364	1450	0	0	1450	649
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	0.86	0.86	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				51.1	0.0	52.5	50.5	40.9	0.0	0.0	48.0	51.2
Incr Delay (d2), s/veh				0.7	0.0	4.4	0.3	5.0	0.0	0.0	3.0	33.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	0.0	5.8	1.8	16.5	0.0	0.0	3.8	8.5
LnGrp Delay(d),s/veh				51.8	0.0	56.9	50.8	46.0	0.0	0.0	51.1	84.6
LnGrp LOS				D		E	D	D			D	F
Approach Vol, veh/h					459			1028			427	
Approach Delay, s/veh					53.6			46.2			66.4	
Approach LOS					D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		43.7			19.6	24.1		20.8
Change Period (Y+Rc), s		6.8			6.8	* 6.8		5.8
Max Green Setting (Gmax), s		50.0			25.0	* 50		30.0
Max Q Clear Time (g_c+I1), s		34.2			5.6	16.7		14.7
Green Ext Time (p_c), s		2.7			0.0	0.6		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	52.5
HCM 2010 LOS	D

Notes



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	433	46	321	508	378	87
Future Volume (veh/h)	433	46	321	508	378	87
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	1863
Adj Flow Rate, veh/h	487	52	349	552	398	0
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, %	2	2	2	2	2	2
Cap, veh/h	552	254	415	1090	466	209
Arrive On Green	0.16	0.16	0.12	0.31	0.26	0.00
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583
Grp Volume(v), veh/h	487	52	349	552	398	0
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583
Q Serve(g_s), s	16.9	3.5	12.1	15.6	13.0	0.0
Cycle Q Clear(g_c), s	16.9	3.5	12.1	15.6	13.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	552	254	415	1090	466	209
V/C Ratio(X)	0.88	0.20	0.84	0.51	0.85	0.00
Avail Cap(c_a), veh/h	705	324	846	1450	1450	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.95	0.00
Uniform Delay (d), s/veh	50.1	44.5	52.5	34.6	43.8	0.0
Incr Delay (d2), s/veh	9.0	0.1	1.8	0.1	16.9	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	8.7	3.2	5.9	7.6	7.4	0.0
LnGrp Delay(d),s/veh	59.1	44.6	54.3	34.7	60.7	0.0
LnGrp LOS	E	D	D	C	E	
Approach Vol, veh/h	539			901	398	
Approach Delay, s/veh	57.7			42.3	60.7	
Approach LOS	E			D	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		44.4		25.4	21.5	22.9		
Change Period (Y+Rc), s		6.8		5.8	6.8	* 6.8		
Max Green Setting (Gmax), s		50.0		25.0	30.0	* 50		
Max Q Clear Time (g_c+I1), s		17.6		18.9	14.1	15.0		
Green Ext Time (p_c), s		1.5		0.7	0.6	1.0		

Intersection Summary	
HCM 2010 Ctrl Delay	50.8
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	64	1468	45	37	909
Future Vol, veh/h	0	64	1468	45	37	909
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	-	-	250	-
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	70	1596	49	40	988

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	823	0	0	1645	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	317	-	-	389	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	317	-	-	389	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.5	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	317	389	-
HCM Lane V/C Ratio	-	-	0.219	0.103	-
HCM Control Delay (s)	-	-	19.5	15.3	-
HCM Lane LOS	-	-	C	C	-
HCM 95th %tile Q(veh)	-	-	0.8	0.3	-

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	ExistingPP_AM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	9/13/2018
Analysis Year:	2018
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 1: NB

LOS and Performance Measures

Flow rate, v_p	1013	pc/h/ln
Capacity, C	4192	pc/h/ln
Speed, S	54.8	mi/h
Density, D	9.2	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	1.0	access points/mi
Demand Volume, V	834	veh/h
Peak Hour Factor, PHF	0.84	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	55.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	54.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	54.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	54.8	mi/h
Capacity, c	2096	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	2096	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	834	veh/h
Peak Hour Factor, PHF	0.84	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	506	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	506	pc/h/ln
Free-Flow Speed, FFS	55.0	mi/h
Capacity, c	2096	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	54.8	mi/h
Density, D	9.2	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	834	veh
Peak Hour Factor, PHF	0.84	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	496	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.82	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:12:45

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	ExistingPP_AM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	9/13/2018
Analysis Year:	2018
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 2: SB

LOS and Performance Measures

Flow rate, v_p	1788	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	44.8	mi/h
Density, D	20.0	pc/mi/ln
Level of Service, LOS	C	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	0.3	access points/mi
Demand Volume, V	1489	veh/h
Peak Hour Factor, PHF	0.85	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	44.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	44.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	44.8	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1489	veh/h
Peak Hour Factor, PHF	0.85	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	894	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	894	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	44.8	mi/h
Density, D	20.0	pc/mi/ln
Level of service, LOS	C	

Bicycle Level of Service

Hourly Directional Volume, V	1489	veh
Peak Hour Factor, PHF	0.85	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	876	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	3.10	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:11:55

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	ExistingPP_AM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	9/13/2018
Analysis Year:	2018
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	430	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.2	mi/h
Density, D	5.0	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	329	veh/h
Peak Hour Factor, PHF	0.78	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	329	veh/h
Peak Hour Factor, PHF	0.78	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	215	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	215	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	5.0	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	329	veh
Peak Hour Factor, PHF	0.78	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	211	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.38	
Bicycle LOS	B	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:14:25

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	ExistingPP_AM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	9/13/2018
Analysis Year:	2018
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	733	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.4	mi/h
Density, D	8.4	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	668	veh/h
Peak Hour Factor, PHF	0.93	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	668	veh/h
Peak Hour Factor, PHF	0.93	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	366	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	366	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	8.4	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	668	veh
Peak Hour Factor, PHF	0.93	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	359	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.65	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:14:47

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	AM EB
Highway	White Rock Road
From/To	Post to Valley View
Jurisdiction	
Analysis Year	Existing plus Project 2015
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.86	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 294 veh/h
Opposing direction volume, Vo 768 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.1		1.3	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.978		0.994	
Grade adj. factor,(note-1) fg	0.86		1.00	
Directional flow rate,(note-2) vi	406	pc/h	898	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	1.2	mi/h
Average travel speed, ATSd	31.5	mi/h
Percent Free Flow Speed, PFFS	73.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.6		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.988		1.000	
Grade adjustment factor,(note-1) fg	0.87		1.00	
Directional flow rate,(note-2) vi	398	pc/h	893	pc/h
Base percent time-spent-following,(note-4) BPTSFd	49.3	%		
Adjustment for no-passing zones, fnp	26.3			
Percent time-spent-following, PTSFd	57.4	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.24	
Peak 15-min vehicle-miles of travel, VMT15	26	veh-mi
Peak-hour vehicle-miles of travel, VMT60	88	veh-mi
Peak 15-min total travel time, TT15	0.8	veh-h
Capacity from ATS, CdATS	1690	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1690	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	31.5	mi/h
Percent time-spent-following, PTSFd (from above)	57.4	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	341.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.21
Bicycle LOS	B

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	AM WB
Highway	White Rock Road
From/To	Valley View to Post
Jurisdiction	
Analysis Year	Existing plus Project 2015
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.93	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 768 veh/h
Opposing direction volume, Vo 294 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.4
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.998	0.992
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	827 pc/h	319 pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	3.2	mi/h
Average travel speed, ATSd	30.6	mi/h
Percent Free Flow Speed, PFFS	71.7	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.998
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	826 pc/h	317 pc/h
Base percent time-spent-following,(note-4) BPTSFd	66.0 %	
Adjustment for no-passing zones, fnp	28.7	
Percent time-spent-following, PTSFd	86.7 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.49	
Peak 15-min vehicle-miles of travel, VMT15	62	veh-mi
Peak-hour vehicle-miles of travel, VMT60	230	veh-mi
Peak 15-min total travel time, TT15	2.0	veh-h
Capacity from ATS, CdATS	1686	veh/h
Capacity from PTSF, CdPTSF	1697	veh/h
Directional Capacity	1686	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	30.6	mi/h
Percent time-spent-following, PTSFd (from above)	86.7	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	825.8
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.65
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	ExistingPP_PM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	9/13/2018
Analysis Year:	2018
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 1: NB

LOS and Performance Measures

Flow rate, v_p	1698	pc/h/ln
Capacity, C	4192	pc/h/ln
Speed, S	54.8	mi/h
Density, D	15.5	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1531	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	55.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	54.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	54.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	54.8	mi/h
Capacity, c	2096	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	2096	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1531	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	849	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	849	pc/h/ln
Free-Flow Speed, FFS	55.0	mi/h
Capacity, c	2096	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	54.8	mi/h
Density, D	15.5	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1531	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	832	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	3.08	
Bicycle LOS	C	

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HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	ExistingPP_PM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	9/13/2018
Analysis Year:	2018
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 2: SB

LOS and Performance Measures

Flow rate, v_p	1019	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	44.8	mi/h
Density, D	11.4	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	0.3	access points/mi
Demand Volume, V	909	veh/h
Peak Hour Factor, PHF	0.91	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	44.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	44.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	44.8	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	909	veh/h
Peak Hour Factor, PHF	0.91	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	510	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	510	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	44.8	mi/h
Density, D	11.4	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	909	veh
Peak Hour Factor, PHF	0.91	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	499	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.82	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:16:48

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	ExistingPP_PM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	9/13/2018
Analysis Year:	2018
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	1146	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.2	mi/h
Density, D	13.3	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	977	veh/h
Peak Hour Factor, PHF	0.87	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	977	veh/h
Peak Hour Factor, PHF	0.87	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	573	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	573	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	13.3	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	977	veh
Peak Hour Factor, PHF	0.87	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	561	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.88	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:18:37

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	ExistingPP_PM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	9/13/2018
Analysis Year:	2018
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	690	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.4	mi/h
Density, D	7.9	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	636	veh/h
Peak Hour Factor, PHF	0.94	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	636	veh/h
Peak Hour Factor, PHF	0.94	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	345	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	345	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	7.9	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	636	veh
Peak Hour Factor, PHF	0.94	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	338	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.62	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:17:50

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	PM EB
Highway	White Rock Road
From/To	Post to Valley View
Jurisdiction	
Analysis Year	Existing plus Project 2015
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.89	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 953 veh/h
Opposing direction volume, Vo 592 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	1.000		0.998	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1071	pc/h	667	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	1.6	mi/h
Average travel speed, ATSd	27.7	mi/h
Percent Free Flow Speed, PFFS	64.7	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	1071 pc/h	665 pc/h
Base percent time-spent-following,(note-4) BPTSFd	77.0 %	
Adjustment for no-passing zones, fnp	21.1	
Percent time-spent-following, PTSFd	90.0 %	

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.63	
Peak 15-min vehicle-miles of travel, VMT15	80	veh-mi
Peak-hour vehicle-miles of travel, VMT60	286	veh-mi
Peak 15-min total travel time, TT15	2.9	veh-h
Capacity from ATS, CdATS	1697	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1697	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	27.7	mi/h
Percent time-spent-following, PTSFd (from above)	90.0	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	1070.8
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.79
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	PM WB
Highway	White Rock Road
From/To	Valley View to Post
Jurisdiction	
Analysis Year	Existing plus Project 2015
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.95	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 592 veh/h
Opposing direction volume, Vo 953 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.998		1.000	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	624	pc/h	1003	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	29.0	mi/h
Percent Free Flow Speed, PFFS	67.9	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	623 pc/h	1003 pc/h
Base percent time-spent-following,(note-4) BPTSFd	63.8 %	
Adjustment for no-passing zones, fnp	22.8	
Percent time-spent-following, PTSFd	72.5 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.37	
Peak 15-min vehicle-miles of travel, VMT15	47	veh-mi
Peak-hour vehicle-miles of travel, VMT60	178	veh-mi
Peak 15-min total travel time, TT15	1.6	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.0	mi/h
Percent time-spent-following, PTSFd (from above)	72.5	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	623.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.51
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

	Segment Inputs				Exisiting plus Project Conditions												
					Flow Inputs		AM LOS Performance Measures						PM LOS Performance Measures				
		Length	Number of Lanes	Interchange Density	AM Peak	PM Peak	V_p	FFS		S	D	LOS	V_p	FFS		S	D	LOS
		(ft)	(N)	(I/mi)	(veh/h)	(veh/h)	(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)		(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)	
EB	West of Latrobe Rd SB Off Ramp	6690	3	0.33	2,680	4,425	1000.14	74.12	75	75	13.335	B	1651.359	74.12	75	70.3034	23.5	C
EB	Latrobe Rd NB Off Ramp to Latrobe Rd On Ramp	1990	3	0.50	1,274	2,884	475.442	73.6	75	71.954	6.6076	A	1076.275	73.6	75	74.9356	14.363	B
EB	Silva Valley Pkwy SB/NB Off Ramp to Silva Valley Pkwy NB/SB On Ramp	2375	3	0.50	1,555	3,082	580.308	73.6	75	73.0501	7.944	A	1150.167	73.6	75	74.7504	15.387	B
EB	East of Silva Valley Pkwy NB/SB On Ramp	3400	3	0.50	1,796	3,490	670.246	73.6	75	73.7963	9.0824	A	1302.428	73.6	75	73.9875	17.603	B
WB	Silva Valley Pkwy NB/SB Off Ramp to Silva Valley Pkwy SB/NB On Ramp	2350	2	0.50	2,648	1,745	1482.3	73.6	75	72.4249	20.467	C	976.8207	73.6	75	74.9941	13.025	B
WB	El Dorado Hills Blvd Off Ramp to El Dorado Hills Blvd On Ramp	3565	2	0.50	2,531	1,634	1416.81	73.6	75	73.0768	19.388	C	914.6848	73.6	75	74.9194	12.209	B
WB	West of El Dorado Hills Blvd On Ramp	5890	2	0.33	3,783	3,061	2117.66	74.12	75	61.1718	34.618	D	1713.495	74.12	75	69.3645	24.703	C
Univeral	Weaving Segments	2000	3	0.50	1,653	3,561	616.88	73.6	75	73.3751	8.4072	A						
		3425	3	0.50	3,137	1,967	1170.69	73.6	75	74.6775	15.677	B	734.0616	73.6	75	74.2171	9.8907	A
PHF	0.92																	
(P_t)	6%																	
f_{HV}	0.970873786																	

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

	Segment Inputs				Existing plus project Conditions																												
					AM Flow Inputs			AM LOS Performance Measures														PM Flow Inputs			PM LOS Performance Measures										
		Number of Lanes	Number of Ramp Lanes	Length of Acceleration Lane (L_A)	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	v_F/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	v_F/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
		(N)		(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/h)	(pc/h)			(pc/h/ln)						(pc/mi/ln)		(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/hr)	(pc/h)			(pc/h/ln)						(pc/mi/ln)	
EB	Latrobe Rd On Ramp	3	1	110	1653	1274	379	1851	1426	424	41	0.5806	828.1	7200	299	621	828	0.257	14.359	B	3561	2884	677	3987	3229	758	92	0.5806	1874.6	7200	677	1406	1875	0.5537	24.97	C
	Silva Valley On Ramp	3	1	550	1796	1555	241	2011	1741	270	50	0.5929	1032.2	7200	354	774	1032	0.2793	12.058	B	3490	3082	408	3907	3451	457	99	0.5929	2045.8	7200	702	1534	2046	0.5427	21.337	C
WB	El Dorado Hills Blvd On Ramp	2	1	795	3783	2531	1252	4235	2834	1402	81	1	2833.6	4800	0	2125	2834	0.8824	32.881	D	3061	1634	1427	3427	1829	1598	52	1	1829.4	4800	0	1372	1829	0.714	26.486	C
	Silva Valley On Ramp	2	1	800	3137	2648	489	3512	2965	547	85	1	2964.6	4800	0	2223	2965	0.7317	27.601	C	1967	1745	222	2202	1954	249	56	1	1953.6	4800	0	1465	1954	0.4588	17.522	B

Univeral Inputs:

Length	1500	(ft)
S_{hv}	70	(mi/h)
S_{FR}	35	(mi/h)
PHF	0.92	
(P_T)	6%	
f_{HV}	0.970873786	

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

					Existing plus Project Conditions																								
Segment Inputs					AM Flow Inputs			AM LOS Performance Measures											PM Flow Inputs			PM LOS Performance Measures										
		Number of Lanes	Number of Ramp Lanes	L_{EQ}	Length of Deceleration Lane (L_D)	Downstream Volume	Upstream Volume	Ramp Volume	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
		(N)		(ft)	(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)		(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)	
EB	Latrobe SB Off Ramp	3	1	574	140	1582	2680	1098	344.826	3000.4	1229.3	0.436	2001.5	7200	499	1501	2002	0.4167	20.205	C	3588	4425	837	788.174	4954.1	937.08	0.436	2688.5	7200	1133	2016	2688	0.6881	26.113	C
	Latrobe NB Off Ramp	3	1	-	140	1274	1582	308	-	1771.2	344.83	0.6999	1343.1	7200	428	1007	1343	0.246	14.542	B	2884	3588	704	-	4017	788.17	0.6233	2800.8	7200	1216	2101	2801	0.5579	27.079	C
	Silva Valley SB Off Ramp	3	1	-	150	1555	1653	98	-	1850.6	109.72	0.7087	1343.5	7200	254	1008	1343	0.257	14.456	B	3082	3561	479	-	3986.8	536.27	0.6357	2729.6	7200	1257	2047	2730	0.5537	26.377	C
WB	El Dorado Hills Blvd Off Ramp	3	1	-	190	2531	3137	606	-	3512.1	678.46	0.641	2494.8	7200	1017	1871	2495	0.4878	23.997	C	1634	1967	333	-	2202.2	372.82	0.6878	1631	7200	571	1223	1631	0.3059	16.569	B
	Silva Valley NB Off Ramp	3	1	-	150	2648	3148	500	-	3524.4	559.78	0.6461	2475.3	7200	1049	1857	2475	0.4895	24.19	C	1745	2158	413	-	2416	462.38	0.6783	1787.6	7200	628	1341	1788	0.3356	18.275	B

Univeral Inputs:

Leng	1500	(ft)
S_{FF}	70	(mi/h)
S_{FR}	35	(mi/h)
PHF	0.92	
(P_T)	6%	
f_{HV}	0.970873786	

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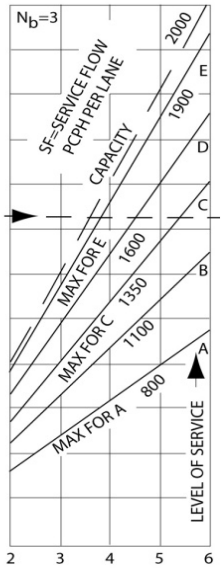
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

EB US-50, East of Latrobe Rd On Ramp, Existing plus Project Conditons (PM)

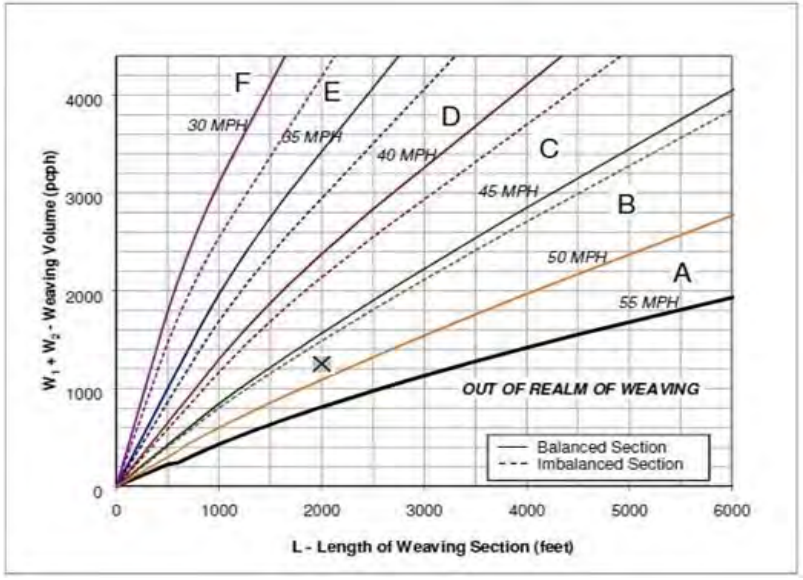
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS



Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	3,561	Volume (vph)	677	Volume (vph)	479
Truck Percentage	6%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,668	Volume (pcph)	684	Volume (pcph)	484

W1 + W2	1,168
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	49.0
Weaving Intensity Factor (k)	1.60
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	990
Level of Service (LOS)	B



Appendix D

Analysis Worksheets for
Near-Term (2025) Conditions

Montano de El Dorado — Near Term (2025) Conditions

SimTraffic Simulation Summary — AM Peak

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	8479	8536	8714	8496	8707	8473	8618
Vehs Exited	8417	8487	8597	8418	8577	8301	8493
Starting Vehs	412	426	406	428	413	427	432
Ending Vehs	474	475	523	506	543	599	557
Travel Distance (mi)	5627	5697	5718	5554	5673	5551	5635
Travel Time (hr)	772.7	867.4	824.5	857.1	781.1	861.3	847.0
Total Delay (hr)	599.3	692.3	648.6	686.1	606.6	690.3	673.2
Total Stops	16235	17013	17011	17198	18872	17428	18793
Fuel Used (gal)	356.3	380.9	371.0	374.6	361.1	374.7	374.7

Summary of All Intervals

097217001\03 Analysis\Synchro Files\A. September 2018 Analysis\SimTraffic\NearTermNP_AM_Simtraffic

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	8468	8432	8546	8543
Vehs Exited	8387	8317	8368	8437
Starting Vehs	363	369	371	406
Ending Vehs	444	484	549	548	518
Travel Distance (mi)	5624	5586	5554	5638	5623
Travel Time (hr)	881.7	741.9	747.4	938.7	829.2
Total Delay (hr)	709.0	570.0	577.3	765.2	656.2
Total Stops	17400	15854	17759	18227	17433
Fuel Used (gal)	382.0	348.7	349.3	394.8	369.8

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2150	2185	2190	2124	2126	2116	2101
Vehs Exited	2126	2118	2149	2091	2093	2099	2070
Starting Vehs	412	426	406	428	413	427	432
Ending Vehs	436	493	447	461	446	444	463
Travel Distance (mi)	1428	1440	1416	1385	1383	1377	1392
Travel Time (hr)	128.5	145.6	133.0	133.1	124.5	120.0	144.7
Total Delay (hr)	84.5	101.3	89.2	90.7	82.2	77.6	101.7
Total Stops	4107	4328	3903	3903	4044	4001	4119
Fuel Used (gal)	74.6	79.3	75.6	74.8	73.1	71.6	77.4

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	8	9	Avg
Vehs Entered	2113	2190	2138
Vehs Exited	2001	2112	2091
Starting Vehs	363	369	406
Ending Vehs	475	447	453
Travel Distance (mi)	1372	1417	1397
Travel Time (hr)	138.2	113.4	132.7
Total Delay (hr)	95.9	70.1	89.7
Total Stops	4233	3904	4086
Fuel Used (gal)	75.6	71.3	75.1

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2119	2161	2232	2154	2342	2069	2286
Vehs Exited	2099	2212	2166	2143	2200	2038	2201
Starting Vehs	436	493	447	461	446	444	463
Ending Vehs	456	442	513	472	588	475	548
Travel Distance (mi)	1402	1476	1460	1424	1486	1373	1505
Travel Time (hr)	175.9	203.0	180.9	205.2	176.3	196.9	191.3
Total Delay (hr)	132.5	157.8	135.9	161.3	130.4	154.4	145.1
Total Stops	3861	4267	4223	4495	5201	4275	4704
Fuel Used (gal)	85.3	93.7	87.7	92.7	87.9	89.0	92.3

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

097217001\03 Analysis Files\Synchro Files\A. September 2018 Analysis\SimTraffic\NearTermNP_AM_Simtraffic

Run Number	7	8	9	Avg
Vehs Entered	2199	2162	2243	2179	2195
Vehs Exited	2190	2137	2206	2068	2150
Starting Vehs	475	447	485	412	453
Ending Vehs	484	472	522	523	496
Travel Distance (mi)	1457	1446	1489	1463	1453
Travel Time (hr)	197.8	164.4	172.9	222.5	189.7
Total Delay (hr)	152.9	119.9	127.4	177.7	145.0
Total Stops	4541	4171	4806	4746	4481
Fuel Used (gal)	91.8	84.6	87.4	97.8	90.0

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2092	2143	2124	2220	2103	2197	2158
Vehs Exited	2080	2134	2169	2206	2110	2132	2124
Starting Vehs	456	442	513	472	588	475	548
Ending Vehs	468	451	468	486	581	540	582
Travel Distance (mi)	1392	1415	1424	1435	1380	1438	1385
Travel Time (hr)	222.1	241.2	237.7	248.6	221.6	248.6	237.0
Total Delay (hr)	179.4	197.7	194.0	204.4	179.1	204.3	194.2
Total Stops	4208	4288	4357	4724	4900	4626	5137
Fuel Used (gal)	95.1	100.6	100.3	103.4	94.6	102.5	98.5

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	3	8	9	Avg
Vehs Entered	2071	2083	2055	2250	2134
Vehs Exited	2079	2064	2096	2243	2131
Starting Vehs	484	472	522	523	496
Ending Vehs	476	491	481	530	509
Travel Distance (mi)	1397	1381	1364	1480	1408
Travel Time (hr)	253.1	203.5	201.3	259.9	234.1
Total Delay (hr)	210.0	161.0	159.5	214.5	190.7
Total Stops	4410	4097	4495	4866	4557
Fuel Used (gal)	102.3	90.9	90.0	107.1	98.7

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2118	2047	2168	1998	2136	2091	2073
Vehs Exited	2112	2023	2113	1978	2174	2032	2098
Starting Vehs	468	451	468	486	581	540	582
Ending Vehs	474	475	523	506	543	599	557
Travel Distance (mi)	1404	1366	1418	1310	1424	1364	1353
Travel Time (hr)	246.2	277.5	272.9	270.1	258.7	295.8	274.0
Total Delay (hr)	203.0	235.6	229.5	229.8	214.8	254.1	232.2
Total Stops	4059	4130	4528	4076	4727	4526	4833
Fuel Used (gal)	101.2	107.2	107.4	103.6	105.6	111.6	106.5

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

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Run Number					Avg
Vehs Entered	2085	1997	2033	2090	2076
Vehs Exited	2117	2004	1965	2072	2060
Starting Vehs	476	491	481	530	509
Ending Vehs	444	484	549	548	518
Travel Distance (mi)	1397	1344	1272	1370	1366
Travel Time (hr)	292.7	260.5	248.0	302.8	272.7
Total Delay (hr)	250.1	219.1	209.0	260.4	230.7
Total Stops	4216	3682	4121	4487	4305
Fuel Used (gal)	112.3	101.9	97.3	112.1	106.1

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	25.6	1.4
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.3	0.3	0.0	0.0	0.0	59.9	58.8	59.4
Total Delay (hr)	1.1	2.0	1.0	1.3	1.5	1.1	9.2	3.5	0.0	3.6	13.6	0.7
Total Del/Veh (s)	76.5	95.3	26.2	42.0	50.1	31.3	255.5	16.5	11.0	75.6	31.7	28.6
Stop Delay (hr)	1.0	1.8	1.0	1.2	1.3	1.0	9.0	2.1	0.0	3.3	9.1	0.5
Stop Del/Veh (s)	71.0	87.0	24.5	39.0	43.8	27.7	249.7	10.0	8.1	69.9	21.3	22.5

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	30.0
Denied Del/Veh (s)	32.4
Total Delay (hr)	38.6
Total Del/Veh (s)	41.9
Stop Delay (hr)	31.4
Stop Del/Veh (s)	34.1

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.2	1.1	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.9	0.7	0.3	1.9	3.1	0.7	4.8	2.0	0.3	0.5	17.9	2.7
Total Del/Veh (s)	23.7	23.0	3.8	62.3	73.0	44.3	32.3	9.9	6.2	62.4	50.8	18.7
Stop Delay (hr)	0.8	0.6	0.0	1.8	2.9	0.6	3.8	0.7	0.1	0.4	12.8	1.3
Stop Del/Veh (s)	21.1	18.9	0.0	57.4	66.9	40.4	25.8	3.5	2.4	51.3	36.2	8.7

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.1
Total Delay (hr)	35.8
Total Del/Veh (s)	31.5
Stop Delay (hr)	25.8
Stop Del/Veh (s)	22.6

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.5	0.0	0.0	0.0	0.0	0.0	0.5
Denied Del/Veh (s)	1.4	0.2	0.0	0.1	0.0	0.0	0.4
Total Delay (hr)	6.6	0.1	3.4	0.9	2.1	7.0	20.0
Total Del/Veh (s)	20.0	0.9	10.9	9.8	29.7	17.3	15.7
Stop Delay (hr)	3.0	0.0	1.4	0.3	1.5	3.0	9.3
Stop Del/Veh (s)	9.1	0.0	4.4	4.0	21.9	7.5	7.3

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	4.1	0.1	3.4	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.5	0.1	1.5	0.5	2.0	0.9	5.2	0.1	7.5	7.0	0.6	25.8
Total Del/Veh (s)	50.6	45.2	51.6	50.7	20.7	64.7	17.9	3.0	51.6	14.4	5.4	21.3
Stop Delay (hr)	0.5	0.1	1.4	0.4	1.8	0.8	3.2	0.0	6.4	3.5	0.2	18.5
Stop Del/Veh (s)	48.6	42.3	47.7	45.8	18.8	60.5	10.9	1.5	44.5	7.2	2.3	15.2

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.4	0.1	0.1	0.0	0.0	0.0	1.2	4.3	2.0	0.0	0.0	0.0
Denied Del/Veh (s)	5.3	2.4	2.6	0.0	0.0	0.0	35.2	18.7	24.7	0.0	0.0	0.0
Total Delay (hr)	8.6	1.7	0.4	10.8	4.3	0.2	14.4	4.8	0.4	1.5	7.3	1.3
Total Del/Veh (s)	110.1	47.4	17.5	90.9	53.0	8.1	413.7	21.2	5.4	50.5	21.3	9.6
Stop Delay (hr)	8.2	1.5	0.4	9.8	3.5	0.2	14.4	4.1	0.4	1.2	3.3	0.6
Stop Del/Veh (s)	104.4	40.8	15.6	83.2	43.4	6.7	414.5	18.1	4.9	42.8	9.7	4.0

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	8.0
Denied Del/Veh (s)	6.6
Total Delay (hr)	55.7
Total Del/Veh (s)	45.7
Stop Delay (hr)	47.5
Stop Del/Veh (s)	39.0

6: Latrobe Rd & Driveway Performance by movement

Movement	NBT	SBT	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	6.3	1.3	7.7
Total Del/Veh (s)	17.9	2.8	9.2
Stop Delay (hr)	5.2	0.2	5.4
Stop Del/Veh (s)	14.8	0.4	6.5

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	1.4
Denied Del/Veh (s)	0.7	0.3	0.1	0.1	0.1	3.8	4.1	7.3	0.0	0.0	1.6
Total Delay (hr)	1.5	0.1	0.1	0.1	0.1	0.6	5.9	0.1	8.7	2.1	19.3
Total Del/Veh (s)	34.3	24.0	41.8	36.2	18.3	50.5	19.0	21.9	21.9	24.4	22.3
Stop Delay (hr)	1.4	0.1	0.1	0.1	0.0	0.5	4.7	0.1	5.1	1.3	13.4
Stop Del/Veh (s)	31.0	21.7	39.5	32.6	17.6	46.8	15.1	18.6	12.9	14.8	15.5

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Denied Del/Veh (s)	0.0	0.0	0.0	0.6	3.9	1.2	0.1	0.1	3.8	0.4	0.3	1.9
Total Delay (hr)	2.1	1.3	0.0	0.7	8.8	0.5	0.5	0.0	0.7	0.1	0.7	15.4
Total Del/Veh (s)	65.3	12.2	2.9	89.1	49.5	13.5	64.7	3.6	58.7	27.3	19.2	35.8
Stop Delay (hr)	2.0	1.0	0.0	0.6	7.5	0.4	0.5	0.0	0.7	0.1	0.7	13.4
Stop Del/Veh (s)	61.6	9.1	1.4	84.1	42.1	11.5	62.5	3.8	55.3	23.3	17.6	31.1

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	30.8	242.8	26.3	0.2	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	847.4	839.6	831.2	4.9	1.1	1.6	4.0	0.2	0.2
Total Delay (hr)	0.6	1.2	0.2	2.7	25.2	2.6	1.8	0.2	0.3	0.4	0.1	0.2
Total Del/Veh (s)	39.1	12.8	8.4	129.6	153.2	146.0	37.3	25.4	11.2	31.2	32.1	21.2
Stop Delay (hr)	0.6	0.7	0.1	2.7	25.4	2.8	1.7	0.2	0.3	0.3	0.1	0.2
Stop Del/Veh (s)	36.0	7.5	5.8	128.8	154.4	152.3	34.0	21.0	9.4	29.0	28.7	21.1

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	300.3
Denied Del/Veh (s)	500.3
Total Delay (hr)	35.6
Total Del/Veh (s)	79.6
Stop Delay (hr)	35.0
Stop Del/Veh (s)	78.2

Total Network Performance

Denied Delay (hr)	341.3
Denied Del/Veh (s)	133.5
Total Delay (hr)	314.9
Total Del/Veh (s)	126.6
Stop Delay (hr)	245.1
Stop Del/Veh (s)	98.5

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	157	218	160	159	292	251	377	352	143	124	338	355
Average Queue (ft)	27	105	67	61	135	193	181	125	58	108	301	323
95th Queue (ft)	108	187	123	124	239	320	503	353	123	148	370	361
Link Distance (ft)		932	932	482	482		774	774	774		309	309
Upstream Blk Time (%)							2	0			17	37
Queuing Penalty (veh)							5	0			0	0
Storage Bay Dist (ft)	150					250				100		
Storage Blk Time (%)	0	6				33	1			23	26	
Queuing Penalty (veh)	0	1				87	1			175	46	

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	L	LT	TR	L	L	T	T	TR	L	T
Maximum Queue (ft)	112	141	174	306	175	239	239	140	186	125	224	524
Average Queue (ft)	54	61	61	155	103	141	138	54	62	64	61	316
95th Queue (ft)	97	115	164	254	198	219	219	112	141	109	206	531
Link Distance (ft)	1228	1228		621		646	646	646	646	646		774
Upstream Blk Time (%)												0
Queuing Penalty (veh)												0
Storage Bay Dist (ft)			150		150						200	
Storage Blk Time (%)			0	14	2						0	42
Queuing Penalty (veh)			0	27	3						0	13

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	498	457	224
Average Queue (ft)	270	205	150
95th Queue (ft)	496	392	246
Link Distance (ft)	774	774	
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			200
Storage Blk Time (%)		3	2
Queuing Penalty (veh)		18	7

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	R	L	T	T	T	T
Maximum Queue (ft)	314	287	173	223	284	206	173	213	305	326	149
Average Queue (ft)	205	159	55	86	112	71	76	86	76	72	61
95th Queue (ft)	292	274	127	167	215	150	137	162	192	186	117
Link Distance (ft)	1211		572	572	572			646	646	646	646
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)		450				275	575				
Storage Blk Time (%)					0	0					
Queuing Penalty (veh)					1	0					

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	26	85	41	17	124	244	215	60	72	162	254	277
Average Queue (ft)	2	29	8	1	82	104	82	15	28	43	75	109
95th Queue (ft)	14	69	30	8	138	193	161	44	60	112	173	218
Link Distance (ft)			778	778		526	526			839	839	839
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					5	9				0		
Queuing Penalty (veh)					11	9				0		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	38	276	284	304	322	323	243
Average Queue (ft)	8	165	184	145	170	154	60
95th Queue (ft)	27	248	258	265	287	283	158
Link Distance (ft)	839			572	572	572	572
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		0	0	0			
Queuing Penalty (veh)		0	1	1			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	293	319	272	170	183	191	199	336	102	278	365	268
Average Queue (ft)	160	208	87	71	161	173	166	234	35	260	307	105
95th Queue (ft)	297	324	241	141	207	219	250	413	73	320	466	230
Link Distance (ft)			372	372				315	315		278	278
Upstream Blk Time (%)			3					9		43	68	0
Queuing Penalty (veh)			0					55		0	223	1
Storage Bay Dist (ft)	325	325			175	175	175			275		
Storage Blk Time (%)	0	6	0		3	18	15	0		58	67	
Queuing Penalty (veh)	0	3	0		6	38	31	2		126	103	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B25	B25	SB	SB	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	L	L	T	T	T
Maximum Queue (ft)	188	141	53	334	308	462	489	76	208	343	354	271
Average Queue (ft)	86	34	36	201	77	186	170	24	34	122	138	26
95th Queue (ft)	168	107	58	432	271	536	521	60	122	284	307	145
Link Distance (ft)	278	278		243	243	468	468			839	839	839
Upstream Blk Time (%)	0			51	3	18	7					
Queuing Penalty (veh)	0			328	22	76	32					
Storage Bay Dist (ft)			25					225	225			
Storage Blk Time (%)		2	7							2		0
Queuing Penalty (veh)		6	15							2		0

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	178
Average Queue (ft)	27
95th Queue (ft)	98
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 6: Latrobe Rd & Driveway

Movement	NB	NB	SB	SB
Directions Served	T	TR	T	T
Maximum Queue (ft)	326	333	157	180
Average Queue (ft)	104	107	12	20
95th Queue (ft)	413	423	82	104
Link Distance (ft)	491	491	468	468
Upstream Blk Time (%)	4	4		
Queuing Penalty (veh)	24	28		
Storage Bay Dist (ft)				
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

Intersection: 7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	SB	SB
Directions Served	L	LTR	LTR	L	T	TR	T	TR
Maximum Queue (ft)	112	184	70	175	418	441	502	505
Average Queue (ft)	30	85	26	45	167	173	291	326
95th Queue (ft)	87	154	58	124	415	425	508	536
Link Distance (ft)		660	453		739	739	491	491
Upstream Blk Time (%)					2	3	1	1
Queuing Penalty (veh)					0	0	7	13
Storage Bay Dist (ft)	100			200				
Storage Blk Time (%)	0	10		0	7		16	
Queuing Penalty (veh)	0	8		0	3		0	

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	B20	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	T	L	TR	L	TR
Maximum Queue (ft)	104	207	148	47	145	294	174	1235	87	27	74	193
Average Queue (ft)	78	67	65	4	44	267	57	1093	26	7	38	69
95th Queue (ft)	119	165	122	29	123	284	137	1483	65	24	74	142
Link Distance (ft)		315	315			198	198	1217	216	216		410
Upstream Blk Time (%)						63	0	12				
Queuing Penalty (veh)						395	3	153				
Storage Bay Dist (ft)	80			110	120						50	
Storage Blk Time (%)	23	1	1			66					15	20
Queuing Penalty (veh)	46	2	0			27					22	8

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	104	128	161	145	414	421	124	262	73	78
Average Queue (ft)	43	54	78	116	387	387	86	80	26	24
95th Queue (ft)	87	108	141	205	403	408	133	211	60	59
Link Distance (ft)		1217	1217		368	368		331		245
Upstream Blk Time (%)					93	90		2		
Queuing Penalty (veh)					0	0		0		
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)		0		3	95		14	1	0	0
Queuing Penalty (veh)		0		13	126		20	2	0	0

Network Summary

Network wide Queuing Penalty: 2377

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	83	97	1055	1317	270
Future Volume (veh/h)	80	83	97	1055	1317	270
Number	3	18	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	87	90	105	1147	1432	293
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	147	131	133	2812	1970	395
Arrive On Green	0.08	0.08	0.08	0.79	0.67	0.67
Sat Flow, veh/h	1774	1583	1774	3632	3032	589
Grp Volume(v), veh/h	87	90	105	1147	851	874
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1759
Q Serve(g_s), s	3.9	4.5	4.7	8.0	24.9	26.6
Cycle Q Clear(g_c), s	3.9	4.5	4.7	8.0	24.9	26.6
Prop In Lane	1.00	1.00	1.00			0.34
Lane Grp Cap(c), veh/h	147	131	133	2812	1186	1179
V/C Ratio(X)	0.59	0.69	0.79	0.41	0.72	0.74
Avail Cap(c_a), veh/h	392	350	174	3561	1520	1510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	36.4	37.1	2.5	8.5	8.8
Incr Delay (d2), s/veh	3.8	6.2	12.0	0.1	0.7	1.0
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	2.2	2.8	3.9	12.1	13.0
LnGrp Delay(d),s/veh	39.8	42.6	49.1	2.7	9.3	9.8
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	177			1252	1725	
Approach Delay, s/veh	41.2			6.6	9.5	
Approach LOS	D			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		70.8			10.1	60.6		10.7
Change Period (Y+Rc), s		6.0			4.0	6.0		4.0
Max Green Setting (Gmax), s		82.0			8.0	70.0		18.0
Max Q Clear Time (g_c+I1), s		10.0			6.7	28.6		6.5
Green Ext Time (p_c), s		34.6			0.0	26.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	70	60	10	160	240	90	812	0	160	829	410
Future Volume (veh/h)	100	70	60	10	160	240	90	812	0	160	829	410
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	109	76	65	11	231	223	98	883	0	174	901	446
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	102	87	14	285	255	123	1528	0	207	1104	540
Arrive On Green	0.11	0.11	0.11	0.16	0.16	0.16	0.07	0.43	0.00	0.12	0.48	0.48
Sat Flow, veh/h	1774	928	794	84	1774	1583	1774	3632	0	1774	2306	1128
Grp Volume(v), veh/h	109	0	141	242	0	223	98	883	0	174	689	658
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1859	0	1583	1774	1770	0	1774	1770	1664
Q Serve(g_s), s	6.0	0.0	8.2	13.0	0.0	14.3	5.6	19.6	0.0	10.0	34.4	35.3
Cycle Q Clear(g_c), s	6.0	0.0	8.2	13.0	0.0	14.3	5.6	19.6	0.0	10.0	34.4	35.3
Prop In Lane	1.00		0.46	0.05		1.00	1.00		0.00	1.00		0.68
Lane Grp Cap(c), veh/h	194	0	189	299	0	255	123	1528	0	207	847	797
V/C Ratio(X)	0.56	0.00	0.75	0.81	0.00	0.88	0.80	0.58	0.00	0.84	0.81	0.83
Avail Cap(c_a), veh/h	633	0	615	323	0	275	137	1528	0	291	908	854
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	43.8	0.0	44.8	42.0	0.0	42.5	47.5	22.3	0.0	44.9	23.0	23.3
Incr Delay (d2), s/veh	2.5	0.0	5.8	13.4	0.0	24.4	24.9	0.5	0.0	14.3	5.4	6.4
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	3.1	0.0	4.2	7.8	0.0	8.0	3.6	9.7	0.0	5.7	17.9	17.5
LnGrp Delay(d),s/veh	46.3	0.0	50.6	55.4	0.0	66.9	72.4	22.8	0.0	59.2	28.4	29.6
LnGrp LOS	D		D	E		E	E	C		E	C	C
Approach Vol, veh/h		250			465			981			1521	
Approach Delay, s/veh		48.7			60.9			27.8			32.5	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.1	50.1		21.7	11.2	54.9		15.8
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	12.0	44.2		18.0	8.0	53.2		37.0
Max Q Clear Time (g_c+I1), s	12.0	21.6		16.3	7.6	37.3		10.2
Green Ext Time (p_c), s	0.2	16.8		0.4	0.0	12.3		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	36.4
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	493	10	20	617	60	40	0	40	90	0	70
Future Volume (veh/h)	20	493	10	20	617	60	40	0	40	90	0	70
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	536	11	22	671	65	43	0	43	98	0	76
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	1601	33	16	1597	715	45	0	45	141	0	126
Arrive On Green	0.01	0.45	0.41	0.01	0.45	0.45	0.05	0.00	0.07	0.08	0.00	0.09
Sat Flow, veh/h	1774	3547	73	1774	3539	1583	837	0	837	1774	0	1583
Grp Volume(v), veh/h	22	267	280	22	671	65	86	0	0	98	0	76
Grp Sat Flow(s),veh/h/ln	1774	1770	1850	1774	1770	1583	1673	0	0	1774	0	1583
Q Serve(g_s), s	0.4	3.8	3.9	0.4	5.1	0.9	2.0	0.0	0.0	2.1	0.0	1.8
Cycle Q Clear(g_c), s	0.4	3.8	3.9	0.4	5.1	0.9	2.0	0.0	0.0	2.1	0.0	1.8
Prop In Lane	1.00		0.04	1.00		1.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	16	799	835	16	1597	715	90	0	0	141	0	126
V/C Ratio(X)	1.37	0.33	0.34	1.37	0.42	0.09	0.95	0.00	0.00	0.69	0.00	0.60
Avail Cap(c_a), veh/h	158	1258	1315	158	2516	1125	1253	0	0	360	0	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.5	7.0	7.0	19.5	7.3	6.2	18.5	0.0	0.0	17.7	0.0	17.3
Incr Delay (d2), s/veh	196.2	0.3	0.3	196.2	0.2	0.1	17.8	0.0	0.0	2.3	0.0	1.7
Initial Q Delay(d3),s/veh	18.6	0.0	0.0	18.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.9	2.0	1.0	2.5	0.4	1.3	0.0	0.0	1.1	0.0	0.9
LnGrp Delay(d),s/veh	234.3	7.3	7.3	234.3	7.5	6.2	36.3	0.0	0.0	19.9	0.0	19.0
LnGrp LOS	F	A	A	F	A	A	D			B		B
Approach Vol, veh/h		569			758			86			174	
Approach Delay, s/veh		16.0			14.0			36.3			19.5	
Approach LOS		B			B			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.4	21.8		6.1	4.4	21.8		7.1
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	4.0	26.3		30.0	4.0	26.3		8.5
Max Q Clear Time (g_c+I2), s	2.4	7.1		4.0	2.4	5.9		4.1
Green Ext Time (p_c), s	0.0	9.0		0.3	0.0	9.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	360	203	520	530	0	127	10	100	0	10	10
Future Volume (veh/h)	20	360	203	520	530	0	127	10	100	0	10	10
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	391	221	565	576	0	138	11	109	0	11	11
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	671	375	403	2197	0	155	32	313	126	70	70
Arrive On Green	0.31	0.31	0.30	0.23	0.62	0.00	0.09	0.21	0.18	0.00	0.08	0.05
Sat Flow, veh/h	834	2193	1224	1774	3632	0	1774	147	1458	1266	856	856
Grp Volume(v), veh/h	22	315	297	565	576	0	138	0	120	0	0	22
Grp Sat Flow(s),veh/h/ln	834	1770	1647	1774	1770	0	1774	0	1605	1266	0	1712
Q Serve(g_s), s	1.1	8.6	8.8	13.0	4.2	0.0	4.4	0.0	3.7	0.0	0.0	0.7
Cycle Q Clear(g_c), s	1.1	8.6	8.8	13.0	4.2	0.0	4.4	0.0	3.7	0.0	0.0	0.7
Prop In Lane	1.00		0.74	1.00		0.00	1.00		0.91	1.00		0.50
Lane Grp Cap(c), veh/h	381	542	504	403	2197	0	155	0	345	126	0	141
V/C Ratio(X)	0.06	0.58	0.59	1.40	0.26	0.00	0.89	0.00	0.35	0.00	0.00	0.16
Avail Cap(c_a), veh/h	438	662	616	403	2437	0	155	0	1156	796	0	1047
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	16.7	17.0	22.1	4.9	0.0	25.8	0.0	19.9	0.0	0.0	24.9
Incr Delay (d2), s/veh	0.1	1.2	1.4	195.2	0.1	0.0	41.0	0.0	0.2	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.4	4.2	28.1	2.0	0.0	3.9	0.0	1.7	0.0	0.0	0.3
LnGrp Delay(d),s/veh	14.2	18.0	18.4	217.4	5.0	0.0	66.9	0.0	20.1	0.0	0.0	25.1
LnGrp LOS	B	B	B	F	A		E		C			C
Approach Vol, veh/h		634			1141			258			22	
Approach Delay, s/veh		18.0			110.2			45.1			25.1	
Approach LOS		B			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	18.0	22.9		16.3		40.9	7.6	8.7
Change Period (Y+Rc), s	5.6	6.0		6.0		6.0	4.6	* 6
Max Green Setting (Gmax), s	12.4	20.8		39.2		38.8	3.0	* 33
Max Q Clear Time (g_c+I1), s	15.0	10.8		5.7		6.2	6.4	2.7
Green Ext Time (p_c), s	0.0	6.1		0.3		12.2	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	72.7
HCM 2010 LOS	E

Notes

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	467	10	0	978
Future Vol, veh/h	0	10	467	10	0	978
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	508	11	0	1063

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	259	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	740	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	740	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	740	-
HCM Lane V/C Ratio	-	-	0.015	-
HCM Control Delay (s)	-	-	9.9	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	578	10	130	20	347	0	0	388	590
Future Volume (veh/h)	0	0	0	578	10	130	20	347	0	0	388	590
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	1863	1863
Adj Flow Rate, veh/h				636	0	141	22	377	0	0	422	641
Adj No. of Lanes				2	0	1	1	2	0	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				723	0	322	74	1807	0	0	1223	547
Arrive On Green				0.20	0.00	0.20	0.04	0.51	0.00	0.00	0.35	0.35
Sat Flow, veh/h				3548	0	1583	1774	3632	0	0	3632	1583
Grp Volume(v), veh/h				636	0	141	22	377	0	0	422	641
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	1583
Q Serve(g_s), s				9.6	0.0	4.3	0.7	3.2	0.0	0.0	4.9	19.0
Cycle Q Clear(g_c), s				9.6	0.0	4.3	0.7	3.2	0.0	0.0	4.9	19.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				723	0	322	74	1807	0	0	1223	547
V/C Ratio(X)				0.88	0.00	0.44	0.30	0.21	0.00	0.00	0.35	1.17
Avail Cap(c_a), veh/h				723	0	322	258	2008	0	0	1223	547
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	0.99	0.99	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.2	0.0	19.1	25.6	7.4	0.0	0.0	13.4	18.0
Incr Delay (d2), s/veh				11.7	0.0	0.3	0.8	0.0	0.0	0.0	0.8	95.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.9	0.0	1.9	0.3	1.6	0.0	0.0	2.5	22.7
LnGrp Delay(d),s/veh				33.0	0.0	19.5	26.4	7.4	0.0	0.0	14.2	113.5
LnGrp LOS				C		B	C	A			B	F
Approach Vol, veh/h					777			399			1063	
Approach Delay, s/veh					30.5			8.4			74.1	
Approach LOS					C			A			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		34.9			9.1	25.8		17.0
Change Period (Y+Rc), s		6.8			6.8	* 6.8		5.8
Max Green Setting (Gmax), s		31.2			8.0	* 19		11.2
Max Q Clear Time (g_c+I1), s		5.2			2.7	21.0		11.6
Green Ext Time (p_c), s		1.0			0.5	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.3
HCM 2010 LOS	D

Notes



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	20	186	237	865	100
Future Volume (veh/h)	130	20	186	237	865	100
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	1863
Adj Flow Rate, veh/h	141	22	202	258	940	0
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	459	211	478	1977	1048	469
Arrive On Green	0.13	0.13	0.14	0.56	0.59	0.00
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583
Grp Volume(v), veh/h	141	22	202	258	940	0
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583
Q Serve(g_s), s	2.0	0.7	3.0	1.9	12.7	0.0
Cycle Q Clear(g_c), s	2.0	0.7	3.0	1.9	12.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	459	211	478	1977	1048	469
V/C Ratio(X)	0.31	0.10	0.42	0.13	0.90	0.00
Avail Cap(c_a), veh/h	576	265	551	2136	1300	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.89	0.00
Uniform Delay (d), s/veh	21.5	20.9	21.7	5.8	10.5	0.0
Incr Delay (d2), s/veh	0.1	0.1	0.2	0.0	10.8	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	1.0	0.6	1.4	0.9	7.4	0.0
LnGrp Delay(d),s/veh	21.7	21.0	21.9	5.8	21.3	0.0
LnGrp LOS	C	C	C	A	C	
Approach Vol, veh/h	163			460	940	
Approach Delay, s/veh	21.6			12.9	21.3	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		37.5		13.1	14.4	23.1		
Change Period (Y+Rc), s		6.8		5.8	6.8	* 6.8		
Max Green Setting (Gmax), s		33.2		9.2	8.8	* 20		
Max Q Clear Time (g_c+I1), s		3.9		4.0	5.0	14.7		
Green Ext Time (p_c), s		1.0		0.1	0.5	1.6		

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Notes

Montano de El Dorado — Near Term (2025) Conditions

SimTraffic Simulation Summary — PM PEAK

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	9678	9675	9374	9167	9850	9529	9274
Vehs Exited	9393	9429	9150	9059	9313	9148	9158
Starting Vehs	590	560	575	599	472	559	592
Ending Vehs	875	806	799	707	1009	940	708
Travel Distance (mi)	6556	6739	6495	6467	6500	6596	6518
Travel Time (hr)	1020.0	1042.5	1377.2	1263.7	1002.2	1212.2	1233.7
Total Delay (hr)	817.4	834.7	1177.0	1064.0	802.1	1009.0	1033.2
Total Stops	23415	22380	22515	20710	24079	24475	21572
Fuel Used (gal)	441.3	452.0	521.0	494.8	436.7	485.8	490.3

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	9530	9459	9075	9458
Vehs Exited	9276	9299	8944	9219
Starting Vehs	608	574	580	566
Ending Vehs	862	734	711	818
Travel Distance (mi)	6645	6641	6346	6550
Travel Time (hr)	1003.9	1094.6	1156.8	1140.7
Total Delay (hr)	798.6	889.5	960.6	938.6
Total Stops	22721	21558	20360	22376
Fuel Used (gal)	438.9	460.9	464.8	468.7

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2438	2557	2257	2298	2492	2361	2334
Vehs Exited	2351	2486	2234	2328	2423	2334	2302
Starting Vehs	590	560	575	599	472	559	592
Ending Vehs	677	631	598	569	541	586	624
Travel Distance (mi)	1643	1756	1589	1645	1692	1669	1691
Travel Time (hr)	162.0	155.2	197.0	175.0	135.3	164.8	195.7
Total Delay (hr)	111.1	100.9	147.9	124.3	83.3	113.2	143.7
Total Stops	5585	5803	5017	5232	5404	5462	5519
Fuel Used (gal)	89.2	91.5	95.7	92.6	85.5	90.7	98.5

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2526	2411	2384	2407
Vehs Exited	2503	2379	2330	2367
Starting Vehs	608	574	580	566
Ending Vehs	631	606	634	604
Travel Distance (mi)	1772	1710	1671	1684
Travel Time (hr)	155.9	169.1	169.3	167.9
Total Delay (hr)	101.2	116.2	117.6	115.9
Total Stops	5989	5204	5461	5466
Fuel Used (gal)	91.9	93.3	92.3	92.1

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2435	2367	2448	2399	2634	2429	2376
Vehs Exited	2415	2377	2245	2295	2388	2244	2314
Starting Vehs	677	631	598	569	541	586	624
Ending Vehs	697	621	801	673	787	771	686
Travel Distance (mi)	1688	1666	1643	1670	1713	1652	1649
Travel Time (hr)	222.8	215.1	314.7	270.9	201.9	266.0	260.0
Total Delay (hr)	170.3	163.5	264.2	218.9	148.8	215.1	209.4
Total Stops	5958	5128	5552	5332	6204	5973	5421
Fuel Used (gal)	104.7	102.1	123.6	114.6	100.4	113.3	111.7

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2422	2467	2253	2424
Vehs Exited	2389	2372	2322	2336
Starting Vehs	631	606	634	604
Ending Vehs	664	701	565	697
Travel Distance (mi)	1730	1726	1642	1678
Travel Time (hr)	209.9	236.6	240.4	243.8
Total Delay (hr)	156.5	183.3	189.5	192.0
Total Stops	5912	5690	4944	5611
Fuel Used (gal)	102.7	108.9	106.2	108.8

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2435	2442	2285	2158	2398	2275	2236
Vehs Exited	2353	2324	2326	2159	2288	2272	2235
Starting Vehs	697	621	801	673	787	771	686
Ending Vehs	779	739	760	672	897	774	687
Travel Distance (mi)	1671	1722	1675	1551	1597	1639	1610
Travel Time (hr)	288.1	298.4	402.7	366.9	287.3	348.7	352.5
Total Delay (hr)	236.6	245.4	351.3	319.1	238.2	298.2	302.8
Total Stops	5739	5483	6010	4694	6204	6161	5018
Fuel Used (gal)	118.5	122.4	145.3	133.3	117.0	131.3	132.2

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2196	2197	2221	2279
Vehs Exited	2237	2238	2166	2259
Starting Vehs	664	701	565	697
Ending Vehs	623	660	620	718
Travel Distance (mi)	1597	1581	1548	1619
Travel Time (hr)	276.1	304.3	326.0	325.1
Total Delay (hr)	226.7	255.2	278.4	275.2
Total Stops	5028	4861	4677	5389
Fuel Used (gal)	113.1	119.3	123.7	125.6

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2370	2309	2384	2312	2326	2464	2328
Vehs Exited	2274	2242	2345	2277	2214	2298	2307
Starting Vehs	779	739	760	672	897	774	687
Ending Vehs	875	806	799	707	1009	940	708
Travel Distance (mi)	1554	1596	1588	1601	1497	1636	1569
Travel Time (hr)	347.1	373.8	462.8	451.0	377.7	432.7	425.5
Total Delay (hr)	299.4	324.9	413.6	401.8	331.8	382.5	377.3
Total Stops	6133	5966	5936	5452	6267	6879	5614
Fuel Used (gal)	128.9	136.0	156.5	154.4	133.6	150.4	147.9

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2386	2384	2217	2349
Vehs Exited	2147	2310	2126	2255
Starting Vehs	623	660	620	718
Ending Vehs	862	734	711	818
Travel Distance (mi)	1546	1623	1486	1570
Travel Time (hr)	362.0	384.7	421.1	403.8
Total Delay (hr)	314.3	334.8	375.2	355.5
Total Stops	5792	5803	5278	5906
Fuel Used (gal)	131.3	139.4	142.6	142.1

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	60.9	74.6	81.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0
Denied Del/Veh (s)	1253.8	1279.6	1261.5	0.2	0.3	0.3	0.0	0.0	0.0	3.2	1.2	0.7
Total Delay (hr)	10.9	14.5	0.9	1.8	0.4	1.4	1.6	10.1	0.3	3.9	9.2	0.2
Total Del/Veh (s)	752.9	867.2	55.5	36.7	26.5	16.3	45.9	30.9	23.5	70.8	36.9	20.6
Stop Delay (hr)	10.8	14.3	0.8	1.6	0.3	1.1	1.3	6.6	0.2	3.3	6.2	0.1
Stop Del/Veh (s)	745.6	857.9	53.2	32.9	21.0	13.2	39.2	20.3	17.0	60.8	25.0	15.3

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	217.8
Denied Del/Veh (s)	218.6
Total Delay (hr)	55.0
Total Del/Veh (s)	62.3
Stop Delay (hr)	46.8
Stop Del/Veh (s)	53.1

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	2.0	0.7	3.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	2.0	2.6	0.1	3.0	3.1	0.6	19.3	4.3	0.9	0.6	15.3	1.0
Total Del/Veh (s)	69.5	89.0	2.8	60.5	63.1	58.5	66.6	13.1	11.4	113.5	58.7	20.6
Stop Delay (hr)	1.9	2.4	0.0	2.8	2.8	0.6	15.4	2.2	0.4	0.6	11.9	0.8
Stop Del/Veh (s)	66.0	83.4	0.0	55.4	56.6	54.7	53.4	6.6	5.5	101.5	45.5	15.1

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.2
Total Delay (hr)	52.9
Total Del/Veh (s)	44.0
Stop Delay (hr)	41.7
Stop Del/Veh (s)	34.7

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	2.4	0.1	0.0	0.0	0.0	0.0	2.5
Denied Del/Veh (s)	14.7	0.4	0.0	0.0	0.0	0.0	1.8
Total Delay (hr)	8.3	0.2	7.8	2.0	4.1	4.0	26.4
Total Del/Veh (s)	51.1	1.4	14.3	13.4	71.7	14.3	19.7
Stop Delay (hr)	7.1	0.0	3.0	0.7	3.5	1.6	15.8
Stop Del/Veh (s)	43.7	0.0	5.4	4.4	61.8	5.7	11.8

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.4	0.0	0.0	2.0	0.3	19.8	0.0	0.0	0.0	0.0	0.0	22.5
Denied Del/Veh (s)	3.4	0.2	0.3	100.8	94.7	97.5	0.0	0.0	0.0	0.0	0.0	18.1
Total Delay (hr)	8.2	0.6	0.3	3.1	0.5	32.6	61.9	0.6	14.5	5.1	0.0	127.4
Total Del/Veh (s)	75.6	47.4	14.9	165.7	174.7	165.6	146.6	18.3	89.2	19.0	2.2	101.3
Stop Delay (hr)	7.5	0.6	0.3	3.1	0.5	32.7	51.7	0.5	12.8	3.4	0.0	113.0
Stop Del/Veh (s)	69.4	43.9	13.8	162.0	171.6	166.4	122.3	15.1	78.6	12.7	1.4	89.8

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	90.3	99.4	18.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Denied Del/Veh (s)	667.3	670.4	674.4	0.0	0.0	0.0	0.5	0.4	0.7	0.0	0.0	0.0
Total Delay (hr)	30.3	9.0	1.1	6.2	3.9	3.7	2.5	25.7	3.3	9.6	5.5	0.5
Total Del/Veh (s)	323.8	90.6	60.3	54.9	46.7	62.3	103.1	81.7	30.1	138.8	31.7	8.4
Stop Delay (hr)	29.1	7.6	1.0	5.5	3.3	3.6	2.4	23.7	3.0	9.0	3.7	0.4
Stop Del/Veh (s)	311.3	76.7	52.3	48.8	38.9	60.4	98.8	75.4	27.6	130.1	21.3	6.1

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	207.9
Denied Del/Veh (s)	159.5
Total Delay (hr)	101.5
Total Del/Veh (s)	82.9
Stop Delay (hr)	92.3
Stop Del/Veh (s)	75.5

6: Latrobe Rd & Driveway Performance by movement

Movement	NBT	SBT	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	8.7	0.2	9.0
Total Del/Veh (s)	19.2	0.8	11.9
Stop Delay (hr)	6.4	0.0	6.4
Stop Del/Veh (s)	14.2	0.0	8.5

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	8.7	14.1	7.1	0.1	0.1	0.1	1.5	2.2	2.0	0.2	0.0	0.0
Total Delay (hr)	8.8	0.3	0.6	0.2	0.2	0.1	0.3	16.9	0.1	0.3	3.5	0.4
Total Del/Veh (s)	104.8	114.6	104.6	57.7	61.1	37.8	84.5	42.5	46.9	62.2	13.2	13.3
Stop Delay (hr)	8.3	0.3	0.6	0.2	0.2	0.1	0.2	13.5	0.1	0.3	2.4	0.2
Stop Del/Veh (s)	98.7	108.0	99.7	55.4	57.7	37.0	77.8	34.0	38.8	59.2	8.9	9.1

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	All
Denied Delay (hr)	1.7
Denied Del/Veh (s)	2.1
Total Delay (hr)	31.6
Total Del/Veh (s)	39.3
Stop Delay (hr)	26.3
Stop Del/Veh (s)	32.8

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.2	3.1
Denied Del/Veh (s)	0.4	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.1	51.2	54.3	50.5
Total Delay (hr)	3.8	4.1	0.0	0.7	5.1	1.0	1.0	0.1	0.1	6.3	0.3	4.9
Total Del/Veh (s)	65.6	18.5	6.4	63.1	27.6	19.3	61.0	39.0	11.1	124.9	111.6	80.1
Stop Delay (hr)	3.5	2.6	0.0	0.7	4.0	0.9	1.0	0.1	0.1	5.9	0.3	4.5
Stop Del/Veh (s)	59.8	11.9	2.9	59.1	21.6	17.2	58.5	35.9	11.0	117.6	102.6	74.1

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	5.9
Denied Del/Veh (s)	8.9
Total Delay (hr)	27.5
Total Del/Veh (s)	40.9
Stop Delay (hr)	23.6
Stop Del/Veh (s)	35.1

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Denied Del/Veh (s)	0.2	0.0	0.0	2.9	0.5	0.4	3.7	0.6	0.6	3.7	0.8	0.7
Total Delay (hr)	0.5	6.8	1.0	1.0	4.1	0.4	1.0	0.3	0.5	1.9	0.6	0.3
Total Del/Veh (s)	53.9	28.6	24.4	58.1	21.2	12.3	30.1	29.0	13.5	36.1	32.7	16.3
Stop Delay (hr)	0.4	4.2	0.7	0.9	2.7	0.3	0.9	0.2	0.5	1.8	0.5	0.3
Stop Del/Veh (s)	47.2	17.7	16.0	53.4	14.1	9.3	27.0	25.1	11.7	32.7	28.5	14.5

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.7
Total Delay (hr)	18.4
Total Del/Veh (s)	26.1
Stop Delay (hr)	13.4
Stop Del/Veh (s)	19.0

Total Network Performance

Denied Delay (hr)	458.8
Denied Del/Veh (s)	158.9
Total Delay (hr)	479.8
Total Del/Veh (s)	172.1
Stop Delay (hr)	395.2
Stop Del/Veh (s)	141.7

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	70	623	455	208	280	185	294	316	286	125	579	511
Average Queue (ft)	34	547	368	105	130	85	168	195	173	115	322	253
95th Queue (ft)	143	788	848	171	225	157	266	292	270	145	535	467
Link Distance (ft)		625	625	956	956		776	776	776		608	608
Upstream Blk Time (%)		76	46								3	1
Queuing Penalty (veh)		0	0								0	0
Storage Bay Dist (ft)	150					250				100		
Storage Blk Time (%)	0	90					1			27	35	
Queuing Penalty (veh)	1	78					2			119	71	

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	L	LT	TR	L	L	T	T	TR	L	T
Maximum Queue (ft)	162	241	174	309	175	647	656	554	350	284	224	588
Average Queue (ft)	80	118	113	180	122	404	420	154	139	145	41	370
95th Queue (ft)	143	211	198	268	211	645	660	409	270	248	159	615
Link Distance (ft)	1228	1228		621		646	646	646	646	646		776
Upstream Blk Time (%)						2	2	0				1
Queuing Penalty (veh)						9	12	0				2
Storage Bay Dist (ft)			150		150						200	
Storage Blk Time (%)			1	18	2							41
Queuing Penalty (veh)			4	38	4							8

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	517	423	200
Average Queue (ft)	254	163	68
95th Queue (ft)	510	375	148
Link Distance (ft)	776	776	
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			200
Storage Blk Time (%)		1	0
Queuing Penalty (veh)		1	0

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	R	L	T	T	T	T
Maximum Queue (ft)	475	280	497	543	552	288	350	429	269	281	116
Average Queue (ft)	255	122	111	140	189	115	156	125	44	27	11
95th Queue (ft)	759	358	324	378	433	252	302	379	196	149	71
Link Distance (ft)	1211		572	572	572			646	646	646	646
Upstream Blk Time (%)	5		0	1	1			1			
Queuing Penalty (veh)	0		1	5	13			2			
Storage Bay Dist (ft)		450				275	575				
Storage Blk Time (%)	9	1			4	0		1			
Queuing Penalty (veh)	24	3			23	1		2			

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	TR	L	TR	R	T	T	T	R	L
Maximum Queue (ft)	346	368	383	167	125	576	578	879	889	892	893	333
Average Queue (ft)	194	251	51	44	102	502	503	765	823	839	513	258
95th Queue (ft)	339	360	245	106	171	653	652	986	963	957	1157	358
Link Distance (ft)			778	778		526	526	839	839	839	839	
Upstream Blk Time (%)			0			54	65	5	10	33	12	
Queuing Penalty (veh)			0			0	0	24	48	160	56	
Storage Bay Dist (ft)	350	350			100							325
Storage Blk Time (%)	0	4	0		2	85		35				2
Queuing Penalty (veh)	0	1	0		9	61		0				7

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (ft)	345	540	395	229	49
Average Queue (ft)	271	282	140	89	11
95th Queue (ft)	372	608	290	181	32
Link Distance (ft)		572	572	572	572
Upstream Blk Time (%)		7	0		
Queuing Penalty (veh)		31	0		
Storage Bay Dist (ft)	325				
Storage Blk Time (%)	10	6			
Queuing Penalty (veh)	34	36			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	337	350	718	690	181	190	199	325	322	279	364	340
Average Queue (ft)	298	337	627	364	133	144	127	141	157	122	277	257
95th Queue (ft)	429	389	889	770	200	211	224	277	318	279	416	351
Link Distance (ft)			677	677				315	315		279	279
Upstream Blk Time (%)			70	2				1	5	0	23	15
Queuing Penalty (veh)			0	0				7	25	0	97	67
Storage Bay Dist (ft)	325	325			175	175	175			275		
Storage Blk Time (%)	16	73	4		1	6	4	2		1	23	
Queuing Penalty (veh)	42	194	21		1	8	5	10		2	21	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B25	B25	SB	SB	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	L	L	T	T	T
Maximum Queue (ft)	362	360	67	341	345	497	498	229	244	366	329	107
Average Queue (ft)	285	227	47	153	183	170	193	129	135	147	143	8
95th Queue (ft)	391	417	62	398	427	529	556	225	244	352	287	55
Link Distance (ft)	279	279		243	243	468	468			839	839	839
Upstream Blk Time (%)	35	9		21	32	10	15			0		
Queuing Penalty (veh)	152	38		177	273	54	83			0		
Storage Bay Dist (ft)			25					225	225			
Storage Blk Time (%)		14	33					2	5	1		0
Queuing Penalty (veh)		62	99					5	11	3		0

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	95
Average Queue (ft)	22
95th Queue (ft)	69
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Latrobe Rd & Driveway

Movement	NB	NB
Directions Served	T	TR
Maximum Queue (ft)	506	512
Average Queue (ft)	129	144
95th Queue (ft)	468	502
Link Distance (ft)	491	491
Upstream Blk Time (%)	5	8
Queuing Penalty (veh)	43	71
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	125	673	74	112	1182	1224	106	369	387
Average Queue (ft)	94	307	27	13	355	399	21	150	177
95th Queue (ft)	172	562	63	58	922	953	67	315	339
Link Distance (ft)		660	453		1849	1849		491	491
Upstream Blk Time (%)		8			1	1			0
Queuing Penalty (veh)		0			0	0			0
Storage Bay Dist (ft)	100			200			195		
Storage Blk Time (%)	6	64			19			5	
Queuing Penalty (veh)	10	98			2			1	

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	B20	B20	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	T	T	L	TR	L
Maximum Queue (ft)	105	348	357	83	144	275	267	298	207	117	55	75
Average Queue (ft)	98	208	191	8	52	204	144	49	20	49	21	73
95th Queue (ft)	115	370	353	47	129	323	266	200	138	101	46	81
Link Distance (ft)		315	315			198	198	1217	1217	216	216	
Upstream Blk Time (%)		4	2			18	9					
Queuing Penalty (veh)		21	10			78	38					
Storage Bay Dist (ft)	80			110	120							50
Storage Blk Time (%)	42	7	14	0	0	29						75
Queuing Penalty (veh)	203	19	3	0	1	12						169

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	SB
Directions Served	TR
Maximum Queue (ft)	444
Average Queue (ft)	346
95th Queue (ft)	533
Link Distance (ft)	410
Upstream Blk Time (%)	39
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	19
Queuing Penalty (veh)	34

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	157	364	386	145	318	277	123	190	124	237
Average Queue (ft)	37	190	215	62	169	142	67	75	97	93
95th Queue (ft)	104	331	354	131	280	243	120	148	140	201
Link Distance (ft)		1217	1217		368	368		331		246
Upstream Blk Time (%)					0					1
Queuing Penalty (veh)					0					0
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)		17		0	17		3	4	17	3
Queuing Penalty (veh)		7		2	11		5	4	21	5

Network Summary

Network wide Queuing Penalty: 3216

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	250	53	35	1206	836	140
Future Volume (veh/h)	250	53	35	1206	836	140
Number	3	18	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	272	58	38	1311	909	152
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	344	307	72	2165	1498	250
Arrive On Green	0.19	0.19	0.04	0.61	0.49	0.49
Sat Flow, veh/h	1774	1583	1774	3632	3128	507
Grp Volume(v), veh/h	272	58	38	1311	530	531
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1773
Q Serve(g_s), s	7.5	1.6	1.1	11.8	11.2	11.2
Cycle Q Clear(g_c), s	7.5	1.6	1.1	11.8	11.2	11.2
Prop In Lane	1.00	1.00	1.00			0.29
Lane Grp Cap(c), veh/h	344	307	72	2165	873	875
V/C Ratio(X)	0.79	0.19	0.53	0.61	0.61	0.61
Avail Cap(c_a), veh/h	551	492	172	2336	873	875
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	19.8	17.4	24.2	6.2	9.4	9.4
Incr Delay (d2), s/veh	4.1	0.3	2.2	0.5	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.7	0.6	5.8	5.6	5.7
LnGrp Delay(d),s/veh	23.8	17.7	26.4	6.7	10.9	10.9
LnGrp LOS	C	B	C	A	B	B
Approach Vol, veh/h	330			1349	1061	
Approach Delay, s/veh	22.7			7.2	10.9	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		37.5			6.1	31.4		14.0
Change Period (Y+Rc), s		6.0			4.0	6.0		4.0
Max Green Setting (Gmax), s		34.0			5.0	25.0		16.0
Max Q Clear Time (g_c+I1), s		13.8			3.1	13.2		9.5
Green Ext Time (p_c), s		17.7			0.0	11.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.5
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	150	80	0	60	150	60	731	10	220	588	80
Future Volume (veh/h)	360	150	80	0	60	150	60	731	10	220	588	80
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	320	262	87	0	138	114	65	795	11	239	639	87
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	436	329	109	0	113	96	83	1105	15	277	1310	178
Arrive On Green	0.25	0.25	0.25	0.00	0.06	0.06	0.05	0.31	0.31	0.16	0.42	0.42
Sat Flow, veh/h	1774	1339	445	0	1863	1583	1774	3574	49	1774	3131	426
Grp Volume(v), veh/h	320	0	349	0	138	114	65	394	412	239	361	365
Grp Sat Flow(s),veh/h/ln	1774	0	1784	0	1863	1583	1774	1770	1854	1774	1770	1788
Q Serve(g_s), s	13.7	0.0	15.1	0.0	5.0	5.0	3.0	16.3	16.3	10.8	12.3	12.3
Cycle Q Clear(g_c), s	13.7	0.0	15.1	0.0	5.0	5.0	3.0	16.3	16.3	10.8	12.3	12.3
Prop In Lane	1.00		0.25	0.00		1.00	1.00		0.03	1.00		0.24
Lane Grp Cap(c), veh/h	436	0	438	0	113	96	83	547	573	277	740	748
V/C Ratio(X)	0.73	0.00	0.80	0.00	1.22	1.19	0.78	0.72	0.72	0.86	0.49	0.49
Avail Cap(c_a), veh/h	800	0	804	0	113	96	108	647	678	302	841	849
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	0.0	29.1	0.0	38.7	38.7	38.8	25.3	25.3	33.9	17.5	17.5
Incr Delay (d2), s/veh	2.4	0.0	3.4	0.0	155.1	149.9	23.3	3.2	3.0	20.7	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	7.8	0.0	7.4	6.2	2.0	8.4	8.7	6.9	6.0	6.1
LnGrp Delay(d),s/veh	31.0	0.0	32.5	0.0	193.7	188.6	62.1	28.4	28.3	54.5	18.0	18.0
LnGrp LOS	C		C		F	F	E	C	C	D	B	B
Approach Vol, veh/h		669			252			871			965	
Approach Delay, s/veh		31.8			191.4			30.9			27.0	
Approach LOS		C			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.8	30.7		10.0	7.9	39.7		24.7
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	14.0	30.1		5.0	5.0	39.1		37.1
Max Q Clear Time (g_c+I1), s	12.8	18.3		7.0	5.0	14.3		17.1
Green Ext Time (p_c), s	0.1	7.2		0.0	0.0	11.2		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	44.4
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	723	30	60	665	100	20	0	40	60	0	30
Future Volume (veh/h)	50	723	30	60	665	100	20	0	40	60	0	30
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	786	33	65	723	109	22	0	43	65	0	33
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	1720	72	69	1780	796	21	0	42	93	0	83
Arrive On Green	0.03	0.50	0.46	0.04	0.50	0.50	0.04	0.00	0.05	0.05	0.00	0.06
Sat Flow, veh/h	1774	3461	145	1774	3539	1583	556	0	1087	1774	0	1583
Grp Volume(v), veh/h	54	402	417	65	723	109	65	0	0	65	0	33
Grp Sat Flow(s),veh/h/ln	1774	1770	1837	1774	1770	1583	1643	0	0	1774	0	1583
Q Serve(g_s), s	1.3	6.3	6.4	1.6	5.5	1.6	1.7	0.0	0.0	1.5	0.0	0.9
Cycle Q Clear(g_c), s	1.3	6.3	6.4	1.6	5.5	1.6	1.7	0.0	0.0	1.5	0.0	0.9
Prop In Lane	1.00		0.08	1.00		1.00	0.34		0.66	1.00		1.00
Lane Grp Cap(c), veh/h	58	879	913	69	1780	796	63	0	0	93	0	83
V/C Ratio(X)	0.93	0.46	0.46	0.95	0.41	0.14	1.02	0.00	0.00	0.70	0.00	0.40
Avail Cap(c_a), veh/h	265	1177	1222	207	2238	1001	1131	0	0	248	0	222
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.7	7.0	7.1	20.6	6.7	5.7	20.4	0.0	0.0	20.0	0.0	19.4
Incr Delay (d2), s/veh	20.7	0.4	0.4	20.6	0.2	0.1	38.3	0.0	0.0	3.5	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.1	3.2	1.1	2.7	0.7	1.4	0.0	0.0	0.8	0.0	0.4
LnGrp Delay(d),s/veh	41.4	7.4	7.5	41.1	6.8	5.8	59.1	0.0	0.0	23.4	0.0	20.5
LnGrp LOS	D	A	A	D	A	A	F			C		C
Approach Vol, veh/h		873			897			65			98	
Approach Delay, s/veh		9.6			9.2			59.1			22.5	
Approach LOS		A			A			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	25.5		5.7	5.7	25.3		6.3
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	6.9	25.4		30.0	5.5	26.8		6.5
Max Q Clear Time (g_c+I1), s	3.3	7.5		3.7	3.6	8.4		3.5
Green Ext Time (p_c), s	0.0	11.0		0.2	0.0	11.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	730	113	130	460	0	295	10	350	0	10	30
Future Volume (veh/h)	20	730	113	130	460	0	295	10	350	0	10	30
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	793	123	141	500	0	321	11	380	0	11	33
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	417	1033	160	143	1761	0	355	16	542	116	45	134
Arrive On Green	0.34	0.34	0.33	0.08	0.50	0.00	0.20	0.35	0.32	0.00	0.11	0.08
Sat Flow, veh/h	894	3072	476	1774	3632	0	1774	45	1545	989	411	1234
Grp Volume(v), veh/h	22	457	459	141	500	0	321	0	391	0	0	44
Grp Sat Flow(s),veh/h/ln	894	1770	1779	1774	1770	0	1774	0	1590	989	0	1645
Q Serve(g_s), s	1.0	14.3	14.3	4.9	5.1	0.0	10.9	0.0	13.4	0.0	0.0	1.5
Cycle Q Clear(g_c), s	1.0	14.3	14.3	4.9	5.1	0.0	10.9	0.0	13.4	0.0	0.0	1.5
Prop In Lane	1.00		0.27	1.00		0.00	1.00		0.97	1.00		0.75
Lane Grp Cap(c), veh/h	417	595	598	143	1761	0	355	0	557	116	0	178
V/C Ratio(X)	0.05	0.77	0.77	0.98	0.28	0.00	0.90	0.00	0.70	0.00	0.00	0.25
Avail Cap(c_a), veh/h	434	629	632	143	1829	0	355	0	1248	568	0	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	18.4	18.5	28.4	9.1	0.0	24.2	0.0	18.2	0.0	0.0	26.0
Incr Delay (d2), s/veh	0.1	5.7	5.7	70.1	0.1	0.0	24.9	0.0	0.6	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	7.9	8.0	5.2	2.5	0.0	7.8	0.0	5.9	0.0	0.0	0.7
LnGrp Delay(d),s/veh	14.1	24.1	24.2	98.5	9.2	0.0	49.0	0.0	18.8	0.0	0.0	26.3
LnGrp LOS	B	C	C	F	A		D		B			C
Approach Vol, veh/h		938			641			712			44	
Approach Delay, s/veh		23.9			28.9			32.5			26.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	10.0	26.2		25.7		36.2	15.0	10.7
Change Period (Y+Rc), s	5.6	6.0		6.0		6.0	4.6	* 6
Max Green Setting (Gmax), s	4.4	21.4		46.6		31.4	10.4	* 33
Max Q Clear Time (g_c+I1), s	3.0	16.3		15.4		7.1	12.9	3.5
Green Ext Time (p_c), s	0.0	3.9		1.2		12.9	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Notes

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	840	10	0	537
Future Vol, veh/h	0	10	840	10	0	537
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	913	11	0	584

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	462	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	547	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	547	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	547	-
HCM Lane V/C Ratio	-	-	0.02	-
HCM Control Delay (s)	-	-	11.7	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	307	10	210	20	640	0	0	287	250
Future Volume (veh/h)	0	0	0	307	10	210	20	640	0	0	287	250
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	1863	1863
Adj Flow Rate, veh/h				342	0	228	22	696	0	0	312	272
Adj No. of Lanes				2	0	1	1	2	0	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				638	0	285	75	1270	0	0	823	368
Arrive On Green				0.18	0.00	0.18	0.04	0.36	0.00	0.00	0.23	0.23
Sat Flow, veh/h				3548	0	1583	1774	3632	0	0	3632	1583
Grp Volume(v), veh/h				342	0	228	22	696	0	0	312	272
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	1583
Q Serve(g_s), s				4.4	0.0	6.9	0.6	7.8	0.0	0.0	3.7	8.0
Cycle Q Clear(g_c), s				4.4	0.0	6.9	0.6	7.8	0.0	0.0	3.7	8.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				638	0	285	75	1270	0	0	823	368
V/C Ratio(X)				0.54	0.00	0.80	0.29	0.55	0.00	0.00	0.38	0.74
Avail Cap(c_a), veh/h				724	0	323	284	1925	0	0	1062	475
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	0.94	0.94	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				18.6	0.0	19.6	23.2	12.8	0.0	0.0	16.1	17.8
Incr Delay (d2), s/veh				0.3	0.0	10.4	0.8	0.1	0.0	0.0	1.3	12.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.2	0.0	3.8	0.3	3.8	0.0	0.0	2.0	4.8
LnGrp Delay(d),s/veh				18.9	0.0	30.1	24.0	12.9	0.0	0.0	17.5	30.2
LnGrp LOS				B		C	C	B			B	C
Approach Vol, veh/h					570			718			584	
Approach Delay, s/veh					23.3			13.3			23.4	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		24.7			6.3	18.4		14.8
Change Period (Y+Rc), s		6.8			* 4.2	6.8		5.8
Max Green Setting (Gmax), s		27.2			* 8	15.0		10.2
Max Q Clear Time (g_c+I1), s		9.8			2.6	10.0		8.9
Green Ext Time (p_c), s		2.8			0.0	1.7		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	320	20	359	340	494	100
Future Volume (veh/h)	320	20	359	340	494	100
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	1863
Adj Flow Rate, veh/h	348	22	390	370	537	0
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	547	252	548	1735	690	309
Arrive On Green	0.16	0.16	0.16	0.49	0.06	0.00
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583
Grp Volume(v), veh/h	348	22	390	370	537	0
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583
Q Serve(g_s), s	4.7	0.6	5.4	3.0	7.5	0.0
Cycle Q Clear(g_c), s	4.7	0.6	5.4	3.0	7.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	547	252	548	1735	690	309
V/C Ratio(X)	0.64	0.09	0.71	0.21	0.78	0.00
Avail Cap(c_a), veh/h	860	396	675	1763	772	345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.96	0.00
Uniform Delay (d), s/veh	19.7	17.9	19.9	7.3	22.3	0.0
Incr Delay (d2), s/veh	0.5	0.1	1.8	0.0	8.1	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	2.3	0.6	2.7	1.4	4.4	0.0
LnGrp Delay(d),s/veh	20.1	18.0	21.7	7.3	30.4	0.0
LnGrp LOS	C	B	C	A	C	
Approach Vol, veh/h	370			760	537	
Approach Delay, s/veh	20.0			14.7	30.4	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		31.3		13.8	14.8	16.6		
Change Period (Y+Rc), s		6.8		5.8	6.8	* 6.8		
Max Green Setting (Gmax), s		24.9		12.5	9.8	* 11		
Max Q Clear Time (g_c+I1), s		5.0		6.7	7.4	9.5		
Green Ext Time (p_c), s		1.7		0.4	0.6	0.3		

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Notes

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-Term_AM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	Latrobe Road from White Rock to Golden Foothill
Units:	U.S. Customary

Direction 1: NB

LOS and Performance Measures

Flow rate, v_p	1447	pc/h/ln
Capacity, C	4192	pc/h/ln
Speed, S	54.8	mi/h
Density, D	13.2	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1305	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	55.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	54.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	54.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	54.8	mi/h
Capacity, c	2096	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	2096	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1305	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	724	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	724	pc/h/ln
Free-Flow Speed, FFS	55.0	mi/h
Capacity, c	2096	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	54.8	mi/h
Density, D	13.2	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1305	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	709	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	3.00	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:51:35

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-Term_AM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	Latrobe Road from White Rock to Golden Foothill
Units:	U.S. Customary

Direction 2: SB

LOS and Performance Measures

Flow rate, v_p	2093	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	44.8	mi/h
Density, D	23.3	pc/mi/ln
Level of Service, LOS	C	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	0.3	access points/mi
Demand Volume, V	1887	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	44.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	44.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	44.8	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1887	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	1046	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	1046	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	44.8	mi/h
Density, D	23.3	pc/mi/ln
Level of service, LOS	C	

Bicycle Level of Service

Hourly Directional Volume, V	1887	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	1026	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	3.18	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:52:19

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-Term_AM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	568	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.2	mi/h
Density, D	6.6	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	512	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	512	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	284	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	284	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	6.6	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	512	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	278	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.52	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:56:09

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-Term_AM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1281	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.4	mi/h
Density, D	14.7	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	1155	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1155	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	640	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	640	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	14.7	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1155	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	628	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.93	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:56:52

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	AM EB
Highway	White Rock Road
From/To	Post to Valley View
Jurisdiction	
Analysis Year	Near-Term 2025
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.92	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 463 veh/h
Opposing direction volume, Vo 1245 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.2	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.996	1.000
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	505 pc/h	1353 pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATSd	27.6	mi/h
Percent Free Flow Speed, PFFS	64.5	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	503	pc/h	1353	pc/h
Base percent time-spent-following,(note-4) BPTSFd	61.2	%		
Adjustment for no-passing zones, fnp	16.2			
Percent time-spent-following, PTSFd	65.6	%		

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.30	
Peak 15-min vehicle-miles of travel, VMT15	38	veh-mi
Peak-hour vehicle-miles of travel, VMT60	139	veh-mi
Peak 15-min total travel time, TT15	1.4	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	27.6	mi/h
Percent time-spent-following, PTSFd (from above)	65.6	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	503.3
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.40
Bicycle LOS	B

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	AM WB
Highway	White Rock Road
From/To	Valley View to Post
Jurisdiction	
Analysis Year	Near-Term 2025
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.92	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 1245 veh/h
Opposing direction volume, Vo 463 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.2
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	1.000	0.996
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	1353 pc/h	505 pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	2.2	mi/h
Average travel speed, ATSd	26.1	mi/h
Percent Free Flow Speed, PFFS	61.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	1353 pc/h	503 pc/h
Base percent time-spent-following,(note-4) BPTSFd	83.3 %	
Adjustment for no-passing zones, fnp	16.2	
Percent time-spent-following, PTSFd	95.1 %	

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.80	
Peak 15-min vehicle-miles of travel, VMT15	101	veh-mi
Peak-hour vehicle-miles of travel, VMT60	374	veh-mi
Peak 15-min total travel time, TT15	3.9	veh-h
Capacity from ATS, CdATS	1693	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1693	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	26.1	mi/h
Percent time-spent-following, PTSFd (from above)	95.1	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	1353.3
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.90
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-Term_PM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	Latrobe Road from White Rock to Golden Foothill
Units:	U.S. Customary

Direction 1: NB

LOS and Performance Measures

Flow rate, v_p	1903	pc/h/ln
Capacity, C	4192	pc/h/ln
Speed, S	54.8	mi/h
Density, D	17.4	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1716	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	55.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	54.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	54.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	54.8	mi/h
Capacity, c	2096	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	2096	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1716	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	952	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	952	pc/h/ln
Free-Flow Speed, FFS	55.0	mi/h
Capacity, c	2096	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	54.8	mi/h
Density, D	17.4	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1716	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	933	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	3.14	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:58:28

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-Term_PM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	Latrobe Road from White Rock to Golden Foothill
Units:	U.S. Customary

Direction 2: SB

LOS and Performance Measures

Flow rate, v_p	1238	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	44.8	mi/h
Density, D	13.8	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	0.3	access points/mi
Demand Volume, V	1116	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	44.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	44.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	44.8	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1116	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	619	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	619	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	44.8	mi/h
Density, D	13.8	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1116	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	607	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.92	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:58:49

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-Term_PM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	1352	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.2	mi/h
Density, D	15.6	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1219	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1219	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	676	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	676	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	15.6	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1219	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	662	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.96	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 12:01:12

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-Term_PM_WR1.xhm	
Analyst:		
Agency:		
Jurisdiction:		
Date:	7/14/2017	
Analysis Year:	2017	
Time Period Analyzed:		
Project Description:	White Rock Road from Latrobe to Post	
Units:	U.S. Customary	

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	980	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.4	mi/h
Density, D	11.3	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	884	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	884	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	490	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	490	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	11.3	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	884	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	480	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.80	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 12:01:31

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	PM EB
Highway	White Rock Road
From/To	Post to Valley View
Jurisdiction	
Analysis Year	Near-Term 2025
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.92	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 1199 veh/h
Opposing direction volume, Vo 844 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	1.000		1.000	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1303	pc/h	917	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	24.4	mi/h
Percent Free Flow Speed, PFFS	57.0	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	1303 pc/h	917 pc/h
Base percent time-spent-following,(note-4) BPTSFd	83.8 %	
Adjustment for no-passing zones, fnp	14.8	
Percent time-spent-following, PTSFd	92.5 %	

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.77	
Peak 15-min vehicle-miles of travel, VMT15	98	veh-mi
Peak-hour vehicle-miles of travel, VMT60	360	veh-mi
Peak 15-min total travel time, TT15	4.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	24.4	mi/h
Percent time-spent-following, PTSFd (from above)	92.5	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	1303.3
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.89
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	PM WB
Highway	White Rock Road
From/To	Valley View to Post
Jurisdiction	
Analysis Year	Near-Term 2025
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.92	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 844 veh/h
Opposing direction volume, Vo 1199 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	1.000	1.000
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	917 pc/h	1303 pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATSd	24.7	mi/h
Percent Free Flow Speed, PFFS	57.7	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	917 pc/h	1303 pc/h
Base percent time-spent-following,(note-4) BPTSFd	78.5 %	
Adjustment for no-passing zones, fnp	14.8	
Percent time-spent-following, PTSFd	84.6 %	

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.54	
Peak 15-min vehicle-miles of travel, VMT15	69	veh-mi
Peak-hour vehicle-miles of travel, VMT60	253	veh-mi
Peak 15-min total travel time, TT15	2.8	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	24.7	mi/h
Percent time-spent-following, PTSFd (from above)	84.6	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	917.4
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.71
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

	Segment Inputs				Near Term (2025) Conditions													
					Flow Inputs		AM LOS Performance Measures						PM LOS Performance Measures					
		Length	Number of Lanes	Interchange Density	AM Peak	PM Peak	V_p	FFS		S	D	LOS	V_p	FFS		S	D	LOS
		(ft)	(N)	(I/mi)	(veh/h)	(veh/h)	(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)		(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)	
EB	West of Latrobe Rd SB Off Ramp	6690	3	0.33	2,903	4,094	1062.33	74.12	75	74.957	14.173	B	1498.167	74.12	75	72.2528	20.7	C
EB	Latrobe Rd NB Off Ramp to Latrobe Rd On Ramp	1990	3	0.50	1,473	3,026	539.033	73.6	75	72.6477	7.4198	A	1107.341	73.6	75	74.8725	14.79	B
EB	Silva Valley Pkwy SB/NB Off Ramp to Silva Valley Pkwy NB/SB On Ramp	2375	3	0.50	1,899	3,525	694.924	73.6	75	73.9697	9.3947	A	1289.946	73.6	75	74.0694	17.415	B
EB	East of Silva Valley Pkwy NB/SB On Ramp	3400	3	0.50	2,185	3,984	799.583	73.6	75	74.5554	10.725	A	1457.913	73.6	75	72.6788	20.06	C
WB	Silva Valley Pkwy NB/SB Off Ramp to Silva Valley Pkwy SB/NB On Ramp	2350	2	0.50	3,064	2,261	1681.87	73.6	75	69.853	24.077	C	1241.092	73.6	75	74.3566	16.691	B
WB	El Dorado Hills Blvd Off Ramp to El Dorado Hills Blvd On Ramp	3565	2	0.50	3,128	2,253	1717	73.6	75	69.309	24.773	C	1236.701	73.6	75	74.3798	16.627	B
WB	West of El Dorado Hills Blvd On Ramp	5890	2	0.33	4,337	3,713	2380.64	74.12	75	53.8989	44.169	E	2038.114	74.12	75	63.0701	32.315	D
Univeral	Weaving Segments	2000	3	0.50	2,049	3,865	749.815	73.6	75	74.3071	10.091	A						
PHF	0.92	5500	2	0.33	3,782	2,788	2075.99	74.13	75	62.1837	33.385	D	1530.37	74.13	75	71.8861	21.289	C
(P_T)	2%	3425	3	0.50	3,684	2,541							929.8587	73.6	75	74.9455	12.407	B
f_{HV}	0.99009901																	

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

		Segment Inputs			Near Term (2025) Conditions																											
					AM Flow Inputs			AM LOS Performance Measures												PM Flow Inputs			PM LOS Performance Measures											
		Number of Lanes	Number of Ramp Lanes	Length of Acceleration Lane (L_a)	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	v_R/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	v_R/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
		(N)		(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/h)	(pc/h)			(pc/h/ln)					(pc/mi/ln)		(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/hr)	(pc/h)			(pc/h/ln)					(pc/mi/ln)	
EB	Latrobe Rd On Ramp	3	1	110	2049	1473	576	2249	1617	632	46	0.5806	938.85	7200	339	704	939	0.3124	16.75	B	3865	3026	839	4243	3322	921	95	0.5806	1928.7	7200	697	1447	1929	0.5893	26.59	C
	Silva Valley On Ramp	3	1	550	2185	1899	286	2399	2085	314	60	0.5929	1236.1	7200	424	927	1236	0.3332	13.972	B	3984	3525	459	4374	3870	504	111	0.5929	2294.4	7200	788	1721	2294	0.6075	23.622	C
WB	El Dorado Hills Blvd On Ramp	2	1	795	4337	3128	1209	4761	3434	1327	98	1	3434	4800	0	2576	3434	0.9919	37.018	E	3713	2253	1460	4076	2473	1603	71	1	2473.4	4800	0	1855	2473	0.8492	31.548	D
	Silva Valley On Ramp	2	1	800	3684	3064	620	4044	3364	681	96	1	3363.7	4800	0	2523	3364	0.8426	31.692	D	2541	2261	280	2790	2482	307	71	1	2482.2	4800	0	1862	2482	0.5812	22.076	C

Universal Inputs:

Length	1500	(ft)
S_{FF}	70	(mi/h)
S_{FR}	35	(mi/h)
PHF	0.92	
(P_T)	2%	
f_{HV}	0.99009901	

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

	Segment Inputs				Near Term (2025) Conditions																							
					AM Flow Inputs			AM LOS Performance Measures										PM Flow Inputs			PM LOS Performance Measures									
		Number of Lanes	Number of Ramp Lanes	L_{EQ}	Length of Deceleration Lane (L_D)	Downstream Volume	Upstream Volume	Ramp Volume	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
		(N)		(ft)	(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)		(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)	
EB	Latrobe SB Off Ramp	3	1	497	140	1733	2903	1170	285.435	3187	1284.5	0.436	2114	7200	537	1585	2114	0.4426	21.172	C	3526	4094	568	548.913	4494.5	623.57	0.436	2311.3	7200	1092	1733	2311	0.6242	22.869	C
	Latrobe NB Off Ramp	3	1	-	140	1473	1733	260	-	1902.5	285.43	0.6993	1416.3	7200	486	1062	1416	0.2642	15.172	B	3026	3526	500	-	3870.9	548.91	0.638	2668.3	7200	1203	2001	2668	0.5376	25.939	C
	Silva Valley SB Off Ramp	3	1	-	150	1899	2049	150	-	2249.4	164.67	0.6962	1616.1	7200	317	1212	1616	0.3124	16.8	B	3525	3865	340	-	4243.1	373.26	0.6368	2837.4	7200	1406	2128	2837	0.5893	27.304	C
WB	El Dorado Hills Blvd Off Ramp	3	1	-	190	3128	3684	556	-	4044.4	610.39	0.6308	2776.6	7200	1268	2082	2777	0.5617	26.421	C	2253	2541	288	-	2789.6	316.17	0.6757	1987.5	7200	802	1491	1987	0.3874	19.634	B
	Silva Valley NB Off Ramp	3	1	-	150	3064	3782	718	-	4152	788.24	0.6199	2873.6	7200	1278	2155	2874	0.5767	27.615	C	2261	2788	527	-	3060.7	578.55	0.6569	2209	7200	852	1657	2209	0.4251	21.9	C

Universal Inputs:

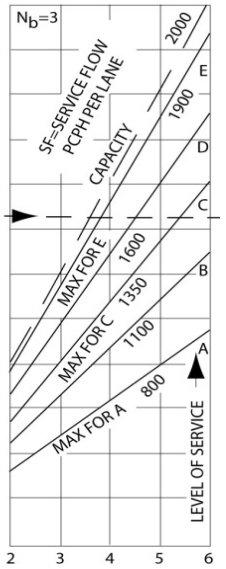
Leng	1500	(ft)
S_{FF}	70	(mi/h)
S_{RA}	35	(mi/h)
PHF	0.92	
(P_T)	2%	
f_{HV}	0.99009901	

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

EB US-50, East of Latrobe Rd On Ramp, Near-Term (2024) Conditons (PM)

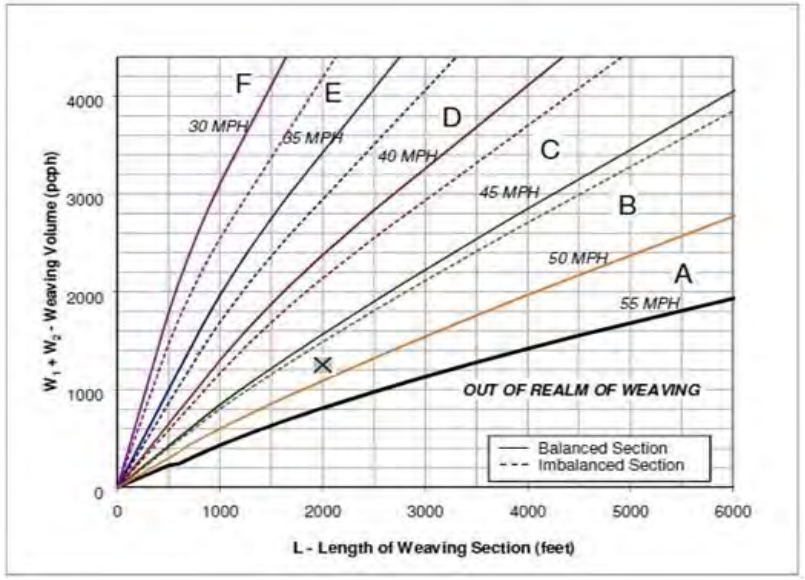
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS



Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	3,865	Volume (vph)	839	Volume (vph)	340
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,904	Volume (pcph)	847	Volume (pcph)	343

W1 + W2	1,191
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	47.0
Weaving Intensity Factor (k)	1.60
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,027
Level of Service (LOS)	B



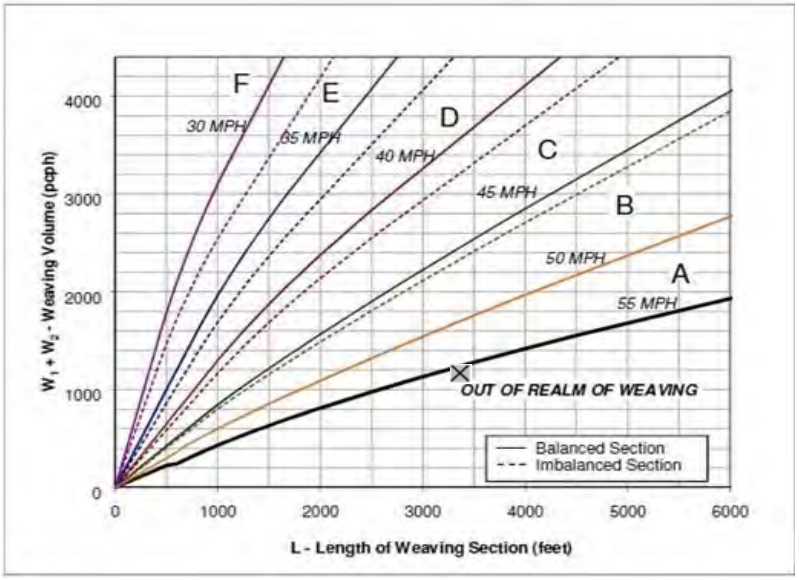
Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

WB US-50, East of El Dorado Hills Blvd Off Ramp, Near-Term (2024) Conditons (AM)

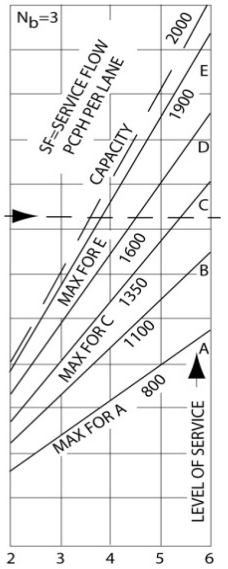
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	3,684	Volume (vph)	620	Volume (vph)	556
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,721	Volume (pcph)	626	Volume (pcph)	562

W1 + W2	1,188
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (Sw, mph)	52.8
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	930
Level of Service (LOS)	B



Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS



Appendix E

Analysis Worksheets for
Near-Term (2025) plus Proposed Project Conditions

Montano de El Dorado — Near Term (2025) Plus Project Conditions

SimTraffic Simulation Summary — AM Peak

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	8668	8515	8882	8633	8650	8600	8702
Vehs Exited	8588	8322	8806	8644	8564	8527	8563
Starting Vehs	376	382	410	452	438	445	464
Ending Vehs	456	575	486	441	524	518	603
Travel Distance (mi)	5703	5575	5838	5738	5684	5678	5681
Travel Time (hr)	822.4	850.3	777.7	848.6	751.7	786.3	962.9
Total Delay (hr)	646.5	678.3	597.6	672.3	576.7	611.7	787.9
Total Stops	17247	17156	17599	17501	17667	17625	18683
Fuel Used (gal)	370.5	372.4	366.0	378.0	354.3	362.5	401.9

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	8925	8507	8738	8681
Vehs Exited	8724	8367	8603	8569
Starting Vehs	415	398	386	420
Ending Vehs	616	538	521	528
Travel Distance (mi)	5811	5556	5740	5700
Travel Time (hr)	852.2	846.2	841.4	834.0
Total Delay (hr)	673.1	675.0	665.1	658.4
Total Stops	18674	16860	17118	17618
Fuel Used (gal)	380.6	371.6	376.8	373.5

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2125	2160	2282	2149	2219	2115	2066
Vehs Exited	2039	2048	2228	2160	2195	2091	2110
Starting Vehs	376	382	410	452	438	445	464
Ending Vehs	462	494	464	441	462	469	420
Travel Distance (mi)	1365	1400	1490	1402	1457	1422	1405
Travel Time (hr)	122.5	130.6	130.6	146.5	129.4	126.3	147.2
Total Delay (hr)	80.3	87.5	84.5	103.3	84.7	82.7	104.0
Total Stops	3982	4192	4488	4210	4370	4382	4018
Fuel Used (gal)	71.7	74.4	78.1	78.8	76.6	74.3	78.5

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2241	2087	2171	2163
Vehs Exited	2176	2055	2073	2114
Starting Vehs	415	398	386	420
Ending Vehs	480	430	484	454
Travel Distance (mi)	1436	1373	1388	1414
Travel Time (hr)	129.7	126.7	132.6	132.2
Total Delay (hr)	85.4	84.4	89.8	88.7
Total Stops	4178	3804	4047	4168
Fuel Used (gal)	75.9	73.0	75.5	75.7

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2302	2193	2291	2171	2249	2183	2289
Vehs Exited	2226	2157	2261	2165	2181	2203	2132
Starting Vehs	462	494	464	441	462	469	420
Ending Vehs	538	530	494	447	530	449	577
Travel Distance (mi)	1498	1459	1506	1443	1471	1463	1428
Travel Time (hr)	187.5	187.5	172.9	204.6	169.3	175.0	221.7
Total Delay (hr)	141.3	142.6	126.5	160.4	123.9	129.9	177.7
Total Stops	4725	4256	4456	4127	4658	4416	4762
Fuel Used (gal)	90.8	89.8	87.8	93.0	85.7	86.9	96.2

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2292	2239	2183	2238
Vehs Exited	2217	2142	2188	2189
Starting Vehs	480	430	484	454
Ending Vehs	555	527	479	507
Travel Distance (mi)	1516	1454	1469	1471
Travel Time (hr)	200.9	197.0	194.9	191.1
Total Delay (hr)	154.3	152.3	149.8	145.9
Total Stops	4624	4531	4445	4503
Fuel Used (gal)	94.3	91.4	91.5	90.7

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2121	2022	2178	2207	2134	2179	2208
Vehs Exited	2145	2018	2152	2176	2132	2127	2205
Starting Vehs	538	530	494	447	530	449	577
Ending Vehs	514	534	520	478	532	501	580
Travel Distance (mi)	1410	1322	1437	1472	1410	1439	1465
Travel Time (hr)	235.5	242.1	221.4	238.6	204.1	218.7	270.1
Total Delay (hr)	192.0	201.0	177.0	193.4	160.8	174.6	224.8
Total Stops	4331	4232	4402	4593	4542	4561	5084
Fuel Used (gal)	98.9	97.9	97.0	101.9	91.7	96.9	108.5

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2208	2082	2182	2153
Vehs Exited	2201	2123	2156	2140
Starting Vehs	555	527	479	507
Ending Vehs	562	486	505	516
Travel Distance (mi)	1463	1385	1423	1423
Travel Time (hr)	251.4	241.0	237.4	236.0
Total Delay (hr)	206.2	198.2	193.5	192.2
Total Stops	5040	4274	4209	4526
Fuel Used (gal)	104.1	99.7	99.9	99.7

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2120	2140	2131	2106	2048	2123	2139
Vehs Exited	2178	2099	2165	2143	2056	2106	2116
Starting Vehs	514	534	520	478	532	501	580
Ending Vehs	456	575	486	441	524	518	603
Travel Distance (mi)	1429	1394	1405	1421	1346	1354	1382
Travel Time (hr)	276.9	290.0	252.8	258.9	248.9	266.3	323.9
Total Delay (hr)	232.9	247.1	209.5	215.1	207.3	224.4	281.4
Total Stops	4209	4476	4253	4571	4097	4266	4819
Fuel Used (gal)	109.1	110.3	103.1	104.3	100.3	104.4	118.8

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2184	2099	2202	2129
Vehs Exited	2130	2047	2186	2122
Starting Vehs	562	486	505	516
Ending Vehs	616	538	521	528
Travel Distance (mi)	1396	1344	1460	1393
Travel Time (hr)	270.1	281.5	276.5	274.6
Total Delay (hr)	227.1	240.1	231.9	231.7
Total Stops	4832	4251	4417	4416
Fuel Used (gal)	106.4	107.4	109.9	107.4

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	33.0	1.8
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.3	0.3	0.0	0.0	0.0	78.0	76.4	76.3
Total Delay (hr)	1.1	2.0	1.1	1.2	1.7	1.2	9.1	3.8	0.0	3.9	13.7	0.7
Total Del/Veh (s)	75.8	100.7	25.0	43.3	51.1	33.1	256.4	17.9	10.9	79.0	32.2	28.4
Stop Delay (hr)	1.0	1.9	1.0	1.1	1.5	1.0	8.9	2.4	0.0	3.6	9.3	0.5
Stop Del/Veh (s)	70.2	92.3	23.4	40.4	44.6	29.3	250.7	11.2	8.2	73.1	21.8	22.3

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	38.7
Denied Del/Veh (s)	41.8
Total Delay (hr)	39.5
Total Del/Veh (s)	42.8
Stop Delay (hr)	32.3
Stop Del/Veh (s)	35.0

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.2	1.3	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.8	0.7	0.3	2.1	3.3	0.7	4.8	1.9	0.2	0.5	17.4	2.7
Total Del/Veh (s)	22.3	23.0	3.6	63.5	75.4	46.9	31.3	9.5	5.8	59.3	49.4	18.4
Stop Delay (hr)	0.7	0.6	0.0	2.0	3.1	0.6	3.8	0.6	0.1	0.4	12.3	1.3
Stop Del/Veh (s)	19.8	19.1	0.0	58.6	69.2	43.0	24.9	3.1	2.3	47.9	34.9	8.8

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.1
Total Delay (hr)	35.5
Total Del/Veh (s)	31.0
Stop Delay (hr)	25.5
Stop Del/Veh (s)	22.3

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.5	0.0	0.0	0.0	0.0	0.0	0.5
Denied Del/Veh (s)	1.5	0.2	0.0	0.1	0.0	0.0	0.4
Total Delay (hr)	7.2	0.1	3.3	0.9	1.9	7.2	20.5
Total Del/Veh (s)	21.1	0.9	10.4	9.6	28.0	17.8	15.8
Stop Delay (hr)	3.2	0.0	1.3	0.4	1.4	3.2	9.4
Stop Del/Veh (s)	9.4	0.0	3.9	4.0	20.3	7.9	7.3

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	4.1	0.1	0.1	3.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.5	0.2	0.0	1.5	0.5	2.2	0.9	5.1	0.1	7.5	6.8	0.5
Total Del/Veh (s)	54.5	57.1	10.0	51.7	56.2	22.4	64.7	17.1	3.1	51.0	13.7	5.0
Stop Delay (hr)	0.5	0.2	0.0	1.4	0.5	2.0	0.9	3.1	0.0	6.4	3.3	0.2
Stop Del/Veh (s)	52.5	54.1	10.1	47.6	51.1	20.5	60.8	10.3	1.7	43.8	6.6	1.9

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.1
Total Delay (hr)	25.7
Total Del/Veh (s)	20.9
Stop Delay (hr)	18.3
Stop Del/Veh (s)	14.9

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Denied Delay (hr)	0.3	0.0	0.0	0.0	0.0	0.0	0.0	2.0	5.4	1.9	0.0	0.0
Denied Del/Veh (s)	3.5	0.6	0.4	0.0	0.0	0.0	0.0	60.0	22.8	23.2	0.0	0.0
Total Delay (hr)	7.4	1.6	0.4	10.5	4.3	0.2	0.5	14.2	5.0	0.4	1.7	7.7
Total Del/Veh (s)	95.9	46.1	17.9	86.3	51.5	7.9	386.6	419.9	21.6	5.5	50.2	22.0
Stop Delay (hr)	6.9	1.4	0.4	9.6	3.5	0.2	0.5	14.3	4.3	0.4	1.4	3.5
Stop Del/Veh (s)	89.9	39.5	16.0	78.7	42.1	6.4	388.6	420.8	18.4	5.1	42.7	10.0

5: Latrobe Road & White Rock Road Performance by movement

Movement	SBR	All
Denied Delay (hr)	0.0	9.5
Denied Del/Veh (s)	0.0	7.8
Total Delay (hr)	1.4	55.5
Total Del/Veh (s)	10.1	44.7
Stop Delay (hr)	0.6	47.0
Stop Del/Veh (s)	4.5	37.9

6: Latrobe Rd & Driveway Performance by movement

Movement	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.1	5.4	0.1	0.1	1.2	6.8
Total Del/Veh (s)	13.3	15.1	10.8	14.0	2.5	7.9
Stop Delay (hr)	0.1	4.2	0.1	0.0	0.1	4.5
Stop Del/Veh (s)	13.3	11.9	7.8	11.7	0.2	5.3

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.6
Denied Del/Veh (s)	0.6	0.3	0.1	0.1	0.1	3.9	1.6	2.0	0.0	0.0	0.7
Total Delay (hr)	1.7	0.1	0.1	0.1	0.0	0.6	4.8	0.0	8.8	2.0	18.3
Total Del/Veh (s)	34.2	29.7	40.9	38.8	15.1	50.1	15.1	10.0	21.9	23.8	20.7
Stop Delay (hr)	1.5	0.1	0.1	0.1	0.0	0.5	3.6	0.0	5.2	1.3	12.5
Stop Del/Veh (s)	30.6	27.1	38.7	35.3	14.3	46.7	11.4	7.7	13.0	14.6	14.2

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	5.8	1.9	0.1	0.1	0.1	3.8	0.4	0.3
Total Delay (hr)	2.0	1.3	0.0	0.7	8.8	0.5	0.9	0.0	0.0	0.7	0.1	0.8
Total Del/Veh (s)	65.5	11.8	3.1	94.5	48.9	13.1	68.0	35.5	5.2	59.4	30.3	19.4
Stop Delay (hr)	1.9	0.9	0.0	0.7	7.4	0.4	0.9	0.0	0.0	0.7	0.1	0.7
Stop Del/Veh (s)	61.7	8.7	1.6	89.5	41.6	11.1	65.5	32.8	5.2	56.0	26.1	17.7

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	1.2
Denied Del/Veh (s)	2.6
Total Delay (hr)	15.8
Total Del/Veh (s)	35.3
Stop Delay (hr)	13.8
Stop Del/Veh (s)	30.8

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	30.0	236.8	25.4	0.2	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	824.6	820.6	802.4	3.7	0.7	0.8	3.9	0.2	0.2
Total Delay (hr)	0.7	1.3	0.1	2.6	25.0	2.9	1.7	0.2	0.3	0.3	0.1	0.3
Total Del/Veh (s)	39.6	12.8	8.6	125.6	151.8	151.1	36.3	24.1	9.7	31.3	31.5	20.9
Stop Delay (hr)	0.6	0.7	0.1	2.6	25.1	3.0	1.6	0.2	0.2	0.3	0.1	0.3
Stop Del/Veh (s)	36.6	7.6	6.0	125.1	152.9	157.4	33.0	19.8	7.8	29.2	27.9	20.7

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	292.5
Denied Del/Veh (s)	486.4
Total Delay (hr)	35.5
Total Del/Veh (s)	78.6
Stop Delay (hr)	34.8
Stop Del/Veh (s)	77.2

Total Network Performance

Denied Delay (hr)	343.3
Denied Del/Veh (s)	132.5
Total Delay (hr)	315.1
Total Del/Veh (s)	124.7
Stop Delay (hr)	244.3
Stop Del/Veh (s)	96.7

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	140	191	154	137	316	265	343	336	161	125	340	347
Average Queue (ft)	28	108	69	56	144	193	182	128	65	110	302	320
95th Queue (ft)	110	184	128	116	258	322	486	342	132	152	381	368
Link Distance (ft)		932	932	482	482		774	774	774		309	309
Upstream Blk Time (%)					0						21	37
Queuing Penalty (veh)					0						0	0
Storage Bay Dist (ft)	150					250				100		
Storage Blk Time (%)	0	6				33	1			26	26	
Queuing Penalty (veh)	0	2				86	1			204	45	

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	L	LT	TR	L	L	T	T	TR	L	T
Maximum Queue (ft)	105	122	172	292	175	247	245	144	140	120	225	540
Average Queue (ft)	52	61	66	161	108	141	140	53	59	62	65	311
95th Queue (ft)	91	108	168	262	205	214	213	109	115	106	213	500
Link Distance (ft)	1228	1228		621		646	646	646	646	646		774
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)			150		150						200	
Storage Blk Time (%)			0	16	2						0	43
Queuing Penalty (veh)			0	29	4						0	13

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	513	409	225
Average Queue (ft)	267	193	146
95th Queue (ft)	458	335	236
Link Distance (ft)	774	774	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			200
Storage Blk Time (%)		2	1
Queuing Penalty (veh)		13	6

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	R	L	T	T	T	T
Maximum Queue (ft)	328	308	183	215	273	224	149	239	269	286	162
Average Queue (ft)	215	174	52	83	113	74	67	98	77	69	59
95th Queue (ft)	300	283	120	155	212	156	121	189	177	172	123
Link Distance (ft)	1211		572	572	572			646	646	646	646
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)		450				275	575				
Storage Blk Time (%)					0	0					
Queuing Penalty (veh)					1	0					

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	28	77	40	26	124	229	186	60	70	148	231	261
Average Queue (ft)	2	28	8	2	81	109	84	17	27	42	77	109
95th Queue (ft)	13	65	30	12	136	195	161	46	59	106	167	209
Link Distance (ft)			778	778		526	526			839	839	839
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					5	12						
Queuing Penalty (veh)					11	13						

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	33	282	284	296	321	330	253
Average Queue (ft)	8	168	187	141	166	151	56
95th Queue (ft)	23	252	258	253	271	266	144
Link Distance (ft)	839			572	572	572	572
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		0	0	0			
Queuing Penalty (veh)		0	0	0			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	UL	T	T
Maximum Queue (ft)	268	303	179	158	182	191	199	339	91	278	367	277
Average Queue (ft)	145	198	61	73	160	173	167	237	36	264	317	112
95th Queue (ft)	276	303	141	137	208	216	249	414	71	317	450	236
Link Distance (ft)			372	372				315	315		278	278
Upstream Blk Time (%)			0					8		49	72	0
Queuing Penalty (veh)			0					49		0	240	1
Storage Bay Dist (ft)	325	325			175	175	175			275		
Storage Blk Time (%)	0	1			3	18	14	0		66	72	
Queuing Penalty (veh)	0	1			7	37	29	2		148	117	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B25	B25	SB	SB	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	L	L	T	T	T
Maximum Queue (ft)	193	154	57	334	302	463	496	86	179	376	379	343
Average Queue (ft)	94	37	36	219	90	196	181	28	38	129	140	36
95th Queue (ft)	167	114	60	444	290	529	518	66	118	300	312	204
Link Distance (ft)	278	278		243	243	468	468			839	839	839
Upstream Blk Time (%)	0			58	3	17	6					0
Queuing Penalty (veh)	0			382	21	72	26					0
Storage Bay Dist (ft)			25					225	225			
Storage Blk Time (%)		2	7							2		0
Queuing Penalty (veh)		5	16							2		0

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	214
Average Queue (ft)	32
95th Queue (ft)	119
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 6: Latrobe Rd & Driveway

Movement	WB	NB	NB	SB	SB	SB	B80	B80
Directions Served	R	T	TR	L	T	T	T	T
Maximum Queue (ft)	36	340	362	51	138	159	31	61
Average Queue (ft)	15	89	92	10	10	17	1	2
95th Queue (ft)	40	373	387	37	71	93	29	45
Link Distance (ft)	261	491	491		468	468	278	278
Upstream Blk Time (%)		3	3				0	0
Queuing Penalty (veh)		17	20				0	0
Storage Bay Dist (ft)				250				
Storage Blk Time (%)					0			
Queuing Penalty (veh)					0			

Intersection: 7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	SB	SB
Directions Served	L	LTR	LTR	L	T	TR	T	TR
Maximum Queue (ft)	105	221	70	157	415	436	503	510
Average Queue (ft)	32	94	27	38	149	159	290	323
95th Queue (ft)	91	175	61	104	340	352	497	527
Link Distance (ft)		660	453		739	739	491	491
Upstream Blk Time (%)					1	2	1	1
Queuing Penalty (veh)					0	0	7	13
Storage Bay Dist (ft)	100			200				
Storage Blk Time (%)	0	11		0	5		17	
Queuing Penalty (veh)	0	10		0	2		0	

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	B20	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	T	L	TR	L	TR
Maximum Queue (ft)	104	196	146	65	145	286	178	1234	119	52	75	170
Average Queue (ft)	77	60	64	8	46	267	58	1090	43	13	38	76
95th Queue (ft)	119	151	117	38	130	279	135	1491	95	38	77	147
Link Distance (ft)		315	315			198	198	1217	216	216		410
Upstream Blk Time (%)						63	0	12				
Queuing Penalty (veh)						396	2	146				
Storage Bay Dist (ft)	80			110	120						50	
Storage Blk Time (%)	24	1	1	0	0	66					14	23
Queuing Penalty (veh)	48	1	0	0	1	34					21	9

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	108	149	156	145	418	418	124	259	70	73
Average Queue (ft)	44	61	81	121	388	387	87	81	24	27
95th Queue (ft)	87	123	141	205	406	404	133	200	55	59
Link Distance (ft)		1217	1217		368	368		331		245
Upstream Blk Time (%)					92	92		1		
Queuing Penalty (veh)					0	0		0		
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)	0	0		2	95		14	1	0	0
Queuing Penalty (veh)	0	0		10	126		20	2	0	0

Network Summary

Network wide Queuing Penalty: 2470

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	85	83	97	1061	1321	273
Future Volume (veh/h)	85	83	97	1061	1321	273
Number	3	18	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	92	90	105	1153	1436	297
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	147	131	133	2814	1969	399
Arrive On Green	0.08	0.08	0.08	0.80	0.67	0.67
Sat Flow, veh/h	1774	1583	1774	3632	3027	594
Grp Volume(v), veh/h	92	90	105	1153	854	879
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1758
Q Serve(g_s), s	4.1	4.5	4.8	8.1	25.2	26.9
Cycle Q Clear(g_c), s	4.1	4.5	4.8	8.1	25.2	26.9
Prop In Lane	1.00	1.00	1.00			0.34
Lane Grp Cap(c), veh/h	147	131	133	2814	1188	1180
V/C Ratio(X)	0.63	0.69	0.79	0.41	0.72	0.74
Avail Cap(c_a), veh/h	389	347	173	3538	1510	1500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	36.6	37.3	2.6	8.6	8.9
Incr Delay (d2), s/veh	4.3	6.2	12.3	0.1	0.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.2	2.8	3.9	12.4	13.0
LnGrp Delay(d),s/veh	40.7	42.8	49.6	2.7	9.3	9.9
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	182			1258	1733	
Approach Delay, s/veh	41.7			6.6	9.6	
Approach LOS	D			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		71.2			10.2	61.1		10.8
Change Period (Y+Rc), s		6.0			4.0	6.0		4.0
Max Green Setting (Gmax), s		82.0			8.0	70.0		18.0
Max Q Clear Time (g_c+I1), s		10.1			6.8	28.9		6.5
Green Ext Time (p_c), s		35.0			0.0	26.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	70	60	10	160	241	90	813	0	160	830	413
Future Volume (veh/h)	104	70	60	10	160	241	90	813	0	160	830	413
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	113	76	65	11	232	224	98	884	0	174	902	449
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	102	87	14	286	255	123	1528	0	207	1102	542
Arrive On Green	0.11	0.11	0.11	0.16	0.16	0.16	0.07	0.43	0.00	0.12	0.48	0.48
Sat Flow, veh/h	1774	928	794	84	1774	1583	1774	3632	0	1774	2301	1131
Grp Volume(v), veh/h	113	0	141	243	0	224	98	884	0	174	691	660
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1859	0	1583	1774	1770	0	1774	1770	1663
Q Serve(g_s), s	6.3	0.0	8.2	13.1	0.0	14.4	5.7	19.6	0.0	10.0	34.7	35.6
Cycle Q Clear(g_c), s	6.3	0.0	8.2	13.1	0.0	14.4	5.7	19.6	0.0	10.0	34.7	35.6
Prop In Lane	1.00		0.46	0.05		1.00	1.00		0.00	1.00		0.68
Lane Grp Cap(c), veh/h	194	0	189	300	0	255	123	1528	0	207	847	796
V/C Ratio(X)	0.58	0.00	0.75	0.81	0.00	0.88	0.80	0.58	0.00	0.84	0.82	0.83
Avail Cap(c_a), veh/h	632	0	614	322	0	274	137	1528	0	290	907	852
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	44.0	0.0	44.8	42.0	0.0	42.5	47.6	22.4	0.0	44.9	23.1	23.4
Incr Delay (d2), s/veh	2.7	0.0	5.8	13.6	0.0	24.7	25.0	0.5	0.0	14.4	5.5	6.5
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	3.2	0.0	4.2	7.9	0.0	8.0	3.6	9.7	0.0	5.7	18.2	17.8
LnGrp Delay(d),s/veh	46.7	0.0	50.6	55.6	0.0	67.3	72.6	22.9	0.0	59.3	28.7	29.9
LnGrp LOS	D		D	E		E	E	C		E	C	C
Approach Vol, veh/h		254			467			982			1525	
Approach Delay, s/veh		48.9			61.2			27.9			32.7	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.1	50.1		21.8	11.2	55.0		15.9
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	12.0	44.2		18.0	8.0	53.2		37.0
Max Q Clear Time (g_c+I1), s	10.3	21.6		16.4	7.7	37.6		10.2
Green Ext Time (p_c), s	0.2	16.8		0.4	0.0	12.1		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	36.6
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	495	10	21	618	61	40	0	41	91	0	70
Future Volume (veh/h)	20	495	10	21	618	61	40	0	41	91	0	70
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	538	11	23	672	66	43	0	45	99	0	76
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	1595	33	18	1595	714	46	0	48	142	0	127
Arrive On Green	0.01	0.45	0.41	0.01	0.45	0.45	0.06	0.00	0.07	0.08	0.00	0.09
Sat Flow, veh/h	1774	3547	72	1774	3539	1583	817	0	855	1774	0	1583
Grp Volume(v), veh/h	22	268	281	23	672	66	88	0	0	99	0	76
Grp Sat Flow(s),veh/h/ln	1774	1770	1850	1774	1770	1583	1671	0	0	1774	0	1583
Q Serve(g_s), s	0.4	3.9	3.9	0.4	5.1	0.9	2.1	0.0	0.0	2.2	0.0	1.8
Cycle Q Clear(g_c), s	0.4	3.9	3.9	0.4	5.1	0.9	2.1	0.0	0.0	2.2	0.0	1.8
Prop In Lane	1.00		0.04	1.00		1.00	0.49		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	16	796	832	18	1595	714	93	0	0	142	0	127
V/C Ratio(X)	1.37	0.34	0.34	1.30	0.42	0.09	0.94	0.00	0.00	0.70	0.00	0.60
Avail Cap(c_a), veh/h	157	1252	1309	157	2504	1120	1246	0	0	359	0	320
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.6	7.1	7.1	19.6	7.4	6.2	18.5	0.0	0.0	17.7	0.0	17.3
Incr Delay (d2), s/veh	193.1	0.3	0.3	165.5	0.2	0.1	16.0	0.0	0.0	2.3	0.0	1.7
Initial Q Delay(d3),s/veh	19.0	0.0	0.0	18.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.9	2.0	1.0	2.5	0.4	1.3	0.0	0.0	1.1	0.0	0.9
LnGrp Delay(d),s/veh	231.7	7.3	7.4	203.9	7.6	6.3	34.5	0.0	0.0	20.0	0.0	19.0
LnGrp LOS	F	A	A	F	A	A	C			C		B
Approach Vol, veh/h		571			761			88			175	
Approach Delay, s/veh		16.0			13.4			34.5			19.6	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.4	21.8		6.2	4.4	21.8		7.2
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	4.0	26.3		30.0	4.0	26.3		8.5
Max Q Clear Time (g_c+I1), s	2.4	7.1		4.1	2.4	5.9		4.2
Green Ext Time (p_c), s	0.0	9.0		0.3	0.0	9.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	364	203	520	533	0	127	10	100	0	10	10
Future Volume (veh/h)	20	364	203	520	533	0	127	10	100	0	10	10
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	396	221	565	579	0	138	11	109	0	11	11
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	677	373	403	2199	0	155	32	313	126	70	70
Arrive On Green	0.31	0.31	0.30	0.23	0.62	0.00	0.09	0.21	0.18	0.00	0.08	0.05
Sat Flow, veh/h	831	2203	1215	1774	3632	0	1774	147	1458	1266	856	856
Grp Volume(v), veh/h	22	317	300	565	579	0	138	0	120	0	0	22
Grp Sat Flow(s),veh/h/ln	831	1770	1648	1774	1770	0	1774	0	1605	1266	0	1712
Q Serve(g_s), s	1.1	8.7	8.9	13.0	4.2	0.0	4.4	0.0	3.7	0.0	0.0	0.7
Cycle Q Clear(g_c), s	1.1	8.7	8.9	13.0	4.2	0.0	4.4	0.0	3.7	0.0	0.0	0.7
Prop In Lane	1.00		0.74	1.00		0.00	1.00		0.91	1.00		0.50
Lane Grp Cap(c), veh/h	381	543	506	403	2199	0	155	0	345	126	0	140
V/C Ratio(X)	0.06	0.58	0.59	1.40	0.26	0.00	0.89	0.00	0.35	0.00	0.00	0.16
Avail Cap(c_a), veh/h	436	661	616	403	2434	0	155	0	1154	795	0	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	16.8	17.0	22.1	4.9	0.0	25.9	0.0	19.9	0.0	0.0	24.9
Incr Delay (d2), s/veh	0.1	1.2	1.4	196.1	0.1	0.0	41.4	0.0	0.2	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.4	4.2	28.2	2.0	0.0	3.9	0.0	1.7	0.0	0.0	0.3
LnGrp Delay(d),s/veh	14.2	18.0	18.4	218.2	5.0	0.0	67.2	0.0	20.1	0.0	0.0	25.1
LnGrp LOS	B	B	B	F	A		E		C			C
Approach Vol, veh/h		639			1144			258			22	
Approach Delay, s/veh		18.1			110.3			45.3			25.1	
Approach LOS		B			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	18.0	23.0		16.3		41.0	7.6	8.7
Change Period (Y+Rc), s	5.6	6.0		6.0		6.0	4.6	* 6
Max Green Setting (Gmax), s	12.4	20.8		39.2		38.8	3.0	* 33
Max Q Clear Time (g_c+I1), s	15.0	10.9		5.7		6.2	6.4	2.7
Green Ext Time (p_c), s	0.0	6.1		0.3		12.3	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	72.7
HCM 2010 LOS	E

Notes

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	470	10	0	982
Future Vol, veh/h	0	10	470	10	0	982
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	511	11	0	1067

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	261	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	738	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	738	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	738	-
HCM Lane V/C Ratio	-	-	0.015	-
HCM Control Delay (s)	-	-	10	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	583	10	130	20	350	0	0	392	590
Future Volume (veh/h)	0	0	0	583	10	130	20	350	0	0	392	590
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	1863	1863
Adj Flow Rate, veh/h				642	0	141	22	380	0	0	426	641
Adj No. of Lanes				2	0	1	1	2	0	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				723	0	322	74	1807	0	0	1223	547
Arrive On Green				0.20	0.00	0.20	0.04	0.51	0.00	0.00	0.35	0.35
Sat Flow, veh/h				3548	0	1583	1774	3632	0	0	3632	1583
Grp Volume(v), veh/h				642	0	141	22	380	0	0	426	641
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	1583
Q Serve(g_s), s				9.7	0.0	4.3	0.7	3.2	0.0	0.0	4.9	19.0
Cycle Q Clear(g_c), s				9.7	0.0	4.3	0.7	3.2	0.0	0.0	4.9	19.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				723	0	322	74	1807	0	0	1223	547
V/C Ratio(X)				0.89	0.00	0.44	0.30	0.21	0.00	0.00	0.35	1.17
Avail Cap(c_a), veh/h				723	0	322	258	2008	0	0	1223	547
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	0.99	0.99	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.3	0.0	19.1	25.6	7.4	0.0	0.0	13.4	18.0
Incr Delay (d2), s/veh				12.6	0.0	0.3	0.8	0.0	0.0	0.0	0.8	95.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.0	0.0	1.9	0.3	1.6	0.0	0.0	2.5	22.7
LnGrp Delay(d),s/veh				33.9	0.0	19.5	26.4	7.4	0.0	0.0	14.2	113.5
LnGrp LOS				C		B	C	A			B	F
Approach Vol, veh/h					783			402			1067	
Approach Delay, s/veh					31.3			8.4			73.9	
Approach LOS					C			A			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		34.9			9.1	25.8		17.0
Change Period (Y+Rc), s		6.8			6.8	* 6.8		5.8
Max Green Setting (Gmax), s		31.2			8.0	* 19		11.2
Max Q Clear Time (g_c+I1), s		5.2			2.7	21.0		11.7
Green Ext Time (p_c), s		1.0			0.5	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.4
HCM 2010 LOS	D

Notes



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	20	189	240	874	100
Future Volume (veh/h)	130	20	189	240	874	100
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	1863
Adj Flow Rate, veh/h	141	22	205	261	950	0
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	459	211	479	1986	1057	473
Arrive On Green	0.13	0.13	0.14	0.56	0.60	0.00
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583
Grp Volume(v), veh/h	141	22	205	261	950	0
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583
Q Serve(g_s), s	2.0	0.7	3.0	1.9	12.8	0.0
Cycle Q Clear(g_c), s	2.0	0.7	3.0	1.9	12.8	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	459	211	479	1986	1057	473
V/C Ratio(X)	0.31	0.10	0.43	0.13	0.90	0.00
Avail Cap(c_a), veh/h	576	265	551	2136	1300	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.89	0.00
Uniform Delay (d), s/veh	21.5	20.9	21.7	5.7	10.4	0.0
Incr Delay (d2), s/veh	0.1	0.1	0.2	0.0	10.9	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	1.0	0.6	1.4	0.9	7.5	0.0
LnGrp Delay(d),s/veh	21.7	21.0	21.9	5.7	21.3	0.0
LnGrp LOS	C	C	C	A	C	
Approach Vol, veh/h	163			466	950	
Approach Delay, s/veh	21.6			12.8	21.3	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		37.7		13.1	14.5	23.2		
Change Period (Y+Rc), s		6.8		5.8	6.8	* 6.8		
Max Green Setting (Gmax), s		33.2		9.2	8.8	* 20		
Max Q Clear Time (g_c+I1), s		3.9		4.0	5.0	14.8		
Green Ext Time (p_c), s		1.0		0.1	0.5	1.6		

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	20	1275	27	17	1906
Future Vol, veh/h	0	20	1275	27	17	1906
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	-	-	250	-
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	1386	29	18	2072

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	708	0	0	1415	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	377	-	-	478	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	377	-	-	478	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.1	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	377	478	-
HCM Lane V/C Ratio	-	-	0.058	0.039	-
HCM Control Delay (s)	-	-	15.1	12.8	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Montano de El Dorado — Near Term (2025) Plus Project Conditions

SimTraffic Simulation Summary — PM PEAK

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	9955	9664	9791	9736	10042	9708	9628
Vehs Exited	9543	9333	9495	9439	9588	9355	9152
Starting Vehs	617	628	635	619	555	588	563
Ending Vehs	1029	959	931	916	1009	941	1039
Travel Distance (mi)	6862	6777	6934	6871	6981	6750	6728
Travel Time (hr)	1223.7	1379.2	1184.1	1233.0	1172.4	1242.1	1362.7
Total Delay (hr)	1013.2	1170.9	971.9	1022.2	958.4	1035.1	1156.9
Total Stops	25589	23458	25417	22884	26980	23506	23946
Fuel Used (gal)	493.3	526.9	486.1	498.1	485.4	496.0	521.5

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	9377	10054	9526	9747
Vehs Exited	9093	9674	9339	9401
Starting Vehs	637	534	677	602
Ending Vehs	921	914	864	949
Travel Distance (mi)	6635	6953	6706	6820
Travel Time (hr)	1425.8	952.9	1399.6	1257.5
Total Delay (hr)	1222.6	739.8	1193.4	1048.4
Total Stops	23503	24734	24160	24416
Fuel Used (gal)	533.9	436.6	529.9	500.8

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2489	2437	2479	2532	2544	2523	2482
Vehs Exited	2467	2394	2452	2431	2409	2485	2365
Starting Vehs	617	628	635	619	555	588	563
Ending Vehs	639	671	662	720	690	626	680
Travel Distance (mi)	1773	1747	1778	1815	1762	1788	1742
Travel Time (hr)	181.1	196.1	175.3	191.5	181.2	164.0	175.8
Total Delay (hr)	126.7	142.1	120.5	135.8	126.9	109.2	122.4
Total Stops	5840	5655	5754	5941	6128	5673	5701
Fuel Used (gal)	97.0	99.6	96.1	100.9	96.3	94.1	94.9

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2355	2570	2405	2478
Vehs Exited	2327	2495	2479	2428
Starting Vehs	637	534	677	602
Ending Vehs	665	609	603	653
Travel Distance (mi)	1696	1792	1745	1764
Travel Time (hr)	200.0	148.4	179.2	179.3
Total Delay (hr)	147.7	93.4	125.5	125.0
Total Stops	5473	5680	5751	5763
Fuel Used (gal)	98.4	89.9	96.6	96.4

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2503	2450	2573	2452	2601	2553	2388
Vehs Exited	2411	2369	2427	2448	2470	2453	2317
Starting Vehs	639	671	662	720	690	626	680
Ending Vehs	731	752	808	724	821	726	751
Travel Distance (mi)	1764	1729	1809	1773	1816	1795	1708
Travel Time (hr)	263.4	295.3	244.5	254.5	258.6	251.3	273.9
Total Delay (hr)	209.1	242.0	189.1	200.0	202.8	196.1	221.4
Total Stops	6218	5731	6356	5433	6653	6074	5777
Fuel Used (gal)	115.4	121.8	111.4	114.6	116.0	113.4	115.7

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2434	2633	2479	2508
Vehs Exited	2274	2504	2249	2391
Starting Vehs	665	609	603	653
Ending Vehs	825	738	833	771
Travel Distance (mi)	1718	1832	1714	1766
Travel Time (hr)	307.7	189.5	288.0	262.7
Total Delay (hr)	255.0	133.1	235.1	208.4
Total Stops	6026	6307	6203	6073
Fuel Used (gal)	123.6	100.4	117.9	115.0

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2584	2365	2382	2261	2468	2330	2294
Vehs Exited	2336	2313	2269	2182	2380	2181	2160
Starting Vehs	731	752	808	724	821	726	751
Ending Vehs	979	804	921	803	909	875	885
Travel Distance (mi)	1753	1679	1711	1613	1719	1600	1610
Travel Time (hr)	350.3	402.8	348.4	346.8	336.1	350.4	402.1
Total Delay (hr)	296.5	351.2	296.2	297.2	283.5	301.2	352.9
Total Stops	6944	5881	6882	5321	6912	5744	5718
Fuel Used (gal)	133.8	144.2	131.9	129.6	130.1	130.4	142.1

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2239	2525	2337	2377
Vehs Exited	2257	2383	2273	2272
Starting Vehs	825	738	833	771
Ending Vehs	807	880	897	875
Travel Distance (mi)	1637	1740	1635	1670
Travel Time (hr)	417.3	259.2	425.7	363.9
Total Delay (hr)	367.4	205.9	375.4	312.7
Total Stops	5966	6608	6366	6237
Fuel Used (gal)	147.2	114.3	148.9	135.3

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2379	2412	2357	2491	2429	2302	2464
Vehs Exited	2329	2257	2347	2378	2329	2236	2310
Starting Vehs	979	804	921	803	909	875	885
Ending Vehs	1029	959	931	916	1009	941	1039
Travel Distance (mi)	1572	1623	1637	1670	1685	1567	1668
Travel Time (hr)	428.9	484.9	415.9	440.2	396.5	476.4	510.7
Total Delay (hr)	380.9	435.6	366.1	389.2	345.2	428.7	460.2
Total Stops	6587	6191	6425	6189	7287	6015	6750
Fuel Used (gal)	147.1	161.4	146.6	153.0	142.9	158.1	168.7

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2349	2326	2305	2377
Vehs Exited	2235	2292	2338	2301
Starting Vehs	807	880	897	875
Ending Vehs	921	914	864	949
Travel Distance (mi)	1584	1589	1611	1621
Travel Time (hr)	500.8	355.7	506.7	451.7
Total Delay (hr)	452.5	307.3	457.4	402.3
Total Stops	6038	6139	5840	6347
Fuel Used (gal)	164.6	132.1	166.6	154.1

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	56.2	66.5	72.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Denied Del/Veh (s)	1136.6	1146.3	1075.2	0.2	0.2	0.3	0.1	0.0	0.0	2.6	0.6	0.5
Total Delay (hr)	15.0	20.0	1.1	1.8	0.5	1.4	1.7	10.5	0.4	4.5	10.9	0.3
Total Del/Veh (s)	872.1	1028.8	52.6	36.2	28.5	16.8	46.2	32.1	26.1	78.3	43.0	27.2
Stop Delay (hr)	14.9	19.8	1.1	1.6	0.4	1.1	1.4	6.9	0.3	3.8	7.3	0.3
Stop Del/Veh (s)	864.3	1019.6	50.4	32.4	23.1	13.7	39.4	21.1	19.6	66.0	28.9	20.8

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	195.4
Denied Del/Veh (s)	191.8
Total Delay (hr)	68.2
Total Del/Veh (s)	74.8
Stop Delay (hr)	59.0
Stop Del/Veh (s)	64.7

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	1.9	0.7	3.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	2.3	2.9	0.1	3.1	3.0	0.7	18.8	4.3	1.0	0.6	16.3	1.1
Total Del/Veh (s)	73.1	92.9	2.8	61.0	62.9	57.9	65.0	13.1	12.0	115.7	60.3	21.0
Stop Delay (hr)	2.1	2.7	0.0	2.8	2.7	0.6	15.0	2.2	0.5	0.5	12.6	0.8
Stop Del/Veh (s)	69.4	87.0	0.0	55.8	56.4	53.9	51.9	6.5	6.1	103.0	46.5	15.2

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.1
Total Delay (hr)	54.1
Total Del/Veh (s)	44.2
Stop Delay (hr)	42.6
Stop Del/Veh (s)	34.8

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.4	0.1	0.0	0.0	0.0	0.0	0.4
Denied Del/Veh (s)	2.2	0.4	0.0	0.0	0.0	0.0	0.3
Total Delay (hr)	6.4	0.2	8.0	2.0	4.3	3.8	24.7
Total Del/Veh (s)	36.1	1.4	14.6	13.5	76.2	13.3	18.2
Stop Delay (hr)	5.1	0.0	3.2	0.7	3.7	1.3	13.9
Stop Del/Veh (s)	28.7	0.0	5.8	4.5	66.1	4.4	10.2

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.4	0.0	0.0	1.2	0.1	11.3	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.4	0.2	0.3	58.2	39.1	56.9	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	7.7	0.6	0.3	3.2	0.4	30.2	0.1	63.2	0.7	16.1	6.1	0.0
Total Del/Veh (s)	71.0	48.6	16.8	156.9	166.7	153.9	132.0	150.1	21.8	97.0	21.2	2.1
Stop Delay (hr)	7.0	0.5	0.3	3.1	0.4	30.3	0.1	52.8	0.6	14.3	4.1	0.0
Stop Del/Veh (s)	64.8	45.2	15.8	152.8	162.8	154.3	113.5	125.4	18.5	85.7	14.3	1.3

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	12.9
Denied Del/Veh (s)	10.3
Total Delay (hr)	128.7
Total Del/Veh (s)	100.5
Stop Delay (hr)	113.5
Stop Del/Veh (s)	88.6

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Denied Delay (hr)	95.1	114.7	19.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	745.9	753.3	765.9	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.0
Total Delay (hr)	29.7	8.3	0.9	6.2	3.3	6.1	0.2	3.6	30.1	3.7	21.7	7.1
Total Del/Veh (s)	339.7	84.2	51.2	54.5	43.5	89.6	121.4	138.0	96.9	35.4	269.6	37.6
Stop Delay (hr)	28.6	7.0	0.7	5.5	2.7	6.0	0.2	3.5	28.0	3.5	20.7	4.8
Stop Del/Veh (s)	326.8	71.1	43.8	48.3	35.7	88.1	118.2	133.2	90.0	33.1	256.9	25.4

5: Latrobe Road & White Rock Road Performance by movement

Movement	SBR	All
Denied Delay (hr)	0.0	229.6
Denied Del/Veh (s)	0.0	174.3
Total Delay (hr)	0.6	121.6
Total Del/Veh (s)	9.0	98.3
Stop Delay (hr)	0.4	111.6
Stop Del/Veh (s)	6.1	90.3

6: Latrobe Rd & Driveway Performance by movement

Movement	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.2	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	8.6	0.0	0.0	0.0	0.0	0.2
Total Delay (hr)	0.6	12.0	0.5	0.4	0.3	13.8
Total Del/Veh (s)	30.8	27.8	38.8	30.6	0.9	17.6
Stop Delay (hr)	0.6	9.1	0.4	0.3	0.0	10.5
Stop Del/Veh (s)	30.5	21.0	34.2	28.4	0.0	13.4

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	2.3	0.1	0.2	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	25.6	30.2	26.0	0.1	0.1	0.1	8.1	3.5	3.8	0.0	0.0	0.0
Total Delay (hr)	10.9	0.3	0.6	0.2	0.2	0.1	0.3	28.1	0.2	0.3	3.6	0.4
Total Del/Veh (s)	129.9	124.6	108.6	64.2	59.8	41.4	101.0	69.8	68.3	66.5	13.2	13.0
Stop Delay (hr)	10.3	0.3	0.6	0.2	0.2	0.1	0.3	24.7	0.2	0.3	2.4	0.3
Stop Del/Veh (s)	123.1	116.4	102.3	61.6	56.3	40.5	91.7	61.4	62.5	63.1	8.8	8.8

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	All
Denied Delay (hr)	4.0
Denied Del/Veh (s)	4.9
Total Delay (hr)	45.2
Total Del/Veh (s)	55.3
Stop Delay (hr)	39.7
Stop Del/Veh (s)	48.6

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	8.8	1.3	3.8	9.4	1.3	11.7
Denied Del/Veh (s)	0.5	0.1	0.2	0.0	0.0	0.0	241.4	202.2	206.1	181.6	179.4	196.9
Total Delay (hr)	4.0	4.6	0.1	1.4	7.3	2.0	7.7	0.1	0.2	7.4	0.9	6.0
Total Del/Veh (s)	69.5	22.2	9.8	71.2	39.4	41.0	254.0	25.3	11.3	154.7	122.0	112.2
Stop Delay (hr)	3.6	3.2	0.1	1.3	6.1	1.9	7.7	0.1	0.2	7.1	0.8	5.8
Stop Del/Veh (s)	63.5	15.2	6.0	67.0	32.8	38.1	253.8	21.3	10.3	148.2	114.2	106.9

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	36.4
Denied Del/Veh (s)	51.5
Total Delay (hr)	41.9
Total Del/Veh (s)	60.2
Stop Delay (hr)	37.8
Stop Del/Veh (s)	54.4

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.2	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	3.0	1.0	0.8	3.8	0.5	0.6	3.7	0.9	1.1
Total Delay (hr)	0.4	6.5	1.1	1.1	5.2	0.5	1.1	0.3	0.5	2.0	0.6	0.4
Total Del/Veh (s)	51.7	28.3	25.1	62.3	25.2	15.1	33.0	27.8	12.5	36.7	34.6	19.4
Stop Delay (hr)	0.4	4.1	0.7	1.0	3.6	0.4	1.0	0.2	0.4	1.8	0.5	0.3
Stop Del/Veh (s)	45.0	17.7	16.8	57.4	17.5	11.4	29.9	23.8	10.9	33.2	30.4	17.6

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.7
Denied Del/Veh (s)	1.0
Total Delay (hr)	19.6
Total Del/Veh (s)	27.6
Stop Delay (hr)	14.5
Stop Del/Veh (s)	20.4

Total Network Performance

Denied Delay (hr)	479.8
Denied Del/Veh (s)	160.4
Total Delay (hr)	568.6
Total Del/Veh (s)	197.8
Stop Delay (hr)	476.6
Stop Del/Veh (s)	165.8

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	70	916	811	216	303	230	309	329	314	125	607	577
Average Queue (ft)	36	746	578	108	133	91	175	201	183	116	338	283
95th Queue (ft)	147	1198	1228	179	240	169	279	309	287	144	574	514
Link Distance (ft)		909	909	775	775		776	776	776		969	969
Upstream Blk Time (%)		70	24									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	150					250				100		
Storage Blk Time (%)	1	88					1			30	34	
Queuing Penalty (veh)	2	76					1			138	70	

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	L	LT	TR	L	L	T	T	TR	L	T
Maximum Queue (ft)	165	226	174	323	175	657	672	550	340	299	224	616
Average Queue (ft)	88	130	111	183	122	403	412	134	143	148	36	385
95th Queue (ft)	153	218	194	279	209	630	636	340	263	253	144	636
Link Distance (ft)	1228	1228		621		646	646	646	646	646		776
Upstream Blk Time (%)						2	2	0				0
Queuing Penalty (veh)						9	11	0				2
Storage Bay Dist (ft)			150		150						200	
Storage Blk Time (%)			1	17	1						0	43
Queuing Penalty (veh)			4	37	4						0	9

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	562	443	176
Average Queue (ft)	279	177	68
95th Queue (ft)	536	385	156
Link Distance (ft)	776	776	
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			200
Storage Blk Time (%)		1	0
Queuing Penalty (veh)		1	1

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	R	L	T	T	T	T
Maximum Queue (ft)	452	323	506	583	561	300	298	462	257	184	108
Average Queue (ft)	220	132	116	151	204	117	154	133	34	21	10
95th Queue (ft)	514	319	337	401	454	259	283	365	144	102	68
Link Distance (ft)	1211		572	572	572			646	646	646	646
Upstream Blk Time (%)	1		0	1	2			0			
Queuing Penalty (veh)	0		1	7	16			0			
Storage Bay Dist (ft)		450				275	575				
Storage Blk Time (%)	3	0			4	0		0			
Queuing Penalty (veh)	9	0			26	2		0			

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	326	356	253	115	125	564	561	5	69	888	894	887
Average Queue (ft)	190	243	38	44	100	480	484	0	5	785	831	845
95th Queue (ft)	321	345	191	92	171	652	647	5	49	971	949	934
Link Distance (ft)			778	778		526	526			839	839	839
Upstream Blk Time (%)						44	48			6	12	36
Queuing Penalty (veh)						0	0			29	62	180
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)	0	2	0		2	83				34		
Queuing Penalty (veh)	0	0	0		7	60				1		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	896	336	348	586	438	265	42
Average Queue (ft)	540	272	292	331	167	104	10
95th Queue (ft)	1180	371	389	642	343	207	31
Link Distance (ft)	839			572	572	572	572
Upstream Blk Time (%)	13			6	0	0	
Queuing Penalty (veh)	64			27	0	0	
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		2	11	8			
Queuing Penalty (veh)		6	39	48			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	UL	T	T
Maximum Queue (ft)	337	350	718	688	182	190	199	323	336	279	366	350
Average Queue (ft)	285	335	624	349	127	140	109	132	210	162	312	278
95th Queue (ft)	445	391	894	783	201	211	217	272	394	316	428	359
Link Distance (ft)			677	677				315	315		279	279
Upstream Blk Time (%)			71	1				1	18	0	35	26
Queuing Penalty (veh)			0	0				6	88	0	156	118
Storage Bay Dist (ft)	325	325			175	175	175			275		
Storage Blk Time (%)	18	73	3		1	6	4	1		0	34	
Queuing Penalty (veh)	49	198	16		1	8	5	4		1	38	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B25	B25	B25	SB	SB	SB	SB
Directions Served	T	T	R	T	T	T	T		L	L	T	T
Maximum Queue (ft)	353	356	64	344	349	501	504	437	237	250	659	617
Average Queue (ft)	297	228	46	223	234	274	302	48	205	219	370	264
95th Queue (ft)	388	419	66	451	459	636	662	285	279	299	771	593
Link Distance (ft)	279	279		243	243	468	468	468			839	839
Upstream Blk Time (%)	44	11		33	45	13	23	2			2	0
Queuing Penalty (veh)	200	52		298	405	76	134	14			7	0
Storage Bay Dist (ft)			25						225	225		
Storage Blk Time (%)		17	35						22	41	3	
Queuing Penalty (veh)		76	110						49	93	9	

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	466	114
Average Queue (ft)	38	20
95th Queue (ft)	221	70
Link Distance (ft)	839	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 6: Latrobe Rd & Driveway

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	L	T
Maximum Queue (ft)	132	522	517	85	6
Average Queue (ft)	42	202	230	30	0
95th Queue (ft)	115	581	612	70	4
Link Distance (ft)	261	491	491		468
Upstream Blk Time (%)	3	8	14		
Queuing Penalty (veh)	0	68	119		
Storage Bay Dist (ft)				250	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	125	672	82	206	1794	1814	120	386	423
Average Queue (ft)	93	354	30	19	493	531	22	154	178
95th Queue (ft)	171	642	70	97	1310	1322	77	326	349
Link Distance (ft)		660	453		1849	1849		491	491
Upstream Blk Time (%)		14			3	4		0	0
Queuing Penalty (veh)		0			0	0		0	0
Storage Bay Dist (ft)	100			200			195		
Storage Blk Time (%)	6	68			26			6	
Queuing Penalty (veh)	13	113			3			1	

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	B20	B20	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	T	T	L	TR	L
Maximum Queue (ft)	105	349	371	135	145	284	290	865	783	258	230	75
Average Queue (ft)	98	218	209	38	82	221	195	244	204	194	47	72
95th Queue (ft)	124	370	366	117	163	335	326	846	790	293	158	87
Link Distance (ft)		315	315			198	198	1217	1217	216	216	
Upstream Blk Time (%)		3	2			25	33	2	1	62	5	
Queuing Penalty (veh)		20	13			114	148	8	4	0	0	
Storage Bay Dist (ft)	80			110	120							50
Storage Blk Time (%)	44	9	17	0	3	34						72
Queuing Penalty (veh)	214	24	12	0	10	25						173

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	SB
Directions Served	TR
Maximum Queue (ft)	457
Average Queue (ft)	391
95th Queue (ft)	537
Link Distance (ft)	410
Upstream Blk Time (%)	67
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	26
Queuing Penalty (veh)	48

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	144	366	392	145	342	309	123	202	124	247
Average Queue (ft)	34	190	210	64	192	162	70	79	98	106
95th Queue (ft)	96	332	356	135	313	284	118	165	142	225
Link Distance (ft)		1217	1217		368	368		331		246
Upstream Blk Time (%)					2	1		0		1
Queuing Penalty (veh)					0	0		0		0
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)		17		1	23		5	3	19	4
Queuing Penalty (veh)		7		3	14		8	3	23	8

Network Summary

Network wide Queuing Penalty: 4355

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	258	53	35	1220	850	148
Future Volume (veh/h)	258	53	35	1220	850	148
Number	3	18	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	280	58	38	1326	924	161
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	352	314	72	2156	1481	258
Arrive On Green	0.20	0.20	0.04	0.61	0.49	0.49
Sat Flow, veh/h	1774	1583	1774	3632	3108	525
Grp Volume(v), veh/h	280	58	38	1326	542	543
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1770
Q Serve(g_s), s	7.8	1.6	1.1	12.2	11.7	11.7
Cycle Q Clear(g_c), s	7.8	1.6	1.1	12.2	11.7	11.7
Prop In Lane	1.00	1.00	1.00			0.30
Lane Grp Cap(c), veh/h	352	314	72	2156	870	870
V/C Ratio(X)	0.80	0.18	0.53	0.62	0.62	0.62
Avail Cap(c_a), veh/h	547	488	171	2318	870	870
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	19.8	17.3	24.4	6.3	9.7	9.7
Incr Delay (d2), s/veh	4.5	0.3	2.2	0.5	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.7	0.6	5.9	6.0	6.0
LnGrp Delay(d),s/veh	24.3	17.6	26.6	6.9	11.3	11.3
LnGrp LOS	C	B	C	A	B	B
Approach Vol, veh/h	338			1364	1085	
Approach Delay, s/veh	23.1			7.4	11.3	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		37.6			6.1	31.5		14.3
Change Period (Y+Rc), s		6.0			4.0	6.0		4.0
Max Green Setting (Gmax), s		34.0			5.0	25.0		16.0
Max Q Clear Time (g_c+I1), s		14.2			3.1	13.7		9.8
Green Ext Time (p_c), s		17.5			0.0	10.6		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.8
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	368	150	80	0	60	153	60	734	10	223	591	88
Future Volume (veh/h)	368	150	80	0	60	153	60	734	10	223	591	88
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	325	268	87	0	141	116	65	798	11	242	642	96
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	441	335	109	0	112	95	83	1102	15	279	1294	193
Arrive On Green	0.25	0.25	0.25	0.00	0.06	0.06	0.05	0.31	0.31	0.16	0.42	0.42
Sat Flow, veh/h	1774	1348	438	0	1863	1583	1774	3574	49	1774	3090	461
Grp Volume(v), veh/h	325	0	355	0	141	116	65	395	414	242	367	371
Grp Sat Flow(s),veh/h/ln	1774	0	1786	0	1863	1583	1774	1770	1854	1774	1770	1781
Q Serve(g_s), s	14.0	0.0	15.5	0.0	5.0	5.0	3.0	16.6	16.6	11.1	12.7	12.7
Cycle Q Clear(g_c), s	14.0	0.0	15.5	0.0	5.0	5.0	3.0	16.6	16.6	11.1	12.7	12.7
Prop In Lane	1.00		0.25	0.00		1.00	1.00		0.03	1.00		0.26
Lane Grp Cap(c), veh/h	441	0	444	0	112	95	83	546	572	279	741	746
V/C Ratio(X)	0.74	0.00	0.80	0.00	1.26	1.22	0.78	0.72	0.72	0.87	0.50	0.50
Avail Cap(c_a), veh/h	791	0	796	0	112	95	107	640	670	298	831	837
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	0.0	29.3	0.0	39.1	39.1	39.3	25.6	25.6	34.2	17.7	17.8
Incr Delay (d2), s/veh	2.4	0.0	3.4	0.0	170.7	162.8	24.2	3.4	3.2	21.7	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	8.0	0.0	7.9	6.5	2.0	8.5	8.9	7.1	6.2	6.3
LnGrp Delay(d),s/veh	31.2	0.0	32.7	0.0	209.8	201.9	63.4	29.0	28.9	55.9	18.3	18.3
LnGrp LOS	C		C		F	F	E	C	C	E	B	B
Approach Vol, veh/h		680			257			874			980	
Approach Delay, s/veh		32.0			206.2			31.5			27.6	
Approach LOS		C			F			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	17.1	31.0		10.0	7.9	40.2		25.2
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	14.0	30.1		5.0	5.0	39.1		37.1
Max Q Clear Time (g_c+I1), s	13.1	18.6		7.0	5.0	14.7		17.5
Green Ext Time (p_c), s	0.1	7.1		0.0	0.0	11.2		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	729	30	63	673	103	20	0	43	63	0	30
Future Volume (veh/h)	50	729	30	63	673	103	20	0	43	63	0	30
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	792	33	68	732	112	22	0	47	68	0	33
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	1718	72	71	1783	798	21	0	45	95	0	85
Arrive On Green	0.03	0.50	0.46	0.04	0.50	0.50	0.04	0.00	0.05	0.05	0.00	0.06
Sat Flow, veh/h	1774	3463	144	1774	3539	1583	523	0	1117	1774	0	1583
Grp Volume(v), veh/h	54	405	420	68	732	112	69	0	0	68	0	33
Grp Sat Flow(s),veh/h/ln	1774	1770	1837	1774	1770	1583	1640	0	0	1774	0	1583
Q Serve(g_s), s	1.3	6.5	6.5	1.7	5.6	1.6	1.8	0.0	0.0	1.6	0.0	0.9
Cycle Q Clear(g_c), s	1.3	6.5	6.5	1.7	5.6	1.6	1.8	0.0	0.0	1.6	0.0	0.9
Prop In Lane	1.00		0.08	1.00		1.00	0.32		0.68	1.00		1.00
Lane Grp Cap(c), veh/h	58	878	912	71	1783	798	66	0	0	95	0	85
V/C Ratio(X)	0.93	0.46	0.46	0.96	0.41	0.14	1.04	0.00	0.00	0.72	0.00	0.39
Avail Cap(c_a), veh/h	262	1165	1210	205	2216	991	1118	0	0	246	0	220
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.9	7.1	7.2	20.7	6.7	5.7	20.6	0.0	0.0	20.2	0.0	19.6
Incr Delay (d2), s/veh	20.8	0.4	0.4	21.4	0.2	0.1	41.5	0.0	0.0	3.8	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.3	3.4	1.2	2.7	0.7	1.5	0.0	0.0	0.9	0.0	0.4
LnGrp Delay(d),s/veh	41.7	7.5	7.6	42.1	6.9	5.8	62.8	0.0	0.0	23.9	0.0	20.6
LnGrp LOS	D	A	A	D	A	A	F			C		C
Approach Vol, veh/h		879			912			69			101	
Approach Delay, s/veh		9.7			9.4			62.8			22.9	
Approach LOS		A			A			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	25.8		5.8	5.7	25.5		6.3
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	6.9	25.4		30.0	5.5	26.8		6.5
Max Q Clear Time (g_c+I1), s	3.3	7.6		3.8	3.7	8.5		3.6
Green Ext Time (p_c), s	0.0	11.1		0.2	0.0	11.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	742	113	130	473	0	295	10	350	0	10	30
Future Volume (veh/h)	20	742	113	130	473	0	295	10	350	0	10	30
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	807	123	141	514	0	321	11	380	0	11	33
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	414	1040	158	143	1765	0	354	16	541	116	45	134
Arrive On Green	0.34	0.34	0.33	0.08	0.50	0.00	0.20	0.35	0.32	0.00	0.11	0.08
Sat Flow, veh/h	883	3080	469	1774	3632	0	1774	45	1545	989	411	1234
Grp Volume(v), veh/h	22	464	466	141	514	0	321	0	391	0	0	44
Grp Sat Flow(s),veh/h/ln	883	1770	1780	1774	1770	0	1774	0	1590	989	0	1645
Q Serve(g_s), s	1.1	14.6	14.6	4.9	5.3	0.0	11.0	0.0	13.4	0.0	0.0	1.6
Cycle Q Clear(g_c), s	1.1	14.6	14.6	4.9	5.3	0.0	11.0	0.0	13.4	0.0	0.0	1.6
Prop In Lane	1.00		0.26	1.00		0.00	1.00		0.97	1.00		0.75
Lane Grp Cap(c), veh/h	414	597	601	143	1765	0	354	0	556	116	0	178
V/C Ratio(X)	0.05	0.78	0.78	0.99	0.29	0.00	0.91	0.00	0.70	0.00	0.00	0.25
Avail Cap(c_a), veh/h	429	627	631	143	1825	0	354	0	1245	567	0	928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	18.5	18.5	28.5	9.1	0.0	24.3	0.0	18.3	0.0	0.0	26.1
Incr Delay (d2), s/veh	0.1	6.1	6.1	70.9	0.1	0.0	25.3	0.0	0.6	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	8.1	8.1	5.2	2.6	0.0	7.8	0.0	5.9	0.0	0.0	0.7
LnGrp Delay(d),s/veh	14.0	24.6	24.6	99.4	9.2	0.0	49.5	0.0	18.9	0.0	0.0	26.3
LnGrp LOS	B	C	C	F	A		D		B			C
Approach Vol, veh/h		952			655			712			44	
Approach Delay, s/veh		24.3			28.6			32.7			26.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6	7	8
Phs Duration (G+Y+Rc), s	10.0	26.3		25.7		36.3	15.0	10.7
Change Period (Y+Rc), s	5.6	6.0		6.0		6.0	4.6	* 6
Max Green Setting (Gmax), s	4.4	21.4		46.6		31.4	10.4	* 33
Max Q Clear Time (g_c+I1), s	3.1	16.6		15.4		7.3	13.0	3.6
Green Ext Time (p_c), s	0.0	3.7		1.2		13.1	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	28.1
HCM 2010 LOS	C

Notes

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	853	10	0	549
Future Vol, veh/h	0	10	853	10	0	549
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	927	11	0	597

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	469	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	541	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	541	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	541	-
HCM Lane V/C Ratio	-	-	0.02	-
HCM Control Delay (s)	-	-	11.8	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	321	10	210	20	653	0	0	299	250
Future Volume (veh/h)	0	0	0	321	10	210	20	653	0	0	299	250
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	1863	1863
Adj Flow Rate, veh/h				357	0	228	22	710	0	0	325	272
Adj No. of Lanes				2	0	1	1	2	0	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				639	0	285	75	1272	0	0	826	370
Arrive On Green				0.18	0.00	0.18	0.04	0.36	0.00	0.00	0.23	0.23
Sat Flow, veh/h				3548	0	1583	1774	3632	0	0	3632	1583
Grp Volume(v), veh/h				357	0	228	22	710	0	0	325	272
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	1583
Q Serve(g_s), s				4.6	0.0	6.9	0.6	8.0	0.0	0.0	3.9	8.0
Cycle Q Clear(g_c), s				4.6	0.0	6.9	0.6	8.0	0.0	0.0	3.9	8.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				639	0	285	75	1272	0	0	826	370
V/C Ratio(X)				0.56	0.00	0.80	0.29	0.56	0.00	0.00	0.39	0.74
Avail Cap(c_a), veh/h				724	0	323	284	1925	0	0	1062	475
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	0.94	0.94	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				18.7	0.0	19.6	23.2	12.8	0.0	0.0	16.2	17.7
Incr Delay (d2), s/veh				0.3	0.0	10.4	0.8	0.1	0.0	0.0	1.4	12.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.3	0.0	3.8	0.3	3.9	0.0	0.0	2.1	4.7
LnGrp Delay(d),s/veh				19.0	0.0	30.0	24.0	13.0	0.0	0.0	17.6	30.0
LnGrp LOS				B		C	C	B			B	C
Approach Vol, veh/h					585			732			597	
Approach Delay, s/veh					23.3			13.3			23.3	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		24.8			6.3	18.5		14.8
Change Period (Y+Rc), s		6.8			* 4.2	6.8		5.8
Max Green Setting (Gmax), s		27.2			* 8	15.0		10.2
Max Q Clear Time (g_c+I1), s		10.0			2.6	10.0		8.9
Green Ext Time (p_c), s		2.9			0.0	1.7		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	320	20	374	353	521	100
Future Volume (veh/h)	320	20	374	353	521	100
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	1863
Adj Flow Rate, veh/h	348	22	407	384	566	0
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	547	252	556	1768	715	320
Arrive On Green	0.16	0.16	0.16	0.50	0.07	0.00
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583
Grp Volume(v), veh/h	348	22	407	384	566	0
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583
Q Serve(g_s), s	4.7	0.6	5.6	3.0	7.9	0.0
Cycle Q Clear(g_c), s	4.7	0.6	5.6	3.0	7.9	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	547	252	556	1768	715	320
V/C Ratio(X)	0.64	0.09	0.73	0.22	0.79	0.00
Avail Cap(c_a), veh/h	860	396	675	1768	772	345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.96	0.00
Uniform Delay (d), s/veh	19.7	17.9	19.9	7.0	22.3	0.0
Incr Delay (d2), s/veh	0.5	0.1	2.3	0.0	8.4	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	2.3	0.6	2.8	1.5	4.7	0.0
LnGrp Delay(d),s/veh	20.1	18.0	22.3	7.0	30.7	0.0
LnGrp LOS	C	B	C	A	C	
Approach Vol, veh/h	370			791	566	
Approach Delay, s/veh	20.0			14.9	30.7	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		31.8		13.8	14.9	16.9		
Change Period (Y+Rc), s		6.8		5.8	6.8	* 6.8		
Max Green Setting (Gmax), s		24.9		12.5	9.8	* 11		
Max Q Clear Time (g_c+I1), s		5.0		6.7	7.6	9.9		
Green Ext Time (p_c), s		1.8		0.4	0.5	0.2		

Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

Notes

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	75	1696	47	45	1153
Future Vol, veh/h	0	75	1696	47	45	1153
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	-	-	250	-
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	82	1843	51	49	1253

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	947	0	0	1894	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	262	-	-	311	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	262	-	-	311	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.8	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	262	311	-
HCM Lane V/C Ratio	-	-	0.311	0.157	-
HCM Control Delay (s)	-	-	24.8	18.7	-
HCM Lane LOS	-	-	C	C	-
HCM 95th %tile Q(veh)	-	-	1.3	0.6	-

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-TermPP_AM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/19/2017
Analysis Year:	2017
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 1: NB

LOS and Performance Measures

Flow rate, v_p	1470	pc/h/ln
Capacity, C	4192	pc/h/ln
Speed, S	54.8	mi/h
Density, D	13.4	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1325	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	55.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	54.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	54.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	54.8	mi/h
Capacity, c	2096	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	2096	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1325	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	735	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	735	pc/h/ln
Free-Flow Speed, FFS	55.0	mi/h
Capacity, c	2096	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	54.8	mi/h
Density, D	13.4	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1325	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	720	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	3.00	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 12:58:14

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-TermPP_AM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/19/2017
Analysis Year:	2017
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 2: SB

LOS and Performance Measures

Flow rate, v_p	2114	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	44.8	mi/h
Density, D	23.6	pc/mi/ln
Level of Service, LOS	C	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	0.3	access points/mi
Demand Volume, V	1906	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	44.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	44.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	44.8	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1906	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	1057	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	1057	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	44.8	mi/h
Density, D	23.6	pc/mi/ln
Level of service, LOS	C	

Bicycle Level of Service

Hourly Directional Volume, V	1906	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	1036	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	3.19	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 12:58:37

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-TermPP_AM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	589	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.2	mi/h
Density, D	6.8	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	531	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	531	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	294	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	294	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	6.8	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	531	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	289	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.54	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:01:08

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-TermPP_AM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1304	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.4	mi/h
Density, D	15.0	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	1176	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1176	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	652	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	652	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	15.0	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1176	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	639	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.94	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:01:51

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	AM EB
Highway	White Rock Road
From/To	Post to Valley View
Jurisdiction	
Analysis Year	Near-Term plus Project 2025
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.92	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 469 veh/h
Opposing direction volume, Vo 1256 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.2	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.996	1.000
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	512 pc/h	1365 pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATSd	27.4	mi/h
Percent Free Flow Speed, PFFS	64.2	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	510	pc/h	1365	pc/h
Base percent time-spent-following,(note-4) BPTSFd	61.6	%		
Adjustment for no-passing zones, fnp	15.9			
Percent time-spent-following, PTSFd	65.9	%		

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.30	
Peak 15-min vehicle-miles of travel, VMT15	38	veh-mi
Peak-hour vehicle-miles of travel, VMT60	141	veh-mi
Peak 15-min total travel time, TT15	1.4	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	27.4	mi/h
Percent time-spent-following, PTSFd (from above)	65.9	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	509.8
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.41
Bicycle LOS	B

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	AM WB
Highway	White Rock Road
From/To	Valley View to Post
Jurisdiction	
Analysis Year	Near-Term plus Project 2025
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.92	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	0.25	mi	% No-passing zones	100	%
Up/down	3.0	%	Access point density	9	/mi

Analysis direction volume, Vd 1256 veh/h
Opposing direction volume, Vo 469 veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.2
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.998	0.996
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	1368 pc/h	512 pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	2.2	mi/h
Average travel speed, ATSd	26.0	mi/h
Percent Free Flow Speed, PFFS	60.7	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	0.92	1.00
Directional flow rate,(note-2) vi	1484 pc/h	510 pc/h
Base percent time-spent-following,(note-4) BPTSFd	85.3 %	
Adjustment for no-passing zones, fnp	13.5	
Percent time-spent-following, PTSFd	95.3 %	

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.80	
Peak 15-min vehicle-miles of travel, VMT15	102	veh-mi
Peak-hour vehicle-miles of travel, VMT60	377	veh-mi
Peak 15-min total travel time, TT15	3.9	veh-h
Capacity from ATS, CdATS	1673	veh/h
Capacity from PTSF, CdPTSF	1564	veh/h
Directional Capacity	1673	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	26.0	mi/h
Percent time-spent-following, PTSFd (from above)	95.3	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	1365.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.91
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-TermPP_PM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/19/2017
Analysis Year:	2017
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 1: NB

LOS and Performance Measures

Flow rate, v_p	1969	pc/h/ln
Capacity, C	4192	pc/h/ln
Speed, S	54.8	mi/h
Density, D	18.0	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1775	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	55.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	54.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	54.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	54.8	mi/h
Capacity, c	2096	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	2096	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1775	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	984	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	984	pc/h/ln
Free-Flow Speed, FFS	55.0	mi/h
Capacity, c	2096	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	54.8	mi/h
Density, D	18.0	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1775	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	965	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	3.15	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:04:45

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-TermPP_PM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/19/2017
Analysis Year:	2017
Time Period Analyzed:	
Project Description:	
Units:	U.S. Customary

Direction 2: SB

LOS and Performance Measures

Flow rate, v_p	1289	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	44.8	mi/h
Density, D	14.4	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	0.3	access points/mi
Demand Volume, V	1162	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	44.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	44.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	44.8	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1162	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	644	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	644	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	44.8	mi/h
Density, D	14.4	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1162	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	632	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.94	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:04:06

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-TermPP_PM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	1405	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.2	mi/h
Density, D	16.2	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1267	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1267	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	702	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	702	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	16.2	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1267	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	689	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.98	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:07:37

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Near-TermPP_PM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1059	pc/h/ln
Capacity, C	3800	pc/h/ln
Speed, S	43.4	mi/h
Density, D	12.2	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	2	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	955	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	955	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	2	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	530	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	530	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	12.2	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	955	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	2	ln
Directional Demand Flow Rate in Outside Lane, vOL	519	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.84	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 13:08:15

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	PM EB
Highway	White Rock Road
From/To	Post to Valley View
Jurisdiction	
Analysis Year	Near-Term plus Project 2025
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.92	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 1233 veh/h
Opposing direction volume, Vo 876 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	1.000		1.000	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1340	pc/h	952	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	23.8	mi/h
Percent Free Flow Speed, PFFS	55.8	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1340	pc/h	952	pc/h
Base percent time-spent-following,(note-4) BPTSFd	84.9	%		
Adjustment for no-passing zones, fnp	14.0			
Percent time-spent-following, PTSFd	93.1	%		

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.79	
Peak 15-min vehicle-miles of travel, VMT15	101	veh-mi
Peak-hour vehicle-miles of travel, VMT60	370	veh-mi
Peak 15-min total travel time, TT15	4.2	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	23.8	mi/h
Percent time-spent-following, PTSFd (from above)	93.1	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	1340.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.90
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	1/25/2016
Analysis Time Period	PM WB
Highway	White Rock Road
From/To	Valley View to Post
Jurisdiction	
Analysis Year	Near-Term plus Project 2025
Description	

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.92	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	9	/mi

Analysis direction volume, Vd 876 veh/h
Opposing direction volume, Vo 1233 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	1.000		1.000	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	952	pc/h	1340	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.3	mi/h
Free-flow speed, FFSd	42.8	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATSd	24.2	mi/h
Percent Free Flow Speed, PFFS	56.5	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	952	pc/h	1340	pc/h
Base percent time-spent-following,(note-4) BPTSFd	79.8	%		
Adjustment for no-passing zones, fnp	14.0			
Percent time-spent-following, PTSFd	85.6	%		

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.56	
Peak 15-min vehicle-miles of travel, VMT15	71	veh-mi
Peak-hour vehicle-miles of travel, VMT60	263	veh-mi
Peak 15-min total travel time, TT15	2.9	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	24.2	mi/h
Percent time-spent-following, PTSFd (from above)	85.6	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	952.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.73
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

	Segment Inputs				Near Term (2025) plus Project Conditions												
					Flow Inputs		AM LOS Performance Measures						PM LOS Performance Measures				
		Length	Number of Lanes	Interchange Density	AM Peak	PM Peak	V_p	FFS		S	D	LOS	V_p	FFS		S	D	LOS
		(ft)	(N)	(I/mi)	(veh/h)	(veh/h)	(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)		(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)	
EB	West of Latrobe Rd SB Off Ramp	6690	3	0.33	2,922	4,142	1069.28	74.12	75	74.9469	14.267	B	1515.732	74.12	75	72.0556	21.0	C
EB	Latrobe Rd NB Off Ramp to Latrobe Rd On Ramp	1990	3	0.50	1,473	3,026	539.033	73.6	75	72.6477	7.4198	A	1107.341	73.6	75	74.8725	14.79	B
EB	Silva Valley Pkwy SB/NB Off Ramp to Silva Valley Pkwy NB/SB On Ramp	2375	3	0.50	1,899	3,525	694.924	73.6	75	73.9697	9.3947	A	1289.946	73.6	75	74.0694	17.415	B
EB	East of Silva Valley Pkwy NB/SB On Ramp	3400	3	0.50	2,188	3,999	800.681	73.6	75	74.5602	10.739	A	1463.402	73.6	75	72.6228	20.151	C
WB	Silva Valley Pkwy NB/SB Off Ramp to Silva Valley Pkwy SB/NB On Ramp	2350	2	0.50	3,064	2,261	1681.87	73.6	75	69.853	24.077	C	1241.092	73.6	75	74.3566	16.691	B
WB	El Dorado Hills Blvd Off Ramp to El Dorado Hills Blvd On Ramp	3565	2	0.50	3,128	2,253	1717	73.6	75	69.309	24.773	C	1236.701	73.6	75	74.3798	16.627	B
WB	West of El Dorado Hills Blvd On Ramp	5890	2	0.33	4,349	3,764	2387.22	74.12	75	53.697	44.457	E	2066.109	74.12	75	62.418	33.101	D
Univeral	Weaving Segments	2000	3	0.50	2,049	3,865	749.815	73.6	75	74.3071	10.091	A						
PHF	0.92	5500	2	0.33	3,787	2,802	2078.73	74.13	75	62.1182	33.464	D	1538.054	74.13	75	71.7952	21.423	C
(P_T)	2%	3425	3	0.50	3,684	2,541							929.8587	73.6	75	74.9455	12.407	B
f_{HV}	0.99009901																	

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

		Segment Inputs			Near Term (2025) plus Project Conditions																										
					AM Flow Inputs			AM LOS Performance Measures												PM Flow Inputs			PM LOS Performance Measures										
		Number of Lanes	Number of Ramp Lanes	Length of Acceleration Lane (L_a)	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	v_R/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	v_R/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
		(N)		(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/h)	(pc/h)			(pc/h/ln)					(pc/mi/ln)			(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/hr)	(pc/h)			(pc/h/ln)					(pc/mi/ln)	
EB	Latrobe Rd On Ramp	3	1	110	2049	1473	576	2249	1617	632	46	0.5806	938.85	7200	339	704	939	0.3124	16.75	B	3865	3026	839	4243	3322	921	95	0.5806	1928.7	7200	697	1447	1929	0.5893	26.59	C
	Silva Valley On Ramp	3	1	550	2188	1899	289	2402	2085	317	60	0.5929	1236.1	7200	424	927	1236	0.3336	13.997	B	3999	3525	474	4390	3870	520	111	0.5929	2294.4	7200	788	1721	2294	0.6098	23.743	C
WB	El Dorado Hills Blvd On Ramp	2	1	795	4349	3128	1221	4774	3434	1340	98	1	3434	4800	0	2576	3434	0.9947	37.114	E	3764	2253	1511	4132	2473	1659	71	1	2473.4	4800	0	1855	2473	0.8609	31.959	D
	Silva Valley On Ramp	2	1	800	3684	3064	620	4044	3364	681	96	1	3363.7	4800	0	2523	3364	0.8426	31.692	D	2541	2261	280	2790	2482	307	71	1	2482.2	4800	0	1862	2482	0.5812	22.076	C

Universal Inputs:

Length	1500	(ft)
S_{FF}	70	(mi/h)
S_{FR}	35	(mi/h)
PHF	0.92	
(P_T)	2%	
f_{HV}	0.99009901	

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Near Term (2025) plus Project Conditions

	Segment Inputs				AM Flow Inputs			AM LOS Performance Measures										PM Flow Inputs			PM LOS Performance Measures									
		Number of Lanes	Number of Ramp Lanes	L_{EQ}	Length of Deceleration Lane (L_D)	Downstream Volume	Upstream Volume	Ramp Volume	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
		(N)		(ft)	(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)		(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)	
EB	Latrobe SB Off Ramp	3	1	505	140	1733	2922	1189	285.435	3207.8	1305.3	0.436	2134.8	7200	537	1601	2135	0.4455	21.351	C	3526	4142	616	548.913	4547.2	676.26	0.436	2364	7200	1092	1773	2364	0.6316	23.322	C
	Latrobe NB Off Ramp	3	1	-	140	1473	1733	260	-	1902.5	285.43	0.6993	1416.3	7200	486	1062	1416	0.2642	15.172	B	3026	3526	500	-	3870.9	548.91	0.638	2668.3	7200	1203	2001	2668	0.5376	25.939	C
	Silva Valley SB Off Ramp	3	1	-	150	1899	2049	150	-	2249.4	164.67	0.6962	1616.1	7200	317	1212	1616	0.3124	16.8	B	3525	3865	340	-	4243.1	373.26	0.6368	2837.4	7200	1406	2128	2837	0.5893	27.304	C
WB	El Dorado Hills Blvd Off Ramp	3	1	-	190	3128	3684	556	-	4044.4	610.39	0.6308	2776.6	7200	1268	2082	2777	0.5617	26.421	C	2253	2541	288	-	2789.6	316.17	0.6757	1987.5	7200	802	1491	1987	0.3874	19.634	B
	Silva Valley NB Off Ramp	3	1	-	150	3064	3787	723	-	4157.5	793.73	0.6196	2877.7	7200	1280	2158	2878	0.5774	27.651	C	2261	2802	541	-	3076.1	593.92	0.6558	2221.7	7200	854	1666	2222	0.4272	22.008	C

Universal Inputs:

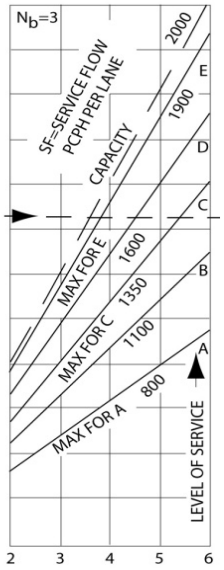
L_{eng}	1500	(ft)
S_{hr}	70	(mi/h)
S_{fw}	35	(mi/h)
PHF	0.92	
(P_T)	2%	
f_{HV}	0.99009901	

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

EB US-50, East of Latrobe Rd On Ramp, Near-Term (2024) plus Project Conditons (PM)

Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS



Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	3,865	Volume (vph)	839	Volume (vph)	340
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,904	Volume (pcph)	847	Volume (pcph)	343

W1 + W2	1,191
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	47.0
Weaving Intensity Factor (k)	1.60
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,027
Level of Service (LOS)	B

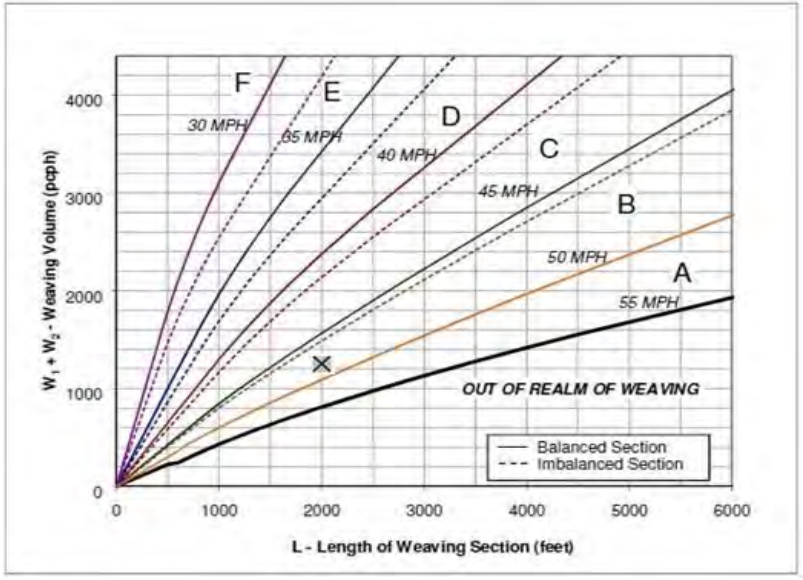


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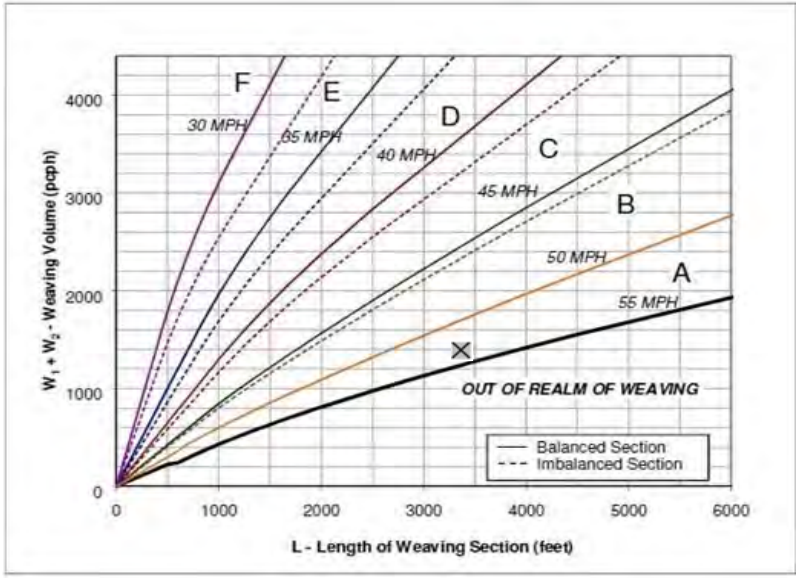
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

WB US-50, East of El Dorado Hills Blvd Off Ramp, Near-Term (2024) plus Project Conditons (AM)

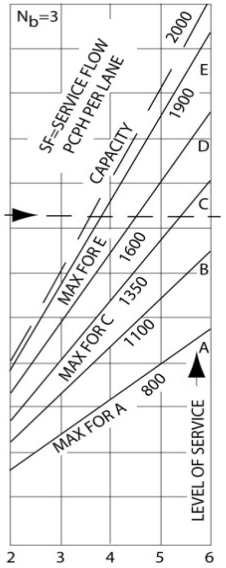
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	3,684	Volume (vph)	620	Volume (vph)	556
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	3,721	Volume (pcph)	626	Volume (pcph)	562

W1 + W2	1,188
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (Sw, mph)	54.0
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	930
Level of Service (LOS)	B



Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS



Appendix F

Analysis Worksheets for Cumulative (2035) Conditions

Montano de El Dorado — Cumulative (2035) Conditions

SimTraffic Simulation Summary — AM Peak

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	10182	10359	10484	10042	10218	10372	10319
Vehs Exited	10084	10376	10125	9913	9967	10090	10234
Starting Vehs	575	526	467	605	606	516	535
Ending Vehs	673	509	826	734	857	798	620
Travel Distance (mi)	8435	8593	8528	8217	8325	8441	8471
Travel Time (hr)	728.7	594.2	736.1	849.1	907.7	676.4	631.4
Total Delay (hr)	473.0	333.8	477.3	600.7	656.3	420.7	374.4
Total Stops	23812	21622	24932	24328	26135	23035	22002
Fuel Used (gal)	417.6	391.5	420.8	440.2	455.9	404.4	395.4

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	10393	10229	10074	10263
Vehs Exited	10247	9908	9640	10059
Starting Vehs	540	485	528	539
Ending Vehs	686	806	962	747
Travel Distance (mi)	8583	8311	8055	8396
Travel Time (hr)	705.9	718.0	749.8	729.7
Total Delay (hr)	446.5	466.7	506.6	475.6
Total Stops	24507	23656	23030	23705
Fuel Used (gal)	418.5	410.8	411.2	416.6

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Montano de El Dorado — Cumulative (2035) Conditions
SimTraffic Simulation Summary — AM Peak

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2506	2571	2558	2505	2514	2538	2511
Vehs Exited	2317	2515	2374	2321	2408	2465	2494
Starting Vehs	575	526	467	605	606	516	535
Ending Vehs	764	582	651	789	712	589	552
Travel Distance (mi)	1984	2096	2035	1943	2027	2044	2045
Travel Time (hr)	177.7	140.9	147.3	179.6	181.8	127.8	134.0
Total Delay (hr)	117.3	77.3	85.1	120.8	120.7	65.7	71.8
Total Stops	6063	5189	5312	5774	6150	4652	4947
Fuel Used (gal)	99.2	94.1	93.1	97.7	101.3	89.2	90.9

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2612	2436	2544	2526
Vehs Exited	2450	2424	2588	2437
Starting Vehs	540	485	528	539
Ending Vehs	702	497	484	629
Travel Distance (mi)	2094	2025	2140	2043
Travel Time (hr)	151.0	127.8	133.9	150.2
Total Delay (hr)	87.8	66.5	69.0	88.2
Total Stops	5622	4540	4916	5316
Fuel Used (gal)	97.1	89.2	95.0	94.7

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2701	2749	2823	2633	2716	2689	2644
Vehs Exited	2760	2678	2601	2620	2601	2529	2538
Starting Vehs	764	582	651	789	712	589	552
Ending Vehs	705	653	873	802	827	749	658
Travel Distance (mi)	2274	2230	2212	2180	2131	2201	2120
Travel Time (hr)	181.9	155.3	182.6	216.5	195.5	165.1	163.1
Total Delay (hr)	113.0	88.1	115.4	150.5	130.8	98.4	98.9
Total Stops	6299	5766	6448	6602	6327	5844	5728
Fuel Used (gal)	109.7	101.9	107.3	114.6	108.3	102.2	99.7

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2770	2782	2725	2722
Vehs Exited	2584	2412	2480	2578
Starting Vehs	702	497	484	629
Ending Vehs	888	867	729	774
Travel Distance (mi)	2179	2087	2133	2175
Travel Time (hr)	188.3	163.2	158.7	177.0
Total Delay (hr)	122.5	100.0	94.6	111.2
Total Stops	6553	6020	5685	6122
Fuel Used (gal)	107.5	98.0	99.2	104.8

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2496	2533	2556	2473	2517	2677	2582
Vehs Exited	2493	2622	2669	2542	2534	2562	2613
Starting Vehs	705	653	873	802	827	749	658
Ending Vehs	708	564	760	733	810	864	627
Travel Distance (mi)	2086	2160	2180	2102	2101	2144	2155
Travel Time (hr)	185.2	151.0	205.4	229.9	241.6	179.5	168.5
Total Delay (hr)	122.3	85.2	139.4	166.4	178.2	114.6	103.0
Total Stops	5898	5493	6883	6256	6614	6388	5721
Fuel Used (gal)	104.3	99.1	112.3	116.9	118.5	105.1	102.4

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2488	2505	2414	2525
Vehs Exited	2707	2510	2328	2556
Starting Vehs	888	867	729	774
Ending Vehs	669	862	815	739
Travel Distance (mi)	2212	2072	1915	2113
Travel Time (hr)	192.5	202.8	194.6	195.1
Total Delay (hr)	125.6	140.2	136.8	131.2
Total Stops	6717	6189	6025	6216
Fuel Used (gal)	111.2	108.4	101.1	107.9

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2479	2506	2547	2431	2471	2468	2582
Vehs Exited	2514	2561	2481	2430	2424	2534	2589
Starting Vehs	708	564	760	733	810	864	627
Ending Vehs	673	509	826	734	857	798	620
Travel Distance (mi)	2091	2108	2102	1990	2066	2052	2150
Travel Time (hr)	183.8	147.0	201.0	223.2	288.8	204.0	165.8
Total Delay (hr)	120.4	83.2	137.4	163.0	226.6	142.1	100.7
Total Stops	5552	5174	6289	5696	7044	6151	5606
Fuel Used (gal)	104.4	96.4	108.1	111.0	127.8	107.9	102.4

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2523	2506	2391	2491
Vehs Exited	2506	2562	2244	2485
Starting Vehs	669	862	815	739
Ending Vehs	686	806	962	747
Travel Distance (mi)	2097	2127	1868	2065
Travel Time (hr)	174.0	224.2	262.5	207.4
Total Delay (hr)	110.6	160.1	206.2	145.0
Total Stops	5615	6907	6404	6042
Fuel Used (gal)	102.7	115.3	115.8	109.2

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.0
Denied Del/Veh (s)	1.8	0.2	0.2	1.4	0.6	1.3	0.0	0.0	0.0	1.5	0.4	1.2
Total Delay (hr)	0.7	1.4	0.6	1.5	1.5	0.4	2.9	3.6	0.0	3.8	12.8	0.4
Total Del/Veh (s)	37.5	39.6	13.4	33.3	27.9	9.1	62.5	16.5	5.8	68.5	29.4	9.6
Stop Delay (hr)	0.6	1.2	0.5	1.3	1.2	0.3	2.7	2.4	0.0	3.2	7.5	0.2
Stop Del/Veh (s)	33.4	33.1	11.7	29.2	22.8	7.2	58.0	10.8	4.2	57.6	17.1	5.3

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.5
Total Delay (hr)	29.6
Total Del/Veh (s)	28.5
Stop Delay (hr)	21.1
Stop Del/Veh (s)	20.3

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.6	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.1	2.2	0.2	1.5	3.3	0.5	13.4	2.6	0.2	0.1	12.8	0.4
Total Del/Veh (s)	37.1	58.3	3.7	44.5	57.0	43.8	85.8	11.8	5.1	48.5	30.7	3.7
Stop Delay (hr)	1.0	2.0	0.0	1.3	3.0	0.5	12.1	1.1	0.0	0.1	9.5	0.2
Stop Del/Veh (s)	34.4	53.3	0.0	39.4	50.6	40.2	77.6	4.8	1.1	45.2	22.8	1.9

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.0
Total Delay (hr)	38.3
Total Del/Veh (s)	32.8
Stop Delay (hr)	30.8
Stop Del/Veh (s)	26.3

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	21.2	0.0	0.0	0.0	0.0	0.0	21.3
Denied Del/Veh (s)	62.2	0.2	0.0	0.0	0.0	0.1	15.3
Total Delay (hr)	21.3	0.0	3.5	0.7	1.2	10.7	37.5
Total Del/Veh (s)	65.2	0.5	9.9	6.1	15.5	24.3	27.1
Stop Delay (hr)	15.9	0.0	1.1	0.0	0.7	6.2	24.0
Stop Del/Veh (s)	48.7	0.0	3.2	0.4	8.9	14.0	17.4

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.1	3.5	2.4	2.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.6	0.1	0.1	13.7	3.7	16.4	0.8	12.2	0.2	7.1	19.7	2.9
Total Del/Veh (s)	41.8	42.9	30.9	356.9	309.4	142.0	59.2	34.6	7.6	44.5	40.7	25.5
Stop Delay (hr)	0.6	0.1	0.1	13.7	3.7	15.7	0.7	7.4	0.1	5.9	14.7	2.1
Stop Del/Veh (s)	39.9	39.7	30.7	356.9	307.7	135.4	49.7	21.2	5.4	36.8	30.5	18.4

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.4
Total Delay (hr)	77.4
Total Del/Veh (s)	58.2
Stop Delay (hr)	64.7
Stop Del/Veh (s)	48.6

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.7	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	15.3	3.4	1.4	9.9	6.2	0.5	12.9	14.1	2.0	4.2	33.1	22.3
Total Del/Veh (s)	179.0	77.3	46.3	50.4	38.5	11.7	244.9	52.7	24.4	138.6	103.7	130.3
Stop Delay (hr)	14.5	3.0	1.3	8.6	4.9	0.4	12.6	12.8	1.9	3.8	26.4	19.9
Stop Del/Veh (s)	169.7	68.1	42.1	43.9	30.7	9.6	239.2	47.8	22.8	125.1	82.9	116.2

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.1
Total Delay (hr)	125.3
Total Del/Veh (s)	84.6
Stop Delay (hr)	110.1
Stop Del/Veh (s)	74.3

6: Latrobe Rd & Driveway Performance by movement

Movement	NBT	SBT	All
Denied Delay (hr)	0.6	0.0	0.6
Denied Del/Veh (s)	1.6	0.0	0.7
Total Delay (hr)	2.1	0.7	2.8
Total Del/Veh (s)	5.1	1.4	3.0
Stop Delay (hr)	1.6	0.0	1.6
Stop Del/Veh (s)	3.9	0.0	1.7

7: Latrobe Rd & Golden Foothill Pkwy N/Monte Verde Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.6	0.3	1.6	0.2	0.0	0.0	0.1
Total Delay (hr)	1.7	0.9	1.9	1.2	4.4	1.0	11.0
Total Del/Veh (s)	53.1	32.8	58.9	4.6	9.8	11.5	12.4
Stop Delay (hr)	1.6	0.8	1.8	0.7	2.6	0.5	7.9
Stop Del/Veh (s)	49.2	30.0	54.8	2.6	5.7	6.3	8.9

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.8	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1	3.5	0.3	0.4
Total Delay (hr)	3.7	2.7	0.0	0.9	15.9	1.5	1.2	0.2	0.1	0.7	0.1	1.4
Total Del/Veh (s)	92.7	24.5	6.7	77.0	46.7	28.8	96.6	45.0	9.6	62.3	53.6	33.3
Stop Delay (hr)	3.5	2.1	0.0	0.7	9.2	0.8	1.1	0.1	0.1	0.7	0.1	1.4
Stop Del/Veh (s)	87.8	18.9	4.2	59.6	27.0	14.5	93.6	41.4	9.3	58.5	49.1	31.3

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	28.5
Total Del/Veh (s)	44.4
Stop Delay (hr)	19.8
Stop Del/Veh (s)	30.9

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	2.5	14.5	1.9	0.2	0.0	0.0	0.1	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	43.0	41.5	42.0	3.5	0.7	0.7	4.0	0.3	0.3
Total Delay (hr)	1.0	2.9	0.4	6.9	29.6	3.3	1.6	0.4	0.5	0.6	0.1	0.2
Total Del/Veh (s)	59.3	30.0	21.5	119.1	85.4	74.1	33.5	31.8	12.3	30.5	29.1	15.2
Stop Delay (hr)	0.9	2.0	0.2	5.8	21.8	2.5	1.4	0.3	0.4	0.5	0.1	0.2
Stop Del/Veh (s)	52.5	20.1	14.5	100.8	62.7	55.7	29.8	26.9	10.0	28.2	25.8	14.3

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	19.1
Denied Del/Veh (s)	26.7
Total Delay (hr)	47.5
Total Del/Veh (s)	66.2
Stop Delay (hr)	36.2
Stop Del/Veh (s)	50.4

Total Network Performance

Denied Delay (hr)	42.4
Denied Del/Veh (s)	14.7
Total Delay (hr)	433.2
Total Del/Veh (s)	144.3
Stop Delay (hr)	335.6
Stop Del/Veh (s)	111.8

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (ft)	48	102	158	130	189	195	122	236	225	209	213	59
Average Queue (ft)	12	39	73	62	90	89	43	126	83	95	103	6
95th Queue (ft)	39	77	133	109	157	156	88	222	171	173	182	39
Link Distance (ft)			1180	1180		1429			469	469	469	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)			0		0	0	0	2	0		0	
Queuing Penalty (veh)			0		1	1	0	4	0		0	

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (ft)	124	571	454	421	192
Average Queue (ft)	114	286	216	182	39
95th Queue (ft)	148	508	409	344	122
Link Distance (ft)		1017	1017	1017	
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	100				200
Storage Blk Time (%)	25	28		2	0
Queuing Penalty (veh)	132	53		3	0

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	L	L	T	R	L	L	T	T	T	TR
Maximum Queue (ft)	136	226	94	166	401	175	414	430	402	249	209	145
Average Queue (ft)	51	106	31	75	161	45	243	244	131	71	70	27
95th Queue (ft)	101	190	70	166	351	128	419	431	374	195	168	93
Link Distance (ft)	1070	1070			1644			626	626	626	626	626
Upstream Blk Time (%)								0	0			
Queuing Penalty (veh)								1	1			
Storage Bay Dist (ft)			150	150		150	550					
Storage Blk Time (%)				0	13	0	0	1				
Queuing Penalty (veh)				0	21	0	0	2				

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB	SB	SB	B46	B46	B46	B46
Directions Served	L	T	T	TR	R	T	T	T	T
Maximum Queue (ft)	163	309	279	296	239	158	126	98	64
Average Queue (ft)	10	211	163	180	61	18	7	8	4
95th Queue (ft)	78	333	285	294	184	111	76	67	63
Link Distance (ft)		229	229	229	229	469	469	469	469
Upstream Blk Time (%)	0	15	4	6	1	0	0		
Queuing Penalty (veh)	0	71	19	28	4	0	0		
Storage Bay Dist (ft)	200								
Storage Blk Time (%)		20							
Queuing Penalty (veh)		2							

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	1035	439	190	260	187	198	176	118	168	313	336	411
Average Queue (ft)	496	299	63	59	39	59	8	36	43	79	78	113
95th Queue (ft)	1236	529	152	167	120	140	76	85	139	250	289	342
Link Distance (ft)	1203			568	568	568	568			626	626	626
Upstream Blk Time (%)	14									0	0	1
Queuing Penalty (veh)	0									0	2	5
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)	3	18	1	1						0		
Queuing Penalty (veh)	21	111	2	2						0		

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	421
Average Queue (ft)	103
95th Queue (ft)	319
Link Distance (ft)	626
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	48	74	35	40	125	1174	1150	62	249	523	554	537
Average Queue (ft)	16	28	8	10	119	709	579	16	49	209	197	222
95th Queue (ft)	43	61	28	33	148	1398	1312	46	175	429	426	444
Link Distance (ft)			2013	2013		1391	1391			837	837	837
Upstream Blk Time (%)						5	1					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					53	53			0	9		
Queuing Penalty (veh)					131	70			0	4		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	221	282	317	488	558	615	588
Average Queue (ft)	27	157	183	174	308	412	345
95th Queue (ft)	121	255	288	378	615	736	769
Link Distance (ft)	837			568	568	568	568
Upstream Blk Time (%)				0	1	18	17
Queuing Penalty (veh)				2	6	124	117
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		0	0	2			
Queuing Penalty (veh)		0	2	10			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	315	333	586	256	187	200	334	326	141	271	366	332
Average Queue (ft)	204	229	179	121	161	180	274	189	50	248	304	162
95th Queue (ft)	364	383	510	216	244	266	428	336	108	314	440	310
Link Distance (ft)			1341	1341			311	311	311		271	271
Upstream Blk Time (%)							18	1		36	64	5
Queuing Penalty (veh)							86	5		0	236	20
Storage Bay Dist (ft)	325	325			175	175				270		
Storage Blk Time (%)	3	14	0		5	33	8			41	64	
Queuing Penalty (veh)	2	10	0		16	93	56			98	130	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B80	B25	B25	B25	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	T	T	L	L	T
Maximum Queue (ft)	322	330	62	328	306	306	440	433	376	151	250	826
Average Queue (ft)	167	160	44	226	129	105	200	153	61	45	123	443
95th Queue (ft)	307	323	66	452	318	303	522	464	296	113	286	851
Link Distance (ft)	271	271		242	242	242	492	492	492			837
Upstream Blk Time (%)	6	9		57	6	7	10	1	1			4
Queuing Penalty (veh)	21	32		281	32	35	47	7	6			23
Storage Bay Dist (ft)			25							225	225	
Storage Blk Time (%)		31	13							0	0	32
Queuing Penalty (veh)		94	31							0	1	36

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	851	853	275
Average Queue (ft)	556	704	266
95th Queue (ft)	942	1051	321
Link Distance (ft)	837	837	
Upstream Blk Time (%)	4	12	
Queuing Penalty (veh)	26	78	
Storage Bay Dist (ft)			250
Storage Blk Time (%)		23	53
Queuing Penalty (veh)		144	207

Intersection: 6: Latrobe Rd & Driveway

Movement	NB	NB	NB	SB	B25	B25	B80	B80	B80
Directions Served	T	T	TR	T	T	T	T	T	T
Maximum Queue (ft)	230	182	128	11	17	8	52	99	6
Average Queue (ft)	36	28	16	0	1	0	3	4	0
95th Queue (ft)	202	173	144	9	10	6	39	53	2
Link Distance (ft)	493	493	493	492	242	242	271	271	271
Upstream Blk Time (%)	1	0	0					0	
Queuing Penalty (veh)	2	1	1					0	
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 7: Latrobe Rd & Golden Foothill Pkwy N/Monte Verde Dr

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	L	T	T	TR	T	T	TR
Maximum Queue (ft)	125	239	187	141	120	144	332	379	398
Average Queue (ft)	47	112	95	53	42	56	135	153	175
95th Queue (ft)	111	201	168	115	99	124	289	315	347
Link Distance (ft)		1299		1680	1680	1680	493	493	493
Upstream Blk Time (%)									0
Queuing Penalty (veh)									0
Storage Bay Dist (ft)	100		200						
Storage Blk Time (%)	0	16	1				3		
Queuing Penalty (veh)	0	9	2				0		

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	104	310	262	116	145	742	561	122	61	75	256
Average Queue (ft)	90	154	118	14	44	393	283	45	17	39	105
95th Queue (ft)	128	306	233	66	125	713	508	103	45	82	210
Link Distance (ft)		311	311			1512	1512	619	619		554
Upstream Blk Time (%)		3	0								
Queuing Penalty (veh)		7	0								
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	42	8	8	0	0	44				15	35
Queuing Penalty (veh)	87	11	2	0	0	18				24	14

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	141	234	230	145	792	776	124	234	98	90
Average Queue (ft)	52	95	109	132	663	650	91	90	43	32
95th Queue (ft)	112	188	202	172	939	941	139	190	84	66
Link Distance (ft)		1512	1512		743	743		566		338
Upstream Blk Time (%)					39	22				
Queuing Penalty (veh)					0	0				
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)	1	4		26	46		11	4	1	0
Queuing Penalty (veh)	1	2		167	93		20	7	1	0

Network Summary

Network wide Queuing Penalty: 3279

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	110	93	117	915	1317	310
Future Volume (veh/h)	110	93	117	915	1317	310
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	120	101	127	995	1432	337
Adj No. of Lanes	1	1	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	197	176	162	2388	2049	480
Arrive On Green	0.11	0.11	0.09	0.67	0.50	0.50
Sat Flow, veh/h	1774	1583	1774	3632	4285	966
Grp Volume(v), veh/h	120	101	127	995	1178	591
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1695	1692
Q Serve(g_s), s	3.0	2.8	3.3	5.9	12.5	12.6
Cycle Q Clear(g_c), s	3.0	2.8	3.3	5.9	12.5	12.6
Prop In Lane	1.00	1.00	1.00			0.57
Lane Grp Cap(c), veh/h	197	176	162	2388	1687	842
V/C Ratio(X)	0.61	0.58	0.79	0.42	0.70	0.70
Avail Cap(c_a), veh/h	609	544	190	2582	1819	908
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	19.8	19.7	20.7	3.4	9.0	9.0
Incr Delay (d2), s/veh	3.0	3.0	13.8	0.2	0.9	1.8
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	2.6	2.2	2.8	5.9	6.2
LnGrp Delay(d),s/veh	22.8	22.6	34.5	3.6	9.9	10.8
LnGrp LOS	C	C	C	A	A	B
Approach Vol, veh/h	221			1122	1769	
Approach Delay, s/veh	22.7			7.1	10.2	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		37.4		9.2	8.2	29.2		
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0		
Max Green Setting (Gmax), s		34.0		16.0	5.0	25.0		
Max Q Clear Time (g_c+I1), s		7.9		5.0	5.3	14.6		
Green Ext Time (p_c), s		17.8		0.5	0.0	8.6		

Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	100	110	10	250	380	180	582	10	250	779	400
Future Volume (veh/h)	80	100	110	10	250	380	180	582	10	250	779	400
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	87	109	120	11	370	348	196	633	11	272	847	435
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	128	141	11	356	312	182	1165	20	301	896	456
Arrive On Green	0.16	0.16	0.16	0.20	0.20	0.20	0.10	0.33	0.33	0.17	0.39	0.39
Sat Flow, veh/h	1774	812	893	54	1806	1583	1774	3560	62	1774	2272	1157
Grp Volume(v), veh/h	87	0	229	381	0	348	196	315	329	272	658	624
Grp Sat Flow(s),veh/h/ln	1774	0	1705	1860	0	1583	1774	1770	1852	1774	1770	1659
Q Serve(g_s), s	5.5	0.0	16.6	25.0	0.0	25.0	13.0	18.5	18.5	19.1	45.5	46.3
Cycle Q Clear(g_c), s	5.5	0.0	16.6	25.0	0.0	25.0	13.0	18.5	18.5	19.1	45.5	46.3
Prop In Lane	1.00		0.52	0.03		1.00	1.00		0.03	1.00		0.70
Lane Grp Cap(c), veh/h	281	0	270	366	0	312	182	579	606	301	698	654
V/C Ratio(X)	0.31	0.00	0.85	1.04	0.00	1.12	1.08	0.54	0.54	0.91	0.94	0.95
Avail Cap(c_a), veh/h	517	0	497	366	0	312	182	579	606	377	714	669
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	0.0	51.9	51.0	0.0	51.0	57.0	34.9	34.9	51.7	37.1	37.3
Incr Delay (d2), s/veh	0.6	0.0	7.3	57.8	0.0	85.9	89.3	1.0	1.0	21.4	20.8	23.8
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	2.8	0.0	8.4	18.7	0.0	18.3	10.9	9.2	9.6	11.2	26.2	25.5
LnGrp Delay(d),s/veh	47.9	0.0	59.2	108.7	0.0	136.9	146.2	36.0	35.9	73.1	57.9	61.1
LnGrp LOS	D		E	F		F	F	D	D	E	E	E
Approach Vol, veh/h		316			729			840			1554	
Approach Delay, s/veh		56.1			122.2			61.7			61.8	
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	25.5	46.8		30.0	17.0	55.3		24.6
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	27.0	37.2		25.0	13.0	51.2		37.0
Max Q Clear Time (g_c+I1), s	21.1	20.5		27.0	15.0	48.3		18.6
Green Ext Time (p_c), s	0.4	11.6		0.0	0.0	1.7		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	74.1
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	513	20	20	777	70	60	0	60	110	0	90
Future Volume (veh/h)	30	513	20	20	777	70	60	0	60	110	0	90
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	558	22	22	845	76	65	0	65	120	0	98
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	1485	58	38	1484	664	87	0	87	186	0	166
Arrive On Green	0.03	0.43	0.43	0.02	0.42	0.42	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1774	3472	137	1774	3539	1583	837	0	837	1774	0	1583
Grp Volume(v), veh/h	33	284	296	22	845	76	130	0	0	120	0	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1839	1774	1770	1583	1673	0	0	1774	0	1583
Q Serve(g_s), s	0.9	5.2	5.2	0.6	8.6	1.4	3.6	0.0	0.0	3.1	0.0	2.8
Cycle Q Clear(g_c), s	0.9	5.2	5.2	0.6	8.6	1.4	3.6	0.0	0.0	3.1	0.0	2.8
Prop In Lane	1.00		0.07	1.00		1.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	53	757	786	38	1484	664	175	0	0	186	0	166
V/C Ratio(X)	0.63	0.38	0.38	0.58	0.57	0.11	0.74	0.00	0.00	0.65	0.00	0.59
Avail Cap(c_a), veh/h	150	971	1009	150	1942	869	1059	0	0	329	0	294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.7	9.2	9.2	23.0	10.5	8.4	20.6	0.0	0.0	20.4	0.0	20.2
Incr Delay (d2), s/veh	4.4	0.3	0.3	5.2	0.4	0.1	2.4	0.0	0.0	1.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.6	2.7	0.3	4.2	0.6	1.7	0.0	0.0	1.6	0.0	1.3
LnGrp Delay(d),s/veh	27.2	9.6	9.6	28.2	10.9	8.5	23.0	0.0	0.0	21.8	0.0	21.5
LnGrp LOS	C	A	A	C	B	A	C			C		C
Approach Vol, veh/h		613			943			130			218	
Approach Delay, s/veh		10.5			11.1			23.0			21.6	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	25.6		8.4	4.5	26.0		8.5
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	4.0	26.0		30.0	4.0	26.0		8.8
Max Q Clear Time (g_c+I1), s	2.9	10.6		5.6	2.6	7.2		5.1
Green Ext Time (p_c), s	0.0	9.2		0.5	0.0	10.5		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	420	223	700	690	0	147	20	120	0	20	30
Future Volume (veh/h)	40	420	223	700	690	0	147	20	120	0	20	30
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	457	242	761	750	0	160	22	130	0	22	33
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	577	303	781	2388	0	133	39	229	2	36	53
Arrive On Green	0.03	0.26	0.26	0.44	0.67	0.00	0.07	0.17	0.17	0.00	0.05	0.05
Sat Flow, veh/h	1774	2244	1180	1774	3632	0	1774	234	1384	1774	674	1011
Grp Volume(v), veh/h	43	360	339	761	750	0	160	0	152	0	0	55
Grp Sat Flow(s),veh/h/ln	1774	1770	1655	1774	1770	0	1774	0	1618	1774	0	1684
Q Serve(g_s), s	2.8	22.3	22.6	49.5	10.3	0.0	8.8	0.0	10.2	0.0	0.0	3.8
Cycle Q Clear(g_c), s	2.8	22.3	22.6	49.5	10.3	0.0	8.8	0.0	10.2	0.0	0.0	3.8
Prop In Lane	1.00		0.71	1.00		0.00	1.00		0.86	1.00		0.60
Lane Grp Cap(c), veh/h	55	455	425	781	2388	0	133	0	267	2	0	89
V/C Ratio(X)	0.78	0.79	0.80	0.97	0.31	0.00	1.21	0.00	0.57	0.00	0.00	0.62
Avail Cap(c_a), veh/h	139	455	425	941	2388	0	133	0	524	53	0	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	56.6	40.8	40.9	32.3	7.9	0.0	54.4	0.0	45.3	0.0	0.0	54.6
Incr Delay (d2), s/veh	8.6	13.1	14.4	20.5	0.3	0.0	143.9	0.0	0.7	0.0	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	12.6	12.0	28.5	5.1	0.0	9.6	0.0	4.6	0.0	0.0	1.8
LnGrp Delay(d),s/veh	65.2	53.9	55.3	52.7	8.2	0.0	198.3	0.0	46.0	0.0	0.0	57.1
LnGrp LOS	E	D	E	D	A		F		D			E
Approach Vol, veh/h		742			1511			312			55	
Approach Delay, s/veh		55.2			30.7			124.1			57.1	
Approach LOS		E			C			F			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	57.4	36.2	13.2	10.8	8.3	85.4	0.0	24.0
Change Period (Y+Rc), s	5.6	6.0	4.4	4.6	4.6	6.0	4.6	4.6
Max Green Setting (Gmax), s	62.4	25.2	8.8	33.0	9.2	79.4	3.5	38.1
Max Q Clear Time (g_c+I1), s	51.5	24.6	10.8	5.8	4.8	12.3	0.0	12.2
Green Ext Time (p_c), s	0.3	0.5	0.0	0.5	0.0	19.6	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	49.3
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	867	10	0	1848
Future Vol, veh/h	0	10	867	10	0	1848
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	942	11	0	2009

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	477	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	534	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	534	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	534	-
HCM Lane V/C Ratio	-	-	0.02	-
HCM Control Delay (s)	-	-	11.9	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1048	10	260	0	617	30	0	678	1170
Future Volume (veh/h)	0	0	0	1048	10	260	0	617	30	0	678	1170
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	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				1147	0	283	0	671	0	0	737	1272
Adj No. of Lanes				2	0	1	0	2	1	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				1121	0	500	0	2166	969	0	2166	969
Arrive On Green				0.32	0.00	0.32	0.00	1.00	0.00	0.00	0.61	0.61
Sat Flow, veh/h				3548	0	1583	0	3632	1583	0	3632	1583
Grp Volume(v), veh/h				1147	0	283	0	671	0	0	737	1272
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1770	1583	0	1770	1583
Q Serve(g_s), s				39.5	0.0	18.6	0.0	0.0	0.0	0.0	12.8	76.5
Cycle Q Clear(g_c), s				39.5	0.0	18.6	0.0	0.0	0.0	0.0	12.8	76.5
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1121	0	500	0	2166	969	0	2166	969
V/C Ratio(X)				1.02	0.00	0.57	0.00	0.31	0.00	0.00	0.34	1.31
Avail Cap(c_a), veh/h				1121	0	500	0	2166	969	0	2166	969
HCM Platoon Ratio				1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.95	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				42.8	0.0	35.6	0.0	0.0	0.0	0.0	11.9	24.3
Incr Delay (d2), s/veh				32.9	0.0	1.5	0.0	0.4	0.0	0.0	0.4	148.1
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				24.4	0.0	8.3	0.0	0.1	0.0	0.0	6.3	73.0
LnGrp Delay(d),s/veh				75.6	0.0	37.1	0.0	0.4	0.0	0.0	12.3	172.4
LnGrp LOS				F		D		A			B	F
Approach Vol, veh/h					1430			671			2009	
Approach Delay, s/veh					68.0			0.4			113.7	
Approach LOS					E			A			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		81.0				81.0		44.0
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		76.5				76.5		39.5
Max Q Clear Time (g_c+I1), s		2.0				78.5		41.5
Green Ext Time (p_c), s		40.3				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.3
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	0	40	0	0	0	76	397	210	0	1525	200
Future Volume (veh/h)	250	0	40	0	0	0	76	397	210	0	1525	200
Number	7	4	14				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	0	1863				1900	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	272	0	43				83	432	0	0	1658	0
Adj No. of Lanes	2	0	1				0	3	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				2	2	2	0	2	2
Cap, veh/h	347	0	160				305	2552	1310	0	4206	1310
Arrive On Green	0.10	0.00	0.10				0.83	0.83	0.00	0.00	1.00	0.00
Sat Flow, veh/h	3442	0	1583				299	3085	1583	0	5253	1583
Grp Volume(v), veh/h	272	0	43				83	432	0	0	1658	0
Grp Sat Flow(s),veh/h/ln	1721	0	1583				299	1543	1583	0	1695	1583
Q Serve(g_s), s	9.6	0.0	3.1				8.3	3.5	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.6	0.0	3.1				8.3	3.5	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	347	0	160				305	2552	1310	0	4206	1310
V/C Ratio(X)	0.78	0.00	0.27				0.27	0.17	0.00	0.00	0.39	0.00
Avail Cap(c_a), veh/h	757	0	348				305	2552	1310	0	4206	1310
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	0.70	0.00
Uniform Delay (d), s/veh	54.9	0.0	51.9				2.6	2.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.9	0.0	0.9				2.2	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	1.4				0.9	1.6	0.0	0.0	0.1	0.0
LnGrp Delay(d),s/veh	58.8	0.0	52.8				4.8	2.3	0.0	0.0	0.2	0.0
LnGrp LOS	E		D				A	A			A	
Approach Vol, veh/h		315						515			1658	
Approach Delay, s/veh		58.0						2.7			0.2	
Approach LOS		E						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		107.9		17.1		107.9		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		88.5		27.5		88.5		
Max Q Clear Time (g_c+I1), s		10.3		11.6		2.0		
Green Ext Time (p_c), s		39.1		1.0		40.8		

Intersection Summary		
HCM 2010 Ctrl Delay		8.0
HCM 2010 LOS		A

Montano de El Dorado — Cumulative (2035) Conditions
SimTraffic Simulation Summary — PM Peak

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	4:50	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	10204	10437	10518	10441	10695	9733	10713
Vehs Exited	9516	10111	10039	9995	10051	9229	10147
Starting Vehs	618	686	710	680	679	662	634
Ending Vehs	1306	1012	1189	1126	1323	1166	1200
Travel Distance (mi)	7107	7579	7569	7503	7570	6904	7656
Travel Time (hr)	1252.7	1085.1	1119.9	1243.8	1064.4	1431.4	1162.8
Total Delay (hr)	1040.7	859.6	895.5	1020.3	839.5	1226.0	935.0
Total Stops	24858	26892	27344	27264	27355	25294	27916
Fuel Used (gal)	510.1	488.8	495.6	521.2	482.3	545.5	508.7

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	10773	10591	10300	10438
Vehs Exited	10308	10106	9953	9943
Starting Vehs	603	642	683	655
Ending Vehs	1068	1127	1030	1157
Travel Distance (mi)	7819	7653	7417	7478
Travel Time (hr)	1007.3	1105.0	1231.5	1170.4
Total Delay (hr)	774.2	876.8	1011.2	947.9
Total Stops	27847	28688	25177	26866
Fuel Used (gal)	477.0	492.9	515.5	503.8

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

No data recorded this interval.

Interval #1 Information

Start Time	5:00
End Time	5:15
Total Time (min)	15

Run Number	1	10	2	3	4	5	6
Vehs Entered	2830	2782	2786	2791	2738	2789	2767
Vehs Exited	2550	2558	2691	2572	2597	2510	2502
Starting Vehs	618	686	710	680	679	662	634
Ending Vehs	898	910	805	899	820	941	899
Travel Distance (mi)	1963	1971	2003	1972	1969	1948	1917
Travel Time (hr)	193.8	200.0	190.9	211.9	181.5	204.4	192.1
Total Delay (hr)	134.9	141.2	131.4	153.2	122.8	146.1	134.9
Total Stops	6317	6538	6531	6581	6389	6465	6092
Fuel Used (gal)	105.0	107.7	106.2	110.7	102.8	108.2	103.7

Interval #1 Information

Start Time	5:00
End Time	5:15
Total Time (min)	15

Run Number	7	8	9	Avg
Vehs Entered	2772	2748	2760	2776
Vehs Exited	2557	2528	2578	2564
Starting Vehs	603	642	683	655
Ending Vehs	818	862	865	872
Travel Distance (mi)	1977	1951	1968	1964
Travel Time (hr)	178.9	192.9	211.3	195.8
Total Delay (hr)	120.0	134.7	153.0	137.2
Total Stops	6456	6339	6382	6412
Fuel Used (gal)	102.9	105.0	110.3	106.3

Interval #2 Information

Start Time	5:15
End Time	5:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2631	2631	2689	2536	2779	2695	2741
Vehs Exited	2610	2661	2587	2589	2703	2637	2711
Starting Vehs	898	910	805	899	820	941	899
Ending Vehs	919	880	907	846	896	999	929
Travel Distance (mi)	1887	1995	1947	1902	2014	1964	2051
Travel Time (hr)	256.3	243.3	248.3	273.3	231.4	281.8	260.8
Total Delay (hr)	199.6	183.8	190.3	216.4	171.3	223.1	199.7
Total Stops	6416	7161	6900	6846	7277	7675	7384
Fuel Used (gal)	118.2	118.6	118.2	122.6	115.6	126.4	124.1

Interval #2 Information

Start Time	5:15
End Time	5:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2754	2674	2640	2677
Vehs Exited	2674	2610	2639	2644
Starting Vehs	818	862	865	872
Ending Vehs	898	926	866	904
Travel Distance (mi)	2019	1957	1957	1969
Travel Time (hr)	233.9	253.3	256.5	253.9
Total Delay (hr)	173.9	194.8	198.0	195.1
Total Stops	7179	7590	6438	7090
Fuel Used (gal)	116.5	118.9	120.2	119.9

Interval #3 Information

Start Time	5:30
End Time	5:45
Total Time (min)	15

Run Number	1	10	2	3	4	5	6
Vehs Entered	2421	2674	2546	2597	2720	2433	2746
Vehs Exited	2359	2505	2443	2464	2574	2212	2612
Starting Vehs	919	880	907	846	896	999	929
Ending Vehs	981	1049	1010	979	1042	1220	1063
Travel Distance (mi)	1745	1878	1853	1836	1917	1646	1958
Travel Time (hr)	327.8	284.7	294.9	333.2	274.8	374.4	316.6
Total Delay (hr)	276.1	228.8	239.7	278.4	217.8	325.5	258.6
Total Stops	6456	7066	7029	6824	7353	6323	7615
Fuel Used (gal)	130.2	125.1	126.0	133.4	124.4	137.7	135.1

Interval #3 Information

Start Time	5:30
End Time	5:45
Total Time (min)	15

Run Number	7	8	9	Avg
Vehs Entered	2639	2734	2524	2605
Vehs Exited	2568	2585	2470	2479
Starting Vehs	898	926	866	904
Ending Vehs	969	1075	920	1032
Travel Distance (mi)	1910	1952	1813	1851
Travel Time (hr)	270.3	287.8	320.8	308.5
Total Delay (hr)	213.2	229.8	266.9	253.5
Total Stops	7091	7278	6139	6921
Fuel Used (gal)	122.4	127.0	130.5	129.2

Interval #4 Information Recording

Start Time	5:45
End Time	6:00
Total Time (min)	15

Run Number	1	10	2	3	4	5	6
Vehs Entered	2322	2350	2497	2517	2458	1816	2459
Vehs Exited	1997	2387	2318	2370	2177	1870	2322
Starting Vehs	981	1049	1010	979	1042	1220	1063
Ending Vehs	1306	1012	1189	1126	1323	1166	1200
Travel Distance (mi)	1512	1735	1767	1792	1670	1345	1731
Travel Time (hr)	474.7	357.2	385.8	425.3	376.8	570.9	393.3
Total Delay (hr)	430.0	305.8	334.2	372.3	327.7	531.3	341.8
Total Stops	5669	6127	6884	7013	6336	4831	6825
Fuel Used (gal)	156.7	137.4	145.2	154.5	139.6	173.1	145.8

Interval #4 Information Recording

Start Time	5:45
End Time	6:00
Total Time (min)	15

Run Number	7	8	9	Avg
Vehs Entered	2608	2435	2376	2380
Vehs Exited	2509	2383	2266	2259
Starting Vehs	969	1075	920	1032
Ending Vehs	1068	1127	1030	1157
Travel Distance (mi)	1913	1793	1679	1694
Travel Time (hr)	324.2	371.1	442.9	412.2
Total Delay (hr)	267.1	317.5	393.3	362.1
Total Stops	7121	7481	6218	6446
Fuel Used (gal)	135.2	141.9	154.5	148.4

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.7	0.7	0.6	0.3	0.1	0.4	0.0	0.0	0.0	1.1	4.2	0.2
Denied Del/Veh (s)	9.4	6.9	6.9	4.6	4.6	4.4	0.0	0.0	0.0	18.5	16.2	20.1
Total Delay (hr)	8.7	11.0	3.3	4.7	1.1	2.5	1.7	9.5	0.1	10.1	16.3	0.1
Total Del/Veh (s)	110.2	114.6	37.8	67.8	44.0	27.3	54.1	32.8	12.0	166.5	64.9	13.3
Stop Delay (hr)	7.5	9.4	2.8	4.4	0.9	2.2	1.5	7.1	0.0	9.4	12.8	0.1
Stop Del/Veh (s)	95.6	97.7	32.7	62.2	38.2	24.3	49.6	24.5	8.9	155.2	50.8	9.2

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	8.4
Denied Del/Veh (s)	7.7
Total Delay (hr)	69.1
Total Del/Veh (s)	63.1
Stop Delay (hr)	58.2
Stop Del/Veh (s)	53.2

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	8.3	6.3	6.6	0.2	0.0	0.0	0.0	0.7	0.0
Total Delay (hr)	3.3	7.2	0.0	6.5	8.3	0.7	21.1	4.3	0.6	0.3	27.6	0.2
Total Del/Veh (s)	132.0	188.2	3.4	137.7	123.5	120.2	78.0	14.4	7.6	141.2	77.0	8.4
Stop Delay (hr)	3.2	7.0	0.0	6.1	7.7	0.7	17.5	2.2	0.2	0.3	23.9	0.1
Stop Del/Veh (s)	128.0	182.1	0.1	129.3	113.4	113.2	64.6	7.5	2.5	134.3	66.7	4.8

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	1.2
Denied Del/Veh (s)	1.0
Total Delay (hr)	80.1
Total Del/Veh (s)	65.3
Stop Delay (hr)	68.8
Stop Del/Veh (s)	56.1

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.5	0.0	0.0	0.0	0.0	0.1	0.6
Denied Del/Veh (s)	5.1	0.3	0.0	0.0	0.0	0.2	0.5
Total Delay (hr)	17.7	0.1	9.1	1.2	2.9	16.7	47.5
Total Del/Veh (s)	165.1	0.7	16.8	6.9	49.3	48.1	36.1
Stop Delay (hr)	16.8	0.0	4.4	0.1	2.3	12.8	36.4
Stop Del/Veh (s)	156.7	0.0	8.2	0.7	39.8	36.8	27.6

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.2	0.0	0.0	6.1	1.0	64.9	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.6	0.2	0.2	298.8	355.1	293.5	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay (hr)	6.9	0.5	0.6	12.6	1.3	66.0	0.3	28.7	0.4	24.0	13.2	0.1
Total Del/Veh (s)	60.2	51.6	40.1	839.0	564.4	416.3	102.6	62.0	12.3	149.0	51.3	7.0
Stop Delay (hr)	6.4	0.5	0.6	12.7	1.3	65.1	0.2	20.7	0.3	21.5	11.1	0.1
Stop Del/Veh (s)	55.2	48.4	39.1	849.0	568.3	410.4	89.5	44.8	9.7	132.9	43.2	5.2

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	72.2
Denied Del/Veh (s)	55.0
Total Delay (hr)	154.8
Total Del/Veh (s)	123.0
Stop Delay (hr)	140.6
Stop Del/Veh (s)	111.7

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	4.6	5.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	29.7	29.7	28.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	36.9	39.4	5.0	12.8	2.9	0.5	2.9	13.9	13.4	36.4	6.3	0.7
Total Del/Veh (s)	237.5	209.8	180.7	91.5	30.7	9.4	113.8	45.9	134.3	585.6	37.3	11.8
Stop Delay (hr)	32.4	33.6	4.3	11.9	2.2	0.4	2.8	12.2	13.8	36.1	4.7	0.4
Stop Del/Veh (s)	208.1	178.8	155.4	84.5	23.7	6.9	110.6	40.3	138.8	579.8	27.8	7.3

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	11.0
Denied Del/Veh (s)	8.1
Total Delay (hr)	171.1
Total Del/Veh (s)	124.5
Stop Delay (hr)	154.7
Stop Del/Veh (s)	112.6

6: Latrobe Rd & Driveway Performance by movement

Movement	NBT	SBT	All
Denied Delay (hr)	52.1	0.0	52.1
Denied Del/Veh (s)	112.4	0.0	66.0
Total Delay (hr)	16.8	0.2	17.0
Total Del/Veh (s)	39.2	0.7	22.6
Stop Delay (hr)	14.7	0.0	14.7
Stop Del/Veh (s)	34.2	0.0	19.5

7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	5.3	0.1	0.6	0.0	0.0	0.0	0.3	19.9	0.2	0.0	0.0	0.0
Denied Del/Veh (s)	50.3	48.5	53.8	0.1	0.1	0.1	46.5	58.3	50.9	0.0	0.0	0.0
Total Delay (hr)	11.9	0.4	1.4	0.1	0.1	0.0	0.2	20.5	0.7	0.1	2.4	0.4
Total Del/Veh (s)	120.6	135.7	129.4	27.6	30.9	21.0	35.5	64.1	162.0	32.4	8.3	9.6
Stop Delay (hr)	11.4	0.4	1.4	0.1	0.1	0.0	0.2	18.5	0.7	0.1	1.6	0.2
Stop Del/Veh (s)	115.4	129.3	125.3	25.5	27.5	20.4	30.8	57.8	160.3	30.1	5.5	6.6

7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr Performance by movement

Movement	All
Denied Delay (hr)	26.5
Denied Del/Veh (s)	32.9
Total Delay (hr)	38.3
Total Del/Veh (s)	49.1
Stop Delay (hr)	34.7
Stop Del/Veh (s)	44.6

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	1.6	35.0
Denied Del/Veh (s)	0.4	0.2	0.5	0.0	0.0	0.0	0.1	0.1	0.1	536.9	468.2	533.9
Total Delay (hr)	8.0	8.6	0.1	1.1	5.7	0.8	1.5	0.1	0.1	11.8	0.6	12.4
Total Del/Veh (s)	124.3	34.2	18.8	94.8	25.2	17.9	92.1	43.2	12.5	318.1	275.6	250.1
Stop Delay (hr)	7.5	6.4	0.1	1.0	2.4	0.3	1.5	0.1	0.1	11.6	0.6	12.1
Stop Del/Veh (s)	117.1	25.4	13.1	83.3	10.8	7.4	88.7	40.5	12.2	312.2	267.6	245.0

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	62.6
Denied Del/Veh (s)	84.8
Total Delay (hr)	50.8
Total Del/Veh (s)	70.7
Stop Delay (hr)	43.7
Stop Del/Veh (s)	60.8

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.3	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.6	0.5	0.5	3.5	0.6	0.6	4.5	1.7	1.6
Total Delay (hr)	0.8	13.4	2.0	2.5	7.8	1.4	1.4	0.5	1.5	3.5	1.1	0.6
Total Del/Veh (s)	93.6	53.6	50.3	91.7	33.4	27.4	47.5	48.7	24.7	58.4	56.3	35.4
Stop Delay (hr)	0.7	9.4	1.5	2.3	5.3	1.0	1.3	0.5	1.3	3.2	1.0	0.6
Stop Del/Veh (s)	81.7	37.9	37.5	83.7	22.6	20.0	43.2	42.9	21.5	53.9	51.3	32.6

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.7
Denied Del/Veh (s)	0.8
Total Delay (hr)	36.5
Total Del/Veh (s)	45.2
Stop Delay (hr)	28.0
Stop Del/Veh (s)	34.7

Total Network Performance

Denied Delay (hr)	235.2
Denied Del/Veh (s)	75.3
Total Delay (hr)	712.7
Total Del/Veh (s)	231.1
Stop Delay (hr)	612.9
Stop Del/Veh (s)	198.8

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (ft)	160	175	921	871	222	827	202	232	328	352	355	202
Average Queue (ft)	87	155	538	338	145	145	78	82	158	178	186	16
95th Queue (ft)	157	218	1071	946	232	638	155	168	273	288	297	88
Link Distance (ft)			1005	1005		1420			432	432	432	
Upstream Blk Time (%)			11	2		2			0	0	0	
Queuing Penalty (veh)			0	0		0			0	0	0	
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)	1	3	48		11		0	0	1		2	0
Queuing Penalty (veh)	3	10	135		48		1	0	2		0	0

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (ft)	125	968	948	837	92
Average Queue (ft)	115	497	418	250	12
95th Queue (ft)	159	1001	958	690	62
Link Distance (ft)		1017	1017	1017	
Upstream Blk Time (%)		12	3	0	
Queuing Penalty (veh)		0	0	0	
Storage Bay Dist (ft)	100				200
Storage Blk Time (%)	50	27		4	0
Queuing Penalty (veh)	158	63		2	0

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	LT	R	L	L	T	R	L	L	T	T	T
Maximum Queue (ft)	451	543	81	148	175	677	175	549	589	560	390	346
Average Queue (ft)	121	225	8	74	131	393	40	384	384	305	133	122
95th Queue (ft)	348	459	132	141	222	697	133	603	612	620	311	254
Link Distance (ft)	874	874	874			695			632	632	632	632
Upstream Blk Time (%)						6			0	0		
Queuing Penalty (veh)						0			2	1		
Storage Bay Dist (ft)				150	150		150	550				
Storage Blk Time (%)				5	6	51	0	2	2			
Queuing Penalty (veh)				14	15	96	0	9	11			

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	NB	SB	SB	SB	SB	SB	B46	B46	B46	B46
Directions Served	TR	L	T	T	TR	R	T	T	T	T
Maximum Queue (ft)	222	204	425	401	401	380	456	426	439	423
Average Queue (ft)	55	24	380	343	324	108	198	165	106	64
95th Queue (ft)	138	127	441	424	429	363	477	448	362	296
Link Distance (ft)	632		321	321	321	321	432	432	432	432
Upstream Blk Time (%)			58	27	20	6	11	5	3	3
Queuing Penalty (veh)			222	100	75	24	40	17	11	10
Storage Bay Dist (ft)		200								
Storage Blk Time (%)			70							
Queuing Penalty (veh)			7							

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	968	447	199	574	544	491	310	189	598	702	710	685
Average Queue (ft)	356	211	107	170	112	117	27	71	141	364	272	185
95th Queue (ft)	957	527	223	493	376	335	185	160	463	739	676	553
Link Distance (ft)	1203			570	570	570	570			632	632	632
Upstream Blk Time (%)	4			2	0	0	0			15	8	2
Queuing Penalty (veh)	0			13	3	0	0			60	33	10
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)	18	15	8	6					0	17		
Queuing Penalty (veh)	34	29	45	36					0	42		

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	486
Average Queue (ft)	66
95th Queue (ft)	274
Link Distance (ft)	632
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	270	280	148	120	125	1355	1344	8	227	682	662	677
Average Queue (ft)	158	176	26	48	99	1221	1189	1	24	406	402	418
95th Queue (ft)	245	264	120	103	171	1582	1601	6	123	647	649	645
Link Distance (ft)			1363	1363		1321	1321			837	837	837
Upstream Blk Time (%)						66	41				0	0
Queuing Penalty (veh)						0	0				0	0
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)	0	0			31	67			0	35		
Queuing Penalty (veh)	0	0			126	54			0	3		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	583	337	350	651	596	582	410
Average Queue (ft)	127	282	334	552	298	215	49
95th Queue (ft)	432	429	408	790	628	490	251
Link Distance (ft)	837			570	570	570	570
Upstream Blk Time (%)				43	3	1	1
Queuing Penalty (veh)				189	13	4	3
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		6	29	32			
Queuing Penalty (veh)		21	99	213			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	337	350	1788	1783	187	200	332	287	145	261	342	326
Average Queue (ft)	274	345	1173	1051	175	190	232	96	55	95	197	194
95th Queue (ft)	391	381	2060	2016	208	223	412	199	114	214	318	311
Link Distance (ft)			1751	1751			310	310	310		270	270
Upstream Blk Time (%)			23	7			13	0		0	3	2
Queuing Penalty (veh)			0	0			47	0		0	12	8
Storage Bay Dist (ft)	325	325			175	175				270		
Storage Blk Time (%)	3	21	45		10	43	0			0	3	
Queuing Penalty (veh)	11	69	248		19	79	1			0	3	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B80	B25	B25	B25	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	T	T	L	L	T
Maximum Queue (ft)	323	370	68	299	320	352	360	357	369	237	250	866
Average Queue (ft)	223	340	51	84	160	299	100	182	314	219	234	606
95th Queue (ft)	332	382	59	267	355	422	327	409	484	276	294	1104
Link Distance (ft)	270	270		245	245	245	342	342	342			837
Upstream Blk Time (%)	2	85		1	8	81	0	2	45			34
Queuing Penalty (veh)	9	391		8	47	495	2	10	278			130
Storage Bay Dist (ft)			25							225	225	
Storage Blk Time (%)		8	90							49	73	5
Queuing Penalty (veh)		38	285							107	158	13

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	859	848	112
Average Queue (ft)	324	259	19
95th Queue (ft)	869	746	70
Link Distance (ft)	837	837	
Upstream Blk Time (%)	3	0	
Queuing Penalty (veh)	11	1	
Storage Bay Dist (ft)			250
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 6: Latrobe Rd & Driveway

Movement	NB	NB	NB
Directions Served	T	T	TR
Maximum Queue (ft)	471	491	506
Average Queue (ft)	119	282	395
95th Queue (ft)	387	591	693
Link Distance (ft)	477	477	477
Upstream Blk Time (%)	0	0	33
Queuing Penalty (veh)	0	2	181
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	125	710	65	123	711	755	776	66	170	192	216
Average Queue (ft)	97	385	22	22	258	391	449	14	63	82	105
95th Queue (ft)	163	808	54	78	651	871	913	47	137	159	182
Link Distance (ft)		676	697		752	752	752		477	477	477
Upstream Blk Time (%)		25			1	10	29				
Queuing Penalty (veh)		0			0	0	0				
Storage Bay Dist (ft)	100			200				195			
Storage Blk Time (%)	4	57			3				0		
Queuing Penalty (veh)	10	105			1				0		

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	104	360	381	135	144	421	382	158	70	75	644
Average Queue (ft)	103	334	322	20	51	164	156	61	17	72	612
95th Queue (ft)	107	358	396	89	115	345	321	128	48	86	671
Link Distance (ft)		310	310			1477	1477	537	537		601
Upstream Blk Time (%)		34	17								90
Queuing Penalty (veh)		239	121								0
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	75	11	33	0	1	11				80	24
Queuing Penalty (veh)	410	32	10	0	3	5				200	42

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	164	563	559	145	473	459	125	391	124	327
Average Queue (ft)	42	344	351	102	271	258	77	143	114	178
95th Queue (ft)	115	510	511	165	412	402	139	305	143	332
Link Distance (ft)		1477	1477		738	738		553		304
Upstream Blk Time (%)										4
Queuing Penalty (veh)										0
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)	0	42		12	31		9	16	39	10
Queuing Penalty (veh)	1	17		53	27		23	18	51	21

Network Summary

Network wide Queuing Penalty: 6155

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	350	63	45	946	686	170
Future Volume (veh/h)	350	63	45	946	686	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	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	380	68	49	1028	746	185
Adj No. of Lanes	1	1	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	453	404	93	1748	1391	341
Arrive On Green	0.26	0.26	0.05	0.49	0.34	0.34
Sat Flow, veh/h	1774	1583	1774	3632	4244	1000
Grp Volume(v), veh/h	380	68	49	1028	619	312
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1695	1686
Q Serve(g_s), s	8.1	1.3	1.1	8.3	5.9	6.0
Cycle Q Clear(g_c), s	8.1	1.3	1.1	8.3	5.9	6.0
Prop In Lane	1.00	1.00	1.00			0.59
Lane Grp Cap(c), veh/h	453	404	93	1748	1157	575
V/C Ratio(X)	0.84	0.17	0.53	0.59	0.54	0.54
Avail Cap(c_a), veh/h	756	675	222	2927	2039	1014
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	14.1	11.6	18.4	7.2	10.6	10.6
Incr Delay (d2), s/veh	1.7	0.1	1.7	0.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	1.3	0.6	4.0	2.7	2.8
LnGrp Delay(d),s/veh	15.8	11.6	20.1	7.3	10.7	10.9
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	448			1077	931	
Approach Delay, s/veh	15.2			7.9	10.8	
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		25.7		14.2	6.1	19.6		
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0		
Max Green Setting (Gmax), s		33.0		17.0	5.0	24.0		
Max Q Clear Time (g_c+I1), s		10.3		10.1	3.1	8.0		
Green Ext Time (p_c), s		6.3		0.2	0.0	5.6		

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	240	150	10	110	160	110	471	20	330	298	120
Future Volume (veh/h)	350	240	150	10	110	160	110	471	20	330	298	120
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	380	261	163	11	152	152	120	512	22	359	324	130
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	507	307	192	11	145	133	151	736	32	391	864	340
Arrive On Green	0.29	0.29	0.29	0.08	0.08	0.08	0.09	0.21	0.21	0.22	0.35	0.35
Sat Flow, veh/h	1774	1074	671	125	1731	1583	1774	3458	148	1774	2483	977
Grp Volume(v), veh/h	380	0	424	163	0	152	120	262	272	359	229	225
Grp Sat Flow(s),veh/h/ln	1774	0	1744	1856	0	1583	1774	1770	1837	1774	1770	1690
Q Serve(g_s), s	18.6	0.0	21.9	8.0	0.0	8.0	6.3	13.0	13.1	18.9	9.3	9.5
Cycle Q Clear(g_c), s	18.6	0.0	21.9	8.0	0.0	8.0	6.3	13.0	13.1	18.9	9.3	9.5
Prop In Lane	1.00		0.38	0.07		1.00	1.00		0.08	1.00		0.58
Lane Grp Cap(c), veh/h	507	0	499	156	0	133	151	377	391	391	616	588
V/C Ratio(X)	0.75	0.00	0.85	1.05	0.00	1.14	0.79	0.69	0.70	0.92	0.37	0.38
Avail Cap(c_a), veh/h	688	0	677	156	0	133	279	542	562	409	672	642
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	0.0	32.1	43.7	0.0	43.7	42.8	34.7	34.7	36.3	23.3	23.4
Incr Delay (d2), s/veh	3.1	0.0	7.6	85.1	0.0	122.2	9.1	2.3	2.2	24.9	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	0.0	11.5	7.7	0.0	8.0	3.5	6.6	6.9	12.0	4.6	4.5
LnGrp Delay(d),s/veh	34.0	0.0	39.8	128.9	0.0	165.9	51.9	37.0	36.9	61.3	23.7	23.8
LnGrp LOS	C		D	F		F	D	D	D	E	C	C
Approach Vol, veh/h		804			315			654			813	
Approach Delay, s/veh		37.1			146.7			39.7			40.3	
Approach LOS		D			F			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	25.0	25.6		13.0	12.1	38.5		31.8
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	22.0	29.2		8.0	15.0	36.2		37.0
Max Q Clear Time (g_c+I1), s	20.9	15.1		10.0	8.3	11.5		23.9
Green Ext Time (p_c), s	0.2	5.2		0.0	0.1	6.6		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	52.1
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	943	50	70	725	120	30	0	50	70	0	40
Future Volume (veh/h)	70	943	50	70	725	120	30	0	50	70	0	40
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	76	1025	54	76	788	130	33	0	54	76	0	43
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	1689	89	95	1748	782	43	0	70	117	0	105
Arrive On Green	0.05	0.49	0.49	0.05	0.49	0.49	0.07	0.00	0.07	0.07	0.00	0.07
Sat Flow, veh/h	1774	3420	180	1774	3539	1583	626	0	1025	1774	0	1583
Grp Volume(v), veh/h	76	530	549	76	788	130	87	0	0	76	0	43
Grp Sat Flow(s),veh/h/ln	1774	1770	1831	1774	1770	1583	1651	0	0	1774	0	1583
Q Serve(g_s), s	2.2	11.0	11.0	2.2	7.4	2.3	2.6	0.0	0.0	2.1	0.0	1.3
Cycle Q Clear(g_c), s	2.2	11.0	11.0	2.2	7.4	2.3	2.6	0.0	0.0	2.1	0.0	1.3
Prop In Lane	1.00		0.10	1.00		1.00	0.38		0.62	1.00		1.00
Lane Grp Cap(c), veh/h	96	874	904	95	1748	782	113	0	0	117	0	105
V/C Ratio(X)	0.79	0.61	0.61	0.80	0.45	0.17	0.77	0.00	0.00	0.65	0.00	0.41
Avail Cap(c_a), veh/h	223	1020	1055	163	1922	860	971	0	0	163	0	146
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.8	9.3	9.3	23.9	8.4	7.1	23.4	0.0	0.0	23.2	0.0	22.9
Incr Delay (d2), s/veh	5.5	0.9	0.8	5.6	0.2	0.1	4.1	0.0	0.0	2.2	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	1.2	5.5	5.7	1.2	3.7	1.0	1.3	0.0	0.0	1.1	0.0	0.6
LnGrp Delay(d),s/veh	29.4	10.2	10.2	29.4	8.6	7.2	27.5	0.0	0.0	25.5	0.0	23.8
LnGrp LOS	C	B	B	C	A	A	C			C		C
Approach Vol, veh/h		1155			994			87			119	
Approach Delay, s/veh		11.4			10.0			27.5			24.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	30.9		7.0	6.2	30.9		6.9
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	6.4	27.7		30.0	4.7	29.4		4.7
Max Q Clear Time (g_c+I1), s	4.2	9.4		4.6	4.2	13.0		4.1
Green Ext Time (p_c), s	0.0	13.3		0.3	0.0	12.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	890	143	160	540	0	325	20	440	0	30	50
Future Volume (veh/h)	30	890	143	160	540	0	325	20	440	0	30	50
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	967	155	174	587	0	353	22	478	0	33	54
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	1234	198	202	1782	0	380	24	512	2	53	86
Arrive On Green	0.02	0.40	0.40	0.11	0.50	0.00	0.21	0.34	0.34	0.00	0.08	0.08
Sat Flow, veh/h	1774	3056	490	1774	3632	0	1774	70	1524	1774	637	1042
Grp Volume(v), veh/h	33	560	562	174	587	0	353	0	500	0	0	87
Grp Sat Flow(s),veh/h/ln	1774	1770	1776	1774	1770	0	1774	0	1594	1774	0	1679
Q Serve(g_s), s	2.1	30.6	30.7	10.7	11.0	0.0	21.7	0.0	33.7	0.0	0.0	5.6
Cycle Q Clear(g_c), s	2.1	30.6	30.7	10.7	11.0	0.0	21.7	0.0	33.7	0.0	0.0	5.6
Prop In Lane	1.00		0.28	1.00		0.00	1.00		0.96	1.00		0.62
Lane Grp Cap(c), veh/h	41	714	717	202	1782	0	380	0	536	2	0	139
V/C Ratio(X)	0.80	0.78	0.78	0.86	0.33	0.00	0.93	0.00	0.93	0.00	0.00	0.63
Avail Cap(c_a), veh/h	110	714	717	233	1782	0	432	0	816	48	0	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	53.9	28.9	28.9	48.3	16.4	0.0	42.8	0.0	35.6	0.0	0.0	49.2
Incr Delay (d2), s/veh	12.1	8.4	8.4	21.7	0.5	0.0	23.8	0.0	10.1	0.0	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	1.1	16.6	16.7	6.4	5.4	0.0	13.1	0.0	16.2	0.0	0.0	2.7
LnGrp Delay(d),s/veh	66.0	37.2	37.3	70.0	16.9	0.0	66.6	0.0	45.7	0.0	0.0	51.0
LnGrp LOS	E	D	D	E	B		E		D			D
Approach Vol, veh/h		1155			761			853			87	
Approach Delay, s/veh		38.1			29.0			54.3			51.0	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.2	50.8	28.1	13.8	7.2	61.9	0.0	41.9
Change Period (Y+Rc), s	5.6	6.0	4.4	4.6	4.6	6.0	4.6	4.6
Max Green Setting (Gmax), s	14.6	44.8	27.0	33.0	6.9	53.5	3.0	56.8
Max Q Clear Time (g_c+I1), s	12.7	32.7	23.7	7.6	4.1	13.0	0.0	35.7
Green Ext Time (p_c), s	0.0	9.2	0.1	1.6	0.0	21.2	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	40.9
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	1660	10	0	1037
Future Vol, veh/h	0	10	1660	10	0	1037
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	1804	11	0	1127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	908	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	278	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	278	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	278	-
HCM Lane V/C Ratio	-	-	0.039	-
HCM Control Delay (s)	-	-	18.5	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	597	10	420	0	1250	40	0	547	490
Future Volume (veh/h)	0	0	0	597	10	420	0	1250	40	0	547	490
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	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				657	0	457	0	1359	0	0	595	533
Adj No. of Lanes				2	0	1	0	2	1	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				1186	0	529	0	1789	801	0	1789	801
Arrive On Green				0.33	0.00	0.33	0.00	0.67	0.00	0.00	0.51	0.51
Sat Flow, veh/h				3548	0	1583	0	3632	1583	0	3632	1583
Grp Volume(v), veh/h				657	0	457	0	1359	0	0	595	533
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1770	1583	0	1770	1583
Q Serve(g_s), s				7.6	0.0	13.5	0.0	12.9	0.0	0.0	5.0	12.5
Cycle Q Clear(g_c), s				7.6	0.0	13.5	0.0	12.9	0.0	0.0	5.0	12.5
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1186	0	529	0	1789	801	0	1789	801
V/C Ratio(X)				0.55	0.00	0.86	0.00	0.76	0.00	0.00	0.33	0.67
Avail Cap(c_a), veh/h				1277	0	570	0	1789	801	0	1789	801
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.84	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				13.6	0.0	15.6	0.0	6.2	0.0	0.0	7.3	9.2
Incr Delay (d2), s/veh				0.4	0.0	12.3	0.0	2.6	0.0	0.0	0.5	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.7	0.0	7.7	0.0	6.6	0.0	0.0	2.5	6.3
LnGrp Delay(d),s/veh				14.0	0.0	27.9	0.0	8.8	0.0	0.0	7.8	13.6
LnGrp LOS				B		C		A			A	B
Approach Vol, veh/h					1114			1359			1128	
Approach Delay, s/veh					19.7			8.8			10.5	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		29.3				29.3		20.7
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		24.0				24.0		18.0
Max Q Clear Time (g_c+I1), s		14.9				14.5		15.5
Green Ext Time (p_c), s		8.0				8.2		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	630	0	40	0	0	0	19	660	670	0	944	200
Future Volume (veh/h)	630	0	40	0	0	0	19	660	670	0	944	200
Number	7	4	14				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	0	1863				1900	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	685	0	43				21	717	0	0	1026	0
Adj No. of Lanes	2	0	1				0	3	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				2	2	2	0	2	2
Cap, veh/h	825	0	379				109	2813	935	0	3002	935
Arrive On Green	0.24	0.00	0.24				0.59	0.59	0.00	0.00	0.59	0.00
Sat Flow, veh/h	3442	0	1583				54	4764	1583	0	5253	1583
Grp Volume(v), veh/h	685	0	43				269	469	0	0	1026	0
Grp Sat Flow(s),veh/h/ln	1721	0	1583				1733	1543	1583	0	1695	1583
Q Serve(g_s), s	9.4	0.0	1.1				0.0	3.7	0.0	0.0	5.2	0.0
Cycle Q Clear(g_c), s	9.4	0.0	1.1				3.5	3.7	0.0	0.0	5.2	0.0
Prop In Lane	1.00		1.00				0.08		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	825	0	379				1101	1821	935	0	3002	935
V/C Ratio(X)	0.83	0.00	0.11				0.24	0.26	0.00	0.00	0.34	0.00
Avail Cap(c_a), veh/h	895	0	412				1101	1821	935	0	3002	935
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	0.91	0.00
Uniform Delay (d), s/veh	18.0	0.0	14.9				4.9	4.9	0.0	0.0	5.3	0.0
Incr Delay (d2), s/veh	6.3	0.0	0.1				0.5	0.3	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	5.2	0.0	0.5				1.9	1.6	0.0	0.0	2.4	0.0
LnGrp Delay(d),s/veh	24.3	0.0	15.0				5.4	5.3	0.0	0.0	5.3	0.0
LnGrp LOS	C		B				A	A			A	
Approach Vol, veh/h		728						738			1026	
Approach Delay, s/veh		23.8						5.3			5.3	
Approach LOS		C						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		34.0		16.0		34.0		
Change Period (Y+Rc), s		4.5		4.0		4.5		
Max Green Setting (Gmax), s		28.5		13.0		28.5		
Max Q Clear Time (g_c+I1), s		5.7		11.4		7.2		
Green Ext Time (p_c), s		13.5		0.5		12.9		

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_AM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	Latrobe Road from White Rock to Golden Foothills
Units:	U.S. Customary

Direction 1: NB

LOS and Performance Measures

Flow rate, v_p	1603	pc/h/ln
Capacity, C	6288	pc/h/ln
Speed, S	54.8	mi/h
Density, D	9.7	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1445	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	55.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	54.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	54.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	54.8	mi/h
Capacity, c	2096	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	2096	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1445	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	534	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	534	pc/h/ln
Free-Flow Speed, FFS	55.0	mi/h
Capacity, c	2096	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	54.8	mi/h
Density, D	9.7	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	1445	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	524	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.84	
Bicycle LOS	C	

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HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_AM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	Latrobe Road from White Rock to Golden Foothills
Units:	U.S. Customary

Direction 2: SB

LOS and Performance Measures

Flow rate, v_p	2193	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	44.8	mi/h
Density, D	16.3	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	0.3	access points/mi
Demand Volume, V	1977	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	44.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	44.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	44.8	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1977	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	731	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	731	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	44.8	mi/h
Density, D	16.3	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1977	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	716	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	3.00	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 10:57:21

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_AM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	624	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.2	mi/h
Density, D	4.8	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	563	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	563	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	208	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	208	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	4.8	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	563	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	204	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.36	
Bicycle LOS	B	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:03:58

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_AM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1558	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.4	mi/h
Density, D	12.0	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	1405	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1405	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	519	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	519	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	12.0	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1405	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	509	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.83	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:03:21

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_AM_WR2.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	White Rock Road from Post to Valley View
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	508	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.2	mi/h
Density, D	3.9	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	458	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	458	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	169	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	169	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	3.9	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	458	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	166	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.26	
Bicycle LOS	B	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 16:46:18

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_AM_WR2.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	White Rock Road from Post to Valley View
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1614	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.4	mi/h
Density, D	12.4	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	1455	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1455	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	538	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	538	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	12.4	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1455	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	527	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.85	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 16:46:51

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_PM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	Latrobe Road from White Rock to Golden Foothills
Units:	U.S. Customary

Direction 1: NB

LOS and Performance Measures

Flow rate, v_p	2036	pc/h/ln
Capacity, C	6288	pc/h/ln
Speed, S	54.8	mi/h
Density, D	12.4	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1836	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	55.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	54.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	54.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	54.8	mi/h
Capacity, c	2096	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	2096	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1836	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	679	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	679	pc/h/ln
Free-Flow Speed, FFS	55.0	mi/h
Capacity, c	2096	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	54.8	mi/h
Density, D	12.4	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1836	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	665	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.96	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:11:03

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_PM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	Latrobe Road from White Rock to Golden Foothills
Units:	U.S. Customary

Direction 2: SB

LOS and Performance Measures

Flow rate, v_p	1049	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	44.8	mi/h
Density, D	7.8	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	0.3	access points/mi
Demand Volume, V	946	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	44.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	44.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	44.8	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	946	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	350	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	350	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	44.8	mi/h
Density, D	7.8	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	946	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	343	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.63	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:10:37

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_PM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	1563	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.2	mi/h
Density, D	12.1	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1409	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1409	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	521	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	521	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	12.1	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1409	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	511	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.83	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:15:00

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_PM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1236	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.4	mi/h
Density, D	9.5	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	1114	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1114	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	412	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	412	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	9.5	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	1114	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	404	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.71	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:15:26

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_PM_WR2.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	White Rock Road from Post to Valley View
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	1424	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.2	mi/h
Density, D	11.0	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1284	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1284	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	475	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	475	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	11.0	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	1284	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	465	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.78	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 16:48:30

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	Cumulative_PM_WR2.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	White Rock Road from Post to Valley View
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1125	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.4	mi/h
Density, D	8.6	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	1014	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1014	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	375	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	375	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	8.6	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	1014	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	367	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.66	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 16:49:10

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Segment Inputs					Cumulative (2035) Conditions												
					Flow Inputs		AM LOS Performance Measures						PM LOS Performance Measures				
		Length	Number of Lanes	Interchange Density	AM Peak	PM Peak	V_p	FFS		S	D	LOS	V_p	FFS		S	D	LOS
		(ft)	(N)	(I/mi)	(veh/h)	(veh/h)	(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)		(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)	
EB	West of Latrobe Rd SB Off Ramp	6690	3	0.33	3,091	3,793	1131.13	74.12	75	74.8097	15.12	B	1388.018	74.12	75	73.3333	18.9	C
EB	Latrobe Rd NB Off Ramp to Latrobe Rd On Ramp	1990	3	0.50	1,671	3,075	611.489	73.6	75	73.3291	8.339	A	1125.272	73.6	75	74.8263	15.038	B
EB	Silva Valley Pkwy SB/NB Off Ramp to Silva Valley Pkwy NB/SB On Ramp	2375	3	0.50	2,077	3,364	760.062	73.6	75	74.3627	10.221	A	1231.029	73.6	75	74.4091	16.544	B
EB	East of Silva Valley Pkwy NB/SB On Ramp	3400	3	0.50	2,487	4,234	910.098	73.6	75	74.9105	12.149	B	1549.399	73.6	75	71.6586	21.622	C
WB	Silva Valley Pkwy NB/SB Off Ramp to Silva Valley Pkwy SB/NB On Ramp	2350	3	0.50	2,976	2,571	1089.04	73.6	75	74.9122	14.538	B	940.837	73.6	75	74.9613	12.551	B
WB	El Dorado Hills Blvd Off Ramp to El Dorado Hills Blvd On Ramp	3565	3	0.50	3,720	2,853	1361.3	73.6	75	73.5549	18.507	C	1044.033	73.6	75	74.9785	13.924	B
Univeral	Weaving Segment	5500	2	0.33	4,294	3,598							1974.989	74.13	75	64.4768	30.631	D
PHF	0.92	3425	3	0.50	4,186	3,111							1138.446	73.6	75	74.7878	15.222	B
(P_T)	2%																	
f_{HV}	0.99009901																	

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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

		Cumulative (2035) Conditions																																	
		Segment Inputs			AM Flow Inputs			AM LOS Performance Measures													PM Flow Inputs			PM LOS Performance Measures												
		Number of Lanes	Number of Ramp Lanes	Length of Acceleration Lane (L_a)	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_f	v_R	v_R/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_f	v_R	v_R/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
		(N)		(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/h)	(pc/h)			(pc/h/ln)					(pc/mi/ln)		(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/hr)	(pc/h)			(pc/h/ln)					(pc/mi/ln)	
EB	Latrobe Rd On Ramp	3	1	110	2367	1671	696	2599	1834	764	52	0.5806	1065.1	7200	385	799	1065	0.3609	18.701	B	4034	3075	959	4429	3376	1053	96	0.5806	1959.9	7200	708	1470	1960	0.6151	27.8	C
	Silva Valley SB On Ramp	3	1	110	2277	2077	200	2500	2280	220	65	0.5806	1323.8	7200	478	993	1324	0.3472	16.723	B	3564	3364	200	3913	3693	220	106	0.5806	2144.1	7200	774	1608	2144	0.5434	23.121	C
	Silva Valley NB On Ramp	3	1	550	2487	2277	210	2730	2500	231	71	0.5929	1482.1	7200	509	1112	1482	0.3792	15.279	B	4234	3564	670	4648	3913	736	112	0.5929	2319.8	7200	796	1740	2320	0.6456	25.52	C
WB	El Dorado Hills Blvd On Ramp	3	1	795	4859	3720	1139	5334	4084	1250	117	0.5998	2449.4	7200	817	1837	2449	0.7409	28.774	D	4373	2853	1520	4801	3132	1669	89	0.5998	1878.5	7200	627	1409	1879	0.6668	27.391	C
	Silva Valley SB On Ramp	3	1	800	4186	3006	1180	4596	3300	1295	94	0.5999	1979.7	7200	660	1485	1980	0.6383	25.409	C	3111	2611	500	3415	2866	549	82	0.5999	1719.6	7200	573	1290	1720	0.4744	17.901	B
	Silva Valley NB On Ramp	3	1	110	3006	2976	30	3300	3267	33	93	0.5806	1896.8	7200	685	1423	1897	0.4583	19.822	B	2611	2571	40	2866	2823	44	81	0.5806	1638.7	7200	592	1229	1639	0.3981	17.889	B

Universal Inputs

Length	1500	(ft)
S_{FF}	70	(mi/h)
S_{FR}	35	(mi/h)
PHF	0.92	
(P_T)	2%	
F_{HV}	0.99009901	

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

	Segment Inputs				AM Flow Inputs			AM LOS Performance Measures										PM Flow Inputs			PM LOS Performance Measures									
								Cumulative (2035) Conditions																					
	Number of Lanes	Number of Ramp Lanes	L_{EQ}	Length of Deceleration Lane (L_D)	Downstream Volume	Upstream Volume	Ramp Volume	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
	(N)		(ft)	(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)			(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)	
EB																																		
	Latrobe SB Off Ramp	3	1	435	140	1891	3091	1200	241.522	3393.4	1317.4	0.436	2222.5	7200	585	1667	2223	0.4713	22.106	C	3415	3793	378	373.261	4164.1	414.98	0.436	2049.6	7200	1057	1537	2050	0.5783	20.618	C
	Latrobe NB Off Ramp	3	1	-	140	1671	1891	220	-	2076	241.52	0.697	1520.1	7200	556	1140	1520	0.2883	16.065	B	3075	3415	340	-	3749.1	373.26	0.6491	2564.5	7200	1185	1923	2565	0.5207	25.047	C
	Silva Valley SB Off Ramp	3	1	-	150	2077	2367	290	-	2598.6	318.37	0.6804	1869.8	7200	364	1402	1870	0.3609	18.982	B	3364	4034	670	-	4428.6	735.54	0.6154	3008.5	7200	1420	2256	3008	0.6151	28.775	D
WB																																		
	El Dorado Hills Blvd Off Ramp	3	1	-	190	3720	4186	466	-	4595.5	511.59	0.6216	3050.1	7200	1545	2288	3050	0.6383	28.773	D	2853	3111	258	-	3415.3	283.24	0.6616	2355.4	7200	1060	1767	2355	0.4744	22.798	C
	Silva Valley NB Off Ramp	3	1	-	150	2976	4294	1318	-	4714.1	1446.9	0.5756	3327.5	7200	1387	2496	3327	0.6547	31.518	D	2571	3598	1027	-	3950	1127.5	0.6094	2847.5	7200	1103	2136	2847	0.5486	27.39	C

Universal Inputs:

Leng	1500	(ft)
S_M	70	(mi/h)
S_{FF}	35	(mi/h)
PHF	0.92	
(P_T)	2%	
f_{HV}	0.99009901	

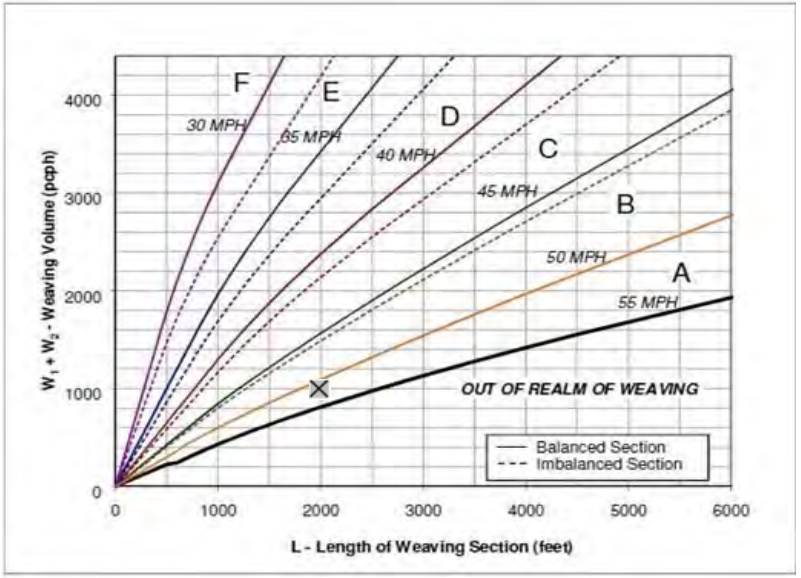
Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) Conditons (AM)

Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	2,367	Volume (vph)	696	Volume (vph)	290
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	2,414	Volume (pcph)	703	Volume (pcph)	293

W1 + W2	996
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (Sw, mph)	51.0
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	604
Level of Service (LOS)	A



Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS

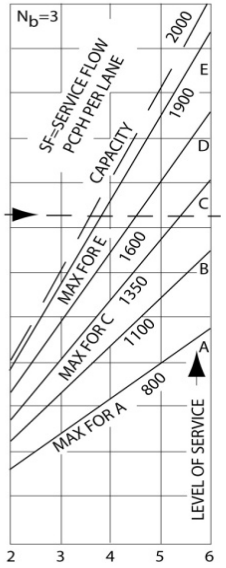


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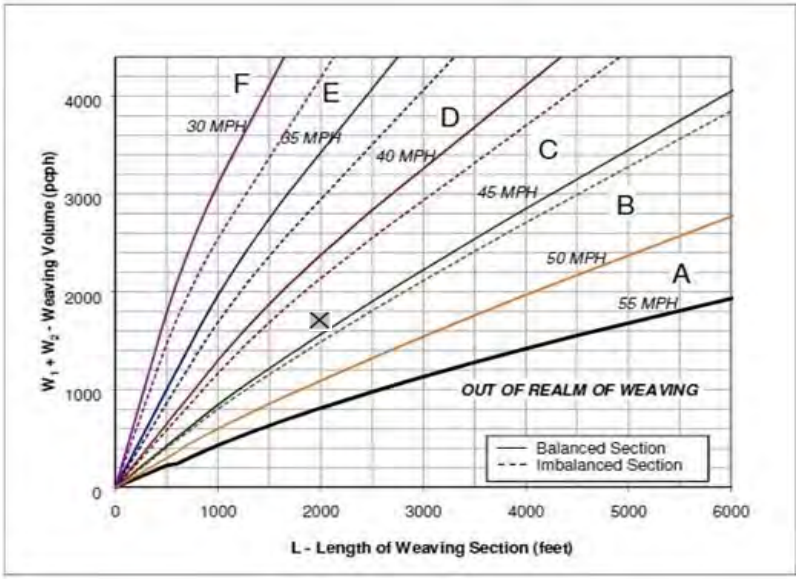
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) Conditons (PM)

Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,034	Volume (vph)	959	Volume (vph)	670
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,115	Volume (pcph)	969	Volume (pcph)	677

W1 + W2	1,645
In between	
Speed 1	40
Speed 2	45
Interpolated Weaving Speed (Sw, mph)	45.4
Weaving Intensity Factor (k)	1.60
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,130
Level of Service (LOS)	C



Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS

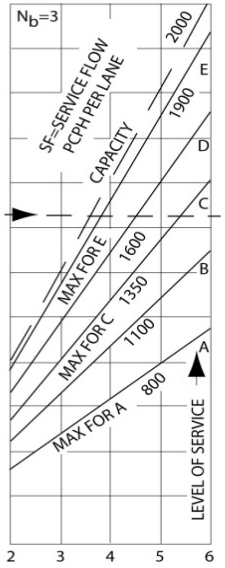


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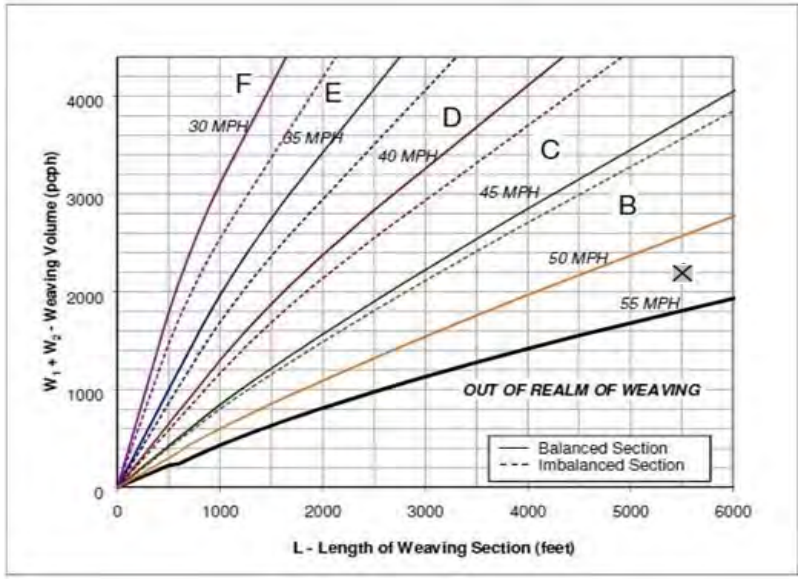
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

WB US-50, Bass Lake On-Ramp to Silva Valley Off-Ramp, Cumulative (2035) Conditons (AM)

Number of Entering Mainline Lanes	Nb	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5500

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,294	Volume (vph)	785	Volume (vph)	1,318
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,337	Volume (pcph)	793	Volume (pcph)	1,331

W1 + W2	2,124
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (Sw, mph)	53.0
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,446
Level of Service (LOS)	D



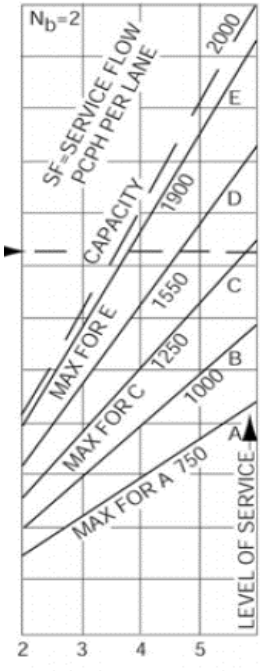


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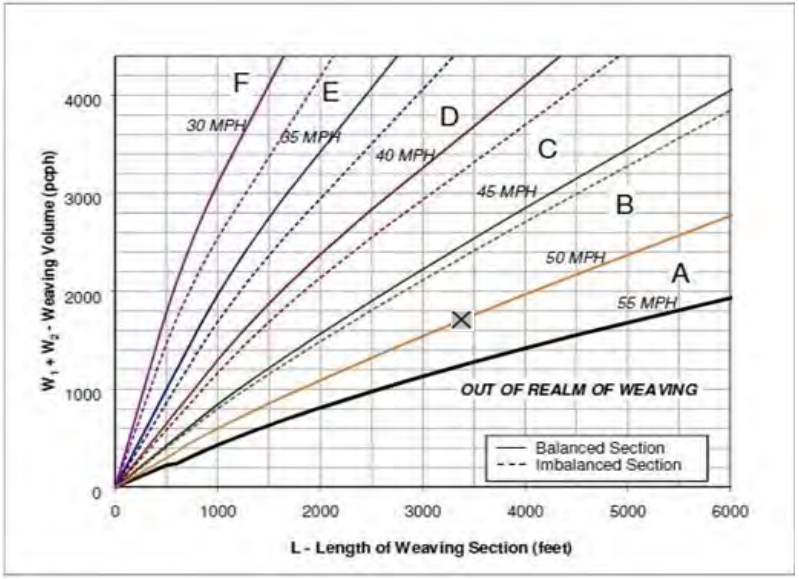
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

WB US-50, East of El Dorado Hills Blvd Off Ramp, Cumulative (2035) Conditons (AM)

Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,186	Volume (vph)	1,180	Volume (vph)	466
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,228	Volume (pcph)	1,192	Volume (pcph)	471

W1 + W2	1,662
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	50.0
Weaving Intensity Factor (k)	1.40
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,104
Level of Service (LOS)	C



Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS

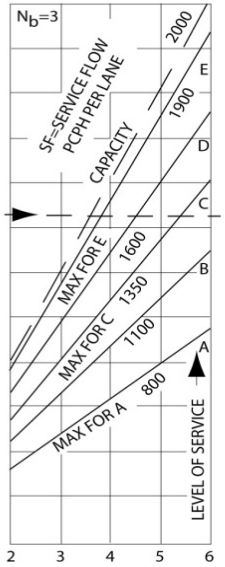


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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

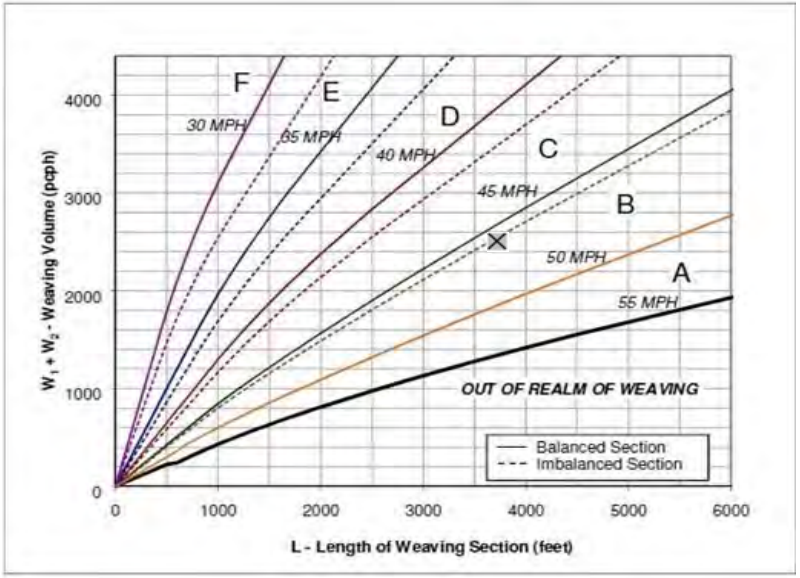
WB US-50, West of El Dorado Hills On Ramp, Cumulative (2035) Conditons (AM)

Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3775

Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,859	Volume (vph)	1,139	Volume (vph)	1,340
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,908	Volume (pcph)	1,150	Volume (pcph)	1,353

W1 + W2	2,504
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	46.0
Weaving Intensity Factor (k)	1.65
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,414
Level of Service (LOS)	D



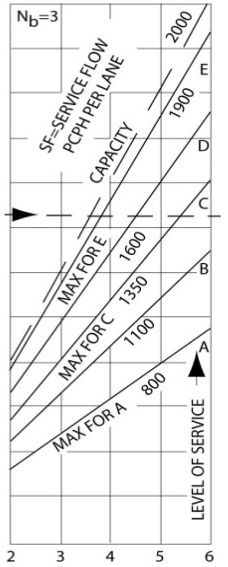


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EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

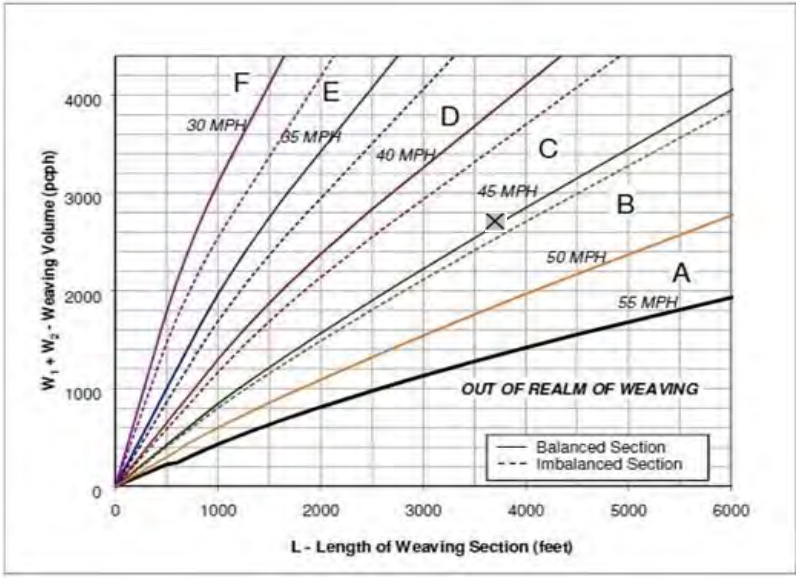
WB US-50, West of El Dorado Hills On Ramp, Cumulative (2035) Conditons (PM)

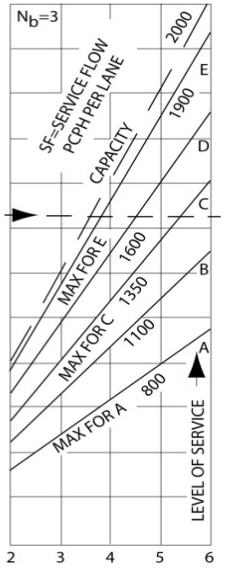
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3775

Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,373	Volume (vph)	1,520	Volume (vph)	1,100
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,417	Volume (pcph)	1,535	Volume (pcph)	1,111

W1 + W2	2,646
In between	
Speed 1	40
Speed 2	45
Interpolated Weaving Speed (Sw, mph)	45.0
Weaving Intensity Factor (k)	1.20
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,160
Level of Service (LOS)	C





Appendix G

Analysis Worksheets for
Cumulative (2035) plus Proposed Project Conditions

Montano de El Dorado — Cumulative (2035) plus Project Conditions
SimTraffic Simulation Summary — AM Peak

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	10160	10493	10579	10284	10370	10311	10538
Vehs Exited	9942	10380	10281	10094	10097	10060	10409
Starting Vehs	525	529	533	503	487	582	589
Ending Vehs	743	642	831	693	760	833	718
Travel Distance (mi)	8452	8824	8864	8655	8604	8548	8809
Travel Time (hr)	997.6	712.4	896.5	766.0	757.4	802.9	697.6
Total Delay (hr)	741.4	444.7	627.8	504.0	496.0	543.8	430.2
Total Stops	26410	24686	28475	25035	25808	25934	24844
Fuel Used (gal)	478.8	423.5	470.4	431.3	427.5	436.6	420.4

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	10382	10367	9896	10335
Vehs Exited	10151	10254	9606	10130
Starting Vehs	630	554	657	556
Ending Vehs	861	667	947	768
Travel Distance (mi)	8716	8709	8185	8637
Travel Time (hr)	787.3	808.9	1121.6	834.8
Total Delay (hr)	523.5	544.1	874.0	572.9
Total Stops	25795	24413	28210	25965
Fuel Used (gal)	439.1	445.3	500.0	447.3

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.
No data recorded this interval.

Montano de El Dorado — Cumulative (2035) plus Project Conditions

SimTraffic Simulation Summary — AM Peak

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2562	2604	2662	2595	2514	2527	2583
Vehs Exited	2216	2498	2462	2400	2231	2358	2597
Starting Vehs	525	529	533	503	487	582	589
Ending Vehs	871	635	733	698	770	751	575
Travel Distance (mi)	1896	2156	2205	2055	1959	1964	2197
Travel Time (hr)	179.1	149.4	186.2	150.5	161.9	157.1	148.2
Total Delay (hr)	121.8	84.0	119.3	88.3	102.5	97.3	81.6
Total Stops	5478	5521	6668	5168	5401	5040	5611
Fuel Used (gal)	96.1	97.6	107.9	94.8	94.0	92.4	99.3

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2604	2518	2556	2566
Vehs Exited	2651	2480	2430	2431
Starting Vehs	630	554	657	556
Ending Vehs	583	592	783	695
Travel Distance (mi)	2250	2126	2082	2089
Travel Time (hr)	154.5	161.0	193.1	164.1
Total Delay (hr)	86.1	96.2	130.0	100.7
Total Stops	5648	5271	6432	5628
Fuel Used (gal)	102.5	100.0	105.1	99.0

Montano de El Dorado — Cumulative (2035) plus Project Conditions

SimTraffic Simulation Summary — AM Peak

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2551	2741	2782	2720	2704	2848	2777
Vehs Exited	2575	2586	2579	2633	2667	2708	2627
Starting Vehs	871	635	733	698	770	751	575
Ending Vehs	847	790	936	785	807	891	725
Travel Distance (mi)	2240	2269	2195	2263	2302	2382	2240
Travel Time (hr)	243.3	188.3	231.3	193.2	203.9	214.8	162.9
Total Delay (hr)	175.7	119.9	164.8	124.9	133.8	142.8	94.6
Total Stops	7202	6926	7421	6803	7371	7663	5895
Fuel Used (gal)	122.7	109.4	117.7	110.8	114.7	120.3	103.2

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2844	2777	2574	2733
Vehs Exited	2625	2605	2234	2585
Starting Vehs	583	592	783	695
Ending Vehs	802	764	1123	844
Travel Distance (mi)	2304	2265	1926	2239
Travel Time (hr)	186.3	196.1	280.0	210.0
Total Delay (hr)	116.6	127.1	221.7	142.2
Total Stops	6361	6352	7179	6915
Fuel Used (gal)	110.1	113.1	120.8	114.3

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2599	2601	2551	2487	2598	2484	2681
Vehs Exited	2615	2653	2692	2513	2616	2658	2598
Starting Vehs	847	790	936	785	807	891	725
Ending Vehs	831	738	795	759	789	717	808
Travel Distance (mi)	2215	2191	2288	2157	2149	2173	2221
Travel Time (hr)	283.2	194.0	245.4	219.1	190.9	203.6	185.5
Total Delay (hr)	215.6	127.2	176.3	153.8	125.4	137.5	117.9
Total Stops	7089	6315	7256	6554	6385	6662	6623
Fuel Used (gal)	130.7	108.9	126.1	114.7	107.3	111.4	107.6

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2462	2576	2381	2543
Vehs Exited	2330	2520	2648	2583
Starting Vehs	802	764	1123	844
Ending Vehs	934	820	856	804
Travel Distance (mi)	1964	2126	2191	2168
Travel Time (hr)	210.5	235.3	326.3	229.4
Total Delay (hr)	151.1	171.0	260.3	163.6
Total Stops	6348	6687	7910	6783
Fuel Used (gal)	105.6	116.8	141.3	117.0

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2448	2547	2584	2482	2554	2452	2497
Vehs Exited	2536	2643	2548	2548	2583	2336	2587
Starting Vehs	831	738	795	759	789	717	808
Ending Vehs	743	642	831	693	760	833	718
Travel Distance (mi)	2100	2207	2175	2180	2193	2029	2150
Travel Time (hr)	292.0	180.6	233.6	203.1	200.7	227.5	201.1
Total Delay (hr)	228.3	113.6	167.5	137.1	134.3	166.2	136.1
Total Stops	6641	5924	7130	6510	6651	6569	6715
Fuel Used (gal)	129.2	107.6	118.6	111.0	111.4	112.5	110.4

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2472	2496	2385	2485
Vehs Exited	2545	2649	2294	2526
Starting Vehs	934	820	856	804
Ending Vehs	861	667	947	768
Travel Distance (mi)	2198	2193	1986	2141
Travel Time (hr)	236.1	216.5	322.1	231.3
Total Delay (hr)	169.7	149.8	262.0	166.5
Total Stops	7438	6103	6689	6627
Fuel Used (gal)	121.0	115.5	132.8	117.0

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.0
Denied Del/Veh (s)	2.0	0.2	0.2	1.4	0.6	1.5	0.0	0.0	0.0	1.4	0.4	1.2
Total Delay (hr)	0.8	1.4	0.7	1.5	1.5	0.4	3.4	4.0	0.0	4.5	14.5	0.4
Total Del/Veh (s)	38.0	39.0	14.2	33.9	26.5	8.9	73.5	18.8	6.1	79.9	32.5	11.3
Stop Delay (hr)	0.7	1.2	0.6	1.3	1.2	0.3	3.2	2.7	0.0	3.9	8.7	0.2
Stop Del/Veh (s)	33.8	32.4	12.4	29.8	21.5	6.9	69.3	12.8	4.3	68.3	19.5	5.8

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.5
Total Delay (hr)	33.1
Total Del/Veh (s)	31.5
Stop Delay (hr)	24.0
Stop Del/Veh (s)	22.9

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	0.7	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.0	2.1	0.2	1.3	3.0	0.5	16.2	2.7	0.2	0.1	12.6	0.4
Total Del/Veh (s)	36.3	55.3	3.6	38.6	52.5	41.4	101.5	12.5	5.1	52.1	29.8	3.9
Stop Delay (hr)	0.9	1.9	0.0	1.1	2.6	0.4	14.8	1.1	0.0	0.1	9.3	0.2
Stop Del/Veh (s)	33.6	50.3	0.0	33.8	46.4	38.2	92.9	5.2	1.1	48.6	21.8	2.1

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.0
Total Delay (hr)	40.4
Total Del/Veh (s)	34.2
Stop Delay (hr)	32.6
Stop Del/Veh (s)	27.6

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	31.1	0.0	0.0	0.0	0.0	0.0	31.2
Denied Del/Veh (s)	90.1	0.2	0.0	0.0	0.1	0.1	22.2
Total Delay (hr)	25.7	0.0	3.7	0.7	1.4	13.1	44.7
Total Del/Veh (s)	77.9	0.5	10.2	6.3	17.8	29.2	31.9
Stop Delay (hr)	19.1	0.0	1.2	0.0	0.9	8.1	29.3
Stop Del/Veh (s)	58.0	0.0	3.3	0.4	11.1	18.0	20.9

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	1.8	0.5	5.2	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.1	46.9	47.2	44.9	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.6	0.1	0.1	18.3	4.3	21.9	0.8	12.2	0.2	7.4	24.8	3.5
Total Del/Veh (s)	42.5	41.3	31.6	473.3	368.5	190.6	57.9	33.7	6.9	46.5	49.8	31.3
Stop Delay (hr)	0.6	0.1	0.1	18.4	4.3	21.0	0.6	7.3	0.1	6.0	18.9	2.6
Stop Del/Veh (s)	40.5	38.3	31.5	476.8	367.7	182.9	48.0	20.2	4.7	37.6	37.9	23.0

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	7.5
Denied Del/Veh (s)	5.6
Total Delay (hr)	94.2
Total Del/Veh (s)	69.4
Stop Delay (hr)	80.1
Stop Del/Veh (s)	59.0

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Denied Delay (hr)	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.5	1.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	18.8	3.8	1.5	10.0	6.4	0.5	0.5	13.3	14.4	2.3	5.3	40.5
Total Del/Veh (s)	215.6	89.6	49.6	50.9	39.5	12.4	253.0	257.3	52.8	27.6	151.0	121.7
Stop Delay (hr)	17.9	3.4	1.3	8.8	5.1	0.4	0.5	13.0	13.0	2.2	4.7	32.5
Stop Del/Veh (s)	204.8	79.6	44.9	44.4	31.5	10.2	248.7	251.4	47.9	25.6	134.6	97.5

5: Latrobe Road & White Rock Road Performance by movement

Movement	SBR	All
Denied Delay (hr)	0.0	0.3
Denied Del/Veh (s)	0.0	0.2
Total Delay (hr)	24.2	141.6
Total Del/Veh (s)	142.9	93.8
Stop Delay (hr)	21.4	124.2
Stop Del/Veh (s)	126.6	82.3

6: Latrobe Rd & Driveway Performance by movement

Movement	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	2.7	0.0	0.0	0.0	2.7
Denied Del/Veh (s)	0.1	6.5	4.7	0.0	0.0	2.8
Total Delay (hr)	0.2	5.2	0.0	0.1	0.9	6.4
Total Del/Veh (s)	38.0	12.7	4.1	19.5	1.7	6.6
Stop Delay (hr)	0.2	4.2	0.0	0.1	0.0	4.5
Stop Del/Veh (s)	37.7	10.3	1.8	17.2	0.0	4.7

7: Latrobe Rd & Golden Foothill Pkwy N/Monte Verde Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.7	0.3	0.3	0.1	0.1	0.1	1.7	0.2	0.1	0.1	0.1	0.1
Total Delay (hr)	3.1	0.2	0.2	0.2	0.2	0.1	0.8	2.5	0.0	0.2	7.5	1.7
Total Del/Veh (s)	54.3	53.4	40.5	68.8	68.9	25.4	68.9	8.6	8.4	81.0	16.5	17.1
Stop Delay (hr)	2.9	0.1	0.2	0.2	0.2	0.1	0.8	1.7	0.0	0.2	4.7	1.0
Stop Del/Veh (s)	49.9	47.8	37.4	66.2	64.9	24.2	65.5	5.9	5.9	76.2	10.3	9.9

7: Latrobe Rd & Golden Foothill Pkwy N/Monte Verde Dr Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.2
Total Delay (hr)	16.7
Total Del/Veh (s)	17.8
Stop Delay (hr)	12.0
Stop Del/Veh (s)	12.8

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.1	0.1	3.4	0.3	0.3
Total Delay (hr)	3.2	2.7	0.1	1.4	20.3	1.8	2.5	0.2	0.1	0.6	0.3	1.7
Total Del/Veh (s)	83.8	23.6	6.5	103.5	58.9	34.4	149.5	40.3	9.2	60.9	54.4	40.0
Stop Delay (hr)	3.0	2.1	0.0	1.1	12.6	1.0	2.4	0.1	0.1	0.6	0.2	1.6
Stop Del/Veh (s)	79.2	18.0	3.8	83.1	36.7	18.5	146.2	37.1	8.9	56.9	49.6	37.9

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	34.7
Total Del/Veh (s)	52.6
Stop Delay (hr)	24.9
Stop Del/Veh (s)	37.8

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	3.2	20.8	2.5	0.2	0.0	0.0	0.1	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	55.8	58.4	56.3	3.6	0.7	0.7	3.9	0.4	0.4
Total Delay (hr)	1.1	3.2	0.4	6.8	30.7	3.4	1.8	0.4	0.5	0.6	0.2	0.2
Total Del/Veh (s)	61.6	32.8	24.4	118.7	87.0	75.7	36.2	34.6	13.8	29.1	29.5	16.0
Stop Delay (hr)	1.0	2.2	0.3	5.7	22.5	2.5	1.6	0.3	0.4	0.6	0.1	0.2
Stop Del/Veh (s)	54.3	22.5	17.1	99.7	63.8	56.4	32.3	29.6	11.5	26.6	26.0	15.1

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	26.8
Denied Del/Veh (s)	36.9
Total Delay (hr)	49.3
Total Del/Veh (s)	67.9
Stop Delay (hr)	37.5
Stop Del/Veh (s)	51.6

Total Network Performance

Denied Delay (hr)	69.3
Denied Del/Veh (s)	23.8
Total Delay (hr)	503.7
Total Del/Veh (s)	166.4
Stop Delay (hr)	394.3
Stop Del/Veh (s)	130.3

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (ft)	55	82	157	124	175	173	124	232	266	237	229	33
Average Queue (ft)	13	42	78	60	88	89	43	128	104	101	106	5
95th Queue (ft)	43	71	132	105	152	152	90	241	266	198	190	24
Link Distance (ft)			1180	1180		1429			469	469	469	
Upstream Blk Time (%)									1			
Queuing Penalty (veh)									4			
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)			0		0	0	0	6	0		0	
Queuing Penalty (veh)			0		0	0	0	16	0		0	

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	B46	B46	SB	SB	SB	SB	SB
Directions Served	T	T	L	T	T	T	R
Maximum Queue (ft)	10	2	124	593	534	436	224
Average Queue (ft)	1	0	115	322	246	209	50
95th Queue (ft)	11	2	148	609	521	429	160
Link Distance (ft)	229	229		1017	1017	1017	
Upstream Blk Time (%)				0	0		
Queuing Penalty (veh)				0	0		
Storage Bay Dist (ft)			100				200
Storage Blk Time (%)			30	28		4	0
Queuing Penalty (veh)			161	55		6	0

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	L	L	T	R	L	L	T	T	T	TR
Maximum Queue (ft)	147	202	75	174	342	169	424	443	434	306	209	70
Average Queue (ft)	50	99	29	73	146	41	272	277	164	75	71	26
95th Queue (ft)	107	178	63	162	286	118	463	482	443	212	173	57
Link Distance (ft)	1070	1070			1644			626	626	626	626	626
Upstream Blk Time (%)								1	0			
Queuing Penalty (veh)								3	1			
Storage Bay Dist (ft)			150	150		150	550					
Storage Blk Time (%)				0	13	0	1	2				
Queuing Penalty (veh)				0	19	0	2	6				

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB	SB	SB	B46	B46	B46	B46
Directions Served	L	T	T	TR	R	T	T	T	T
Maximum Queue (ft)	161	300	269	293	222	162	128	119	60
Average Queue (ft)	11	205	154	175	60	29	18	13	8
95th Queue (ft)	80	327	272	286	179	170	133	103	89
Link Distance (ft)		229	229	229	229	469	469	469	469
Upstream Blk Time (%)	0	13	4	6	1	0	0	0	0
Queuing Penalty (veh)	0	65	19	28	5	0	0	0	0
Storage Bay Dist (ft)	200								
Storage Blk Time (%)		18							
Queuing Penalty (veh)		2							

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	1064	454	194	328	194	211	119	130	230	368	340	414
Average Queue (ft)	591	335	67	64	44	63	6	40	48	111	105	137
95th Queue (ft)	1376	558	159	189	134	149	59	91	158	344	352	394
Link Distance (ft)	1203			568	568	568	568			626	626	626
Upstream Blk Time (%)	18			0						0	0	1
Queuing Penalty (veh)	0			0						0	1	6
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)	7	20	1	1					0	0		
Queuing Penalty (veh)	46	127	3	3					0	0		

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	380
Average Queue (ft)	121
95th Queue (ft)	345
Link Distance (ft)	626
Upstream Blk Time (%)	0
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	51	72	37	43	125	1313	1286	55	229	534	525	526
Average Queue (ft)	16	26	8	11	121	897	798	15	40	207	199	231
95th Queue (ft)	45	60	28	35	143	1625	1595	44	149	431	433	452
Link Distance (ft)			2013	2013		1391	1391			837	837	837
Upstream Blk Time (%)						20	8					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					56	58				9		
Queuing Penalty (veh)					138	77				4		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	253	303	334	596	600	631	624
Average Queue (ft)	30	160	191	249	368	457	410
95th Queue (ft)	139	272	315	528	683	765	819
Link Distance (ft)	837			568	568	568	568
Upstream Blk Time (%)				2	3	22	22
Queuing Penalty (veh)				14	22	152	156
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		0	1	3			
Queuing Penalty (veh)		0	4	19			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	UL	T	T
Maximum Queue (ft)	319	328	596	465	187	200	332	331	153	271	356	346
Average Queue (ft)	219	243	273	187	164	182	279	186	55	254	321	165
95th Queue (ft)	378	392	848	626	245	262	433	338	114	303	422	316
Link Distance (ft)			1341	1341			311	311	311		271	271
Upstream Blk Time (%)			3	0			20	1		39	69	5
Queuing Penalty (veh)			0	0			97	7		0	259	20
Storage Bay Dist (ft)	325	325			175	175				270		
Storage Blk Time (%)	4	21	0		6	34	8			42	69	
Queuing Penalty (veh)	3	16	1		19	97	58			104	148	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B80	B25	B25	B25	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	T	T	L	L	T
Maximum Queue (ft)	341	342	64	336	316	319	484	477	397	208	250	852
Average Queue (ft)	170	170	43	243	146	123	273	178	102	54	157	558
95th Queue (ft)	315	351	66	450	354	339	623	512	397	129	321	973
Link Distance (ft)	271	271		242	242	242	492	492	492			837
Upstream Blk Time (%)	6	11		64	11	9	21	3	2			7
Queuing Penalty (veh)	23	40		321	53	47	105	17	10			46
Storage Bay Dist (ft)			25							225	225	
Storage Blk Time (%)		31	12							0	1	43
Queuing Penalty (veh)		92	30							0	3	54

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	857	858	275
Average Queue (ft)	657	773	269
95th Queue (ft)	1000	1035	315
Link Distance (ft)	837	837	
Upstream Blk Time (%)	7	16	
Queuing Penalty (veh)	44	107	
Storage Bay Dist (ft)			250
Storage Blk Time (%)		30	51
Queuing Penalty (veh)		196	202

Intersection: 6: Latrobe Rd & Driveway

Movement	WB	NB	NB	NB	SB	SB	SB	SB	B25	B25	B80	B80
Directions Served	R	T	T	TR	L	T	T	T	T	T	T	T
Maximum Queue (ft)	58	283	271	263	48	8	34	65	6	2	50	23
Average Queue (ft)	18	99	82	58	12	0	1	4	0	0	2	1
95th Queue (ft)	56	372	333	280	40	6	19	32	6	2	35	18
Link Distance (ft)	262	493	493	493		492	492	492	242	242	271	271
Upstream Blk Time (%)		2	0	1							0	
Queuing Penalty (veh)		7	2	3							0	
Storage Bay Dist (ft)					250							
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 7: Latrobe Rd & Golden Foothill Pkwy N/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	125	325	81	125	198	195	213	150	458	481	488
Average Queue (ft)	75	135	32	44	83	80	100	15	211	236	257
95th Queue (ft)	143	251	69	96	161	163	191	70	435	473	507
Link Distance (ft)		1299	1059		1680	1680	1680		493	493	493
Upstream Blk Time (%)									0	0	0
Queuing Penalty (veh)									0	1	3
Storage Bay Dist (ft)	100			200				195			
Storage Blk Time (%)	3	23			0				9		
Queuing Penalty (veh)	4	24			0				1		

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	104	306	275	135	145	956	708	191	70	74	262
Average Queue (ft)	87	144	123	28	55	499	347	79	20	36	110
95th Queue (ft)	130	293	249	97	139	927	664	169	49	80	211
Link Distance (ft)		311	311			1512	1512	619	619		554
Upstream Blk Time (%)		2	0								
Queuing Penalty (veh)		5	1								
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	38	9	8	0	0	49				12	43
Queuing Penalty (veh)	79	13	3	0	2	25				20	18

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	159	257	255	145	793	786	124	273	113	106
Average Queue (ft)	58	103	116	131	678	665	91	95	48	38
95th Queue (ft)	127	209	218	172	934	934	137	212	95	81
Link Distance (ft)		1512	1512		743	743		566		338
Upstream Blk Time (%)					42	23				
Queuing Penalty (veh)					0	0				
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)	0	6		23	46		12	5	2	1
Queuing Penalty (veh)	0	3		148	95		22	8	1	1

Network Summary

Network wide Queuing Penalty: 3875

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	115	93	117	921	1321	313
Future Volume (veh/h)	115	93	117	921	1321	313
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	125	101	127	1001	1436	340
Adj No. of Lanes	1	1	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	202	180	162	2381	2041	482
Arrive On Green	0.11	0.11	0.09	0.67	0.50	0.50
Sat Flow, veh/h	1774	1583	1774	3632	4279	970
Grp Volume(v), veh/h	125	101	127	1001	1183	593
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1695	1692
Q Serve(g_s), s	3.1	2.8	3.3	6.0	12.7	12.7
Cycle Q Clear(g_c), s	3.1	2.8	3.3	6.0	12.7	12.7
Prop In Lane	1.00	1.00	1.00			0.57
Lane Grp Cap(c), veh/h	202	180	162	2381	1683	840
V/C Ratio(X)	0.62	0.56	0.79	0.42	0.70	0.71
Avail Cap(c_a), veh/h	606	540	189	2567	1808	902
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	19.8	19.7	20.9	3.5	9.1	9.2
Incr Delay (d2), s/veh	3.1	2.7	14.0	0.2	0.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.6	2.2	3.0	6.0	6.2
LnGrp Delay(d),s/veh	22.9	22.4	34.9	3.7	10.0	11.0
LnGrp LOS	C	C	C	A	B	B
Approach Vol, veh/h	226			1128	1776	
Approach Delay, s/veh	22.7			7.2	10.4	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		37.5		9.3	8.3	29.3		
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0		
Max Green Setting (Gmax), s		34.0		16.0	5.0	25.0		
Max Q Clear Time (g_c+I1), s		8.0		5.1	5.3	14.7		
Green Ext Time (p_c), s		17.8		0.5	0.0	8.5		

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	100	110	10	250	381	180	583	10	251	779	403
Future Volume (veh/h)	84	100	110	10	250	381	180	583	10	251	779	403
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	91	109	120	11	370	348	196	634	11	273	847	438
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	128	141	11	355	312	182	1164	20	301	894	458
Arrive On Green	0.16	0.16	0.16	0.20	0.20	0.20	0.10	0.33	0.33	0.17	0.39	0.39
Sat Flow, veh/h	1774	812	893	54	1806	1583	1774	3560	62	1774	2266	1161
Grp Volume(v), veh/h	91	0	229	381	0	348	196	315	330	273	660	625
Grp Sat Flow(s),veh/h/ln	1774	0	1705	1860	0	1583	1774	1770	1852	1774	1770	1658
Q Serve(g_s), s	5.8	0.0	16.6	25.0	0.0	25.0	13.0	18.5	18.5	19.2	45.7	46.6
Cycle Q Clear(g_c), s	5.8	0.0	16.6	25.0	0.0	25.0	13.0	18.5	18.5	19.2	45.7	46.6
Prop In Lane	1.00		0.52	0.03		1.00	1.00		0.03	1.00		0.70
Lane Grp Cap(c), veh/h	281	0	270	366	0	312	182	579	606	301	698	654
V/C Ratio(X)	0.32	0.00	0.85	1.04	0.00	1.12	1.08	0.54	0.54	0.91	0.94	0.96
Avail Cap(c_a), veh/h	517	0	497	366	0	312	182	579	606	377	713	668
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	0.0	52.0	51.0	0.0	51.0	57.0	35.0	35.0	51.7	37.1	37.4
Incr Delay (d2), s/veh	0.7	0.0	7.3	58.1	0.0	86.3	89.6	1.1	1.0	21.6	21.1	24.1
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	2.9	0.0	8.4	18.7	0.0	18.4	10.9	9.2	9.6	11.2	26.4	25.7
LnGrp Delay(d),s/veh	48.1	0.0	59.3	109.1	0.0	137.3	146.7	36.1	36.0	73.3	58.2	61.5
LnGrp LOS	D		E	F		F	F	D	D	E	E	E
Approach Vol, veh/h		320			729			841			1558	
Approach Delay, s/veh		56.1			122.6			61.8			62.2	
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	25.6	46.8		30.0	17.0	55.4		24.6
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	27.0	37.2		25.0	13.0	51.2		37.0
Max Q Clear Time (g_c+I1), s	21.2	20.5		27.0	15.0	48.6		18.6
Green Ext Time (p_c), s	0.4	11.6		0.0	0.0	1.6		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	74.3
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	515	20	21	778	71	60	0	61	111	0	90
Future Volume (veh/h)	30	515	20	21	778	71	60	0	61	111	0	90
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	560	22	23	846	77	65	0	66	121	0	98
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	1481	58	39	1483	663	87	0	89	187	0	167
Arrive On Green	0.03	0.43	0.43	0.02	0.42	0.42	0.11	0.00	0.11	0.11	0.00	0.11
Sat Flow, veh/h	1774	3472	136	1774	3539	1583	830	0	843	1774	0	1583
Grp Volume(v), veh/h	33	285	297	23	846	77	131	0	0	121	0	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1839	1774	1770	1583	1673	0	0	1774	0	1583
Q Serve(g_s), s	0.9	5.2	5.2	0.6	8.7	1.4	3.6	0.0	0.0	3.1	0.0	2.8
Cycle Q Clear(g_c), s	0.9	5.2	5.2	0.6	8.7	1.4	3.6	0.0	0.0	3.1	0.0	2.8
Prop In Lane	1.00		0.07	1.00		1.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	53	755	784	39	1483	663	176	0	0	187	0	167
V/C Ratio(X)	0.63	0.38	0.38	0.59	0.57	0.12	0.74	0.00	0.00	0.65	0.00	0.59
Avail Cap(c_a), veh/h	149	968	1006	149	1936	866	1056	0	0	328	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	9.3	9.3	23.0	10.5	8.4	20.6	0.0	0.0	20.4	0.0	20.3
Incr Delay (d2), s/veh	4.5	0.4	0.3	5.1	0.4	0.1	2.3	0.0	0.0	1.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.6	2.7	0.3	4.3	0.6	1.8	0.0	0.0	1.6	0.0	1.3
LnGrp Delay(d),s/veh	27.2	9.7	9.7	28.1	10.9	8.5	23.0	0.0	0.0	21.8	0.0	21.5
LnGrp LOS	C	A	A	C	B	A	C			C		C
Approach Vol, veh/h		615			946			131			219	
Approach Delay, s/veh		10.6			11.2			23.0			21.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	25.6		8.5	4.5	26.0		8.5
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	4.0	26.0		30.0	4.0	26.0		8.8
Max Q Clear Time (g_c+I1), s	2.9	10.7		5.6	2.6	7.2		5.1
Green Ext Time (p_c), s	0.0	9.2		0.5	0.0	10.5		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	424	223	700	693	0	147	20	120	0	20	30
Future Volume (veh/h)	40	424	223	700	693	0	147	20	120	0	20	30
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	461	242	761	753	0	160	22	130	0	22	33
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	578	302	781	2388	0	133	39	229	2	36	53
Arrive On Green	0.03	0.26	0.26	0.44	0.67	0.00	0.07	0.17	0.17	0.00	0.05	0.05
Sat Flow, veh/h	1774	2251	1174	1774	3632	0	1774	234	1384	1774	674	1011
Grp Volume(v), veh/h	43	362	341	761	753	0	160	0	152	0	0	55
Grp Sat Flow(s),veh/h/ln	1774	1770	1656	1774	1770	0	1774	0	1618	1774	0	1684
Q Serve(g_s), s	2.8	22.5	22.7	49.5	10.3	0.0	8.8	0.0	10.2	0.0	0.0	3.8
Cycle Q Clear(g_c), s	2.8	22.5	22.7	49.5	10.3	0.0	8.8	0.0	10.2	0.0	0.0	3.8
Prop In Lane	1.00		0.71	1.00		0.00	1.00		0.86	1.00		0.60
Lane Grp Cap(c), veh/h	55	455	425	781	2388	0	133	0	267	2	0	89
V/C Ratio(X)	0.78	0.80	0.80	0.97	0.32	0.00	1.21	0.00	0.57	0.00	0.00	0.62
Avail Cap(c_a), veh/h	139	455	425	941	2388	0	133	0	524	53	0	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	56.6	40.8	40.9	32.3	7.9	0.0	54.4	0.0	45.3	0.0	0.0	54.6
Incr Delay (d2), s/veh	8.6	13.4	14.7	20.5	0.3	0.0	143.9	0.0	0.7	0.0	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	12.6	12.1	28.5	5.1	0.0	9.6	0.0	4.6	0.0	0.0	1.8
LnGrp Delay(d),s/veh	65.2	54.3	55.7	52.7	8.3	0.0	198.3	0.0	46.0	0.0	0.0	57.1
LnGrp LOS	E	D	E	D	A		F		D			E
Approach Vol, veh/h		746			1514			312			55	
Approach Delay, s/veh		55.5			30.6			124.1			57.1	
Approach LOS		E			C			F			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	57.4	36.2	13.2	10.8	8.3	85.4	0.0	24.0
Change Period (Y+Rc), s	5.6	6.0	4.4	4.6	4.6	6.0	4.6	4.6
Max Green Setting (Gmax), s	62.4	25.2	8.8	33.0	9.2	79.4	3.5	38.1
Max Q Clear Time (g_c+I1), s	51.5	24.7	10.8	5.8	4.8	12.3	0.0	12.2
Green Ext Time (p_c), s	0.3	0.4	0.0	0.5	0.0	19.7	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	49.4
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	870	10	0	1852
Future Vol, veh/h	0	10	870	10	0	1852
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	946	11	0	2013

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	478	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	534	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	534	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	534	-
HCM Lane V/C Ratio	-	-	0.02	-
HCM Control Delay (s)	-	-	11.9	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1053	10	260	0	620	30	0	682	1170
Future Volume (veh/h)	0	0	0	1053	10	260	0	620	30	0	682	1170
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	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				1153	0	283	0	674	0	0	741	1272
Adj No. of Lanes				2	0	1	0	2	1	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				1121	0	500	0	2166	969	0	2166	969
Arrive On Green				0.32	0.00	0.32	0.00	1.00	0.00	0.00	0.61	0.61
Sat Flow, veh/h				3548	0	1583	0	3632	1583	0	3632	1583
Grp Volume(v), veh/h				1153	0	283	0	674	0	0	741	1272
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1770	1583	0	1770	1583
Q Serve(g_s), s				39.5	0.0	18.6	0.0	0.0	0.0	0.0	12.8	76.5
Cycle Q Clear(g_c), s				39.5	0.0	18.6	0.0	0.0	0.0	0.0	12.8	76.5
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1121	0	500	0	2166	969	0	2166	969
V/C Ratio(X)				1.03	0.00	0.57	0.00	0.31	0.00	0.00	0.34	1.31
Avail Cap(c_a), veh/h				1121	0	500	0	2166	969	0	2166	969
HCM Platoon Ratio				1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.95	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				42.8	0.0	35.6	0.0	0.0	0.0	0.0	11.9	24.3
Incr Delay (d2), s/veh				34.4	0.0	1.5	0.0	0.4	0.0	0.0	0.4	148.1
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				24.7	0.0	8.3	0.0	0.1	0.0	0.0	6.4	73.0
LnGrp Delay(d),s/veh				77.1	0.0	37.1	0.0	0.4	0.0	0.0	12.3	172.4
LnGrp LOS				F		D		A			B	F
Approach Vol, veh/h					1436			674			2013	
Approach Delay, s/veh					69.2			0.4			113.5	
Approach LOS					E			A			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		81.0				81.0		44.0
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		76.5				76.5		39.5
Max Q Clear Time (g_c+I1), s		2.0				78.5		41.5
Green Ext Time (p_c), s		40.5				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.6
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	0	40	0	0	0	76	400	213	0	1534	200
Future Volume (veh/h)	250	0	40	0	0	0	76	400	213	0	1534	200
Number	7	4	14				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	0	1863				1900	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	272	0	43				83	435	0	0	1667	0
Adj No. of Lanes	2	0	1				0	3	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				2	2	2	0	2	2
Cap, veh/h	347	0	160				303	2552	1310	0	4206	1310
Arrive On Green	0.10	0.00	0.10				0.83	0.83	0.00	0.00	1.00	0.00
Sat Flow, veh/h	3442	0	1583				297	3085	1583	0	5253	1583
Grp Volume(v), veh/h	272	0	43				83	435	0	0	1667	0
Grp Sat Flow(s),veh/h/ln	1721	0	1583				297	1543	1583	0	1695	1583
Q Serve(g_s), s	9.6	0.0	3.1				8.4	3.5	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.6	0.0	3.1				8.4	3.5	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	347	0	160				303	2552	1310	0	4206	1310
V/C Ratio(X)	0.78	0.00	0.27				0.27	0.17	0.00	0.00	0.40	0.00
Avail Cap(c_a), veh/h	757	0	348				303	2552	1310	0	4206	1310
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	0.77	0.00
Uniform Delay (d), s/veh	54.9	0.0	51.9				2.6	2.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.9	0.0	0.9				2.2	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	1.4				0.9	1.6	0.0	0.0	0.1	0.0
LnGrp Delay(d),s/veh	58.8	0.0	52.8				4.8	2.3	0.0	0.0	0.2	0.0
LnGrp LOS	E		D				A	A			A	
Approach Vol, veh/h		315						518			1667	
Approach Delay, s/veh		58.0						2.7			0.2	
Approach LOS		E						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		107.9		17.1		107.9		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		88.5		27.5		88.5		
Max Q Clear Time (g_c+I1), s		10.4		11.6		2.0		
Green Ext Time (p_c), s		39.5		1.0		41.3		

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	20	1447	27	17	1950
Future Vol, veh/h	0	20	1447	27	17	1950
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	-	-	250	-
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	1573	29	18	2120

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	801	0	0	1602	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	5.34	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	0	281	-	-	198	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	281	-	-	198	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	281	198	-
HCM Lane V/C Ratio	-	-	0.077	0.093	-
HCM Control Delay (s)	-	-	18.9	25	-
HCM Lane LOS	-	-	C	D	-
HCM 95th %tile Q(veh)	-	-	0.2	0.3	-

Montano de El Dorado — Cumulative (2035) plus Project

SimTraffic Simulation Summary — PM Peak

Summary of All Intervals

Run Number	10	2	3	4	5	6	7
Start Time	4:50	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	11113	11253	11019	11236	11502	10688	11083
Vehs Exited	10481	10767	10668	10810	10947	10119	10670
Starting Vehs	611	646	708	715	632	716	747
Ending Vehs	1243	1132	1059	1141	1187	1285	1160
Travel Distance (mi)	7897	8074	7989	8126	8269	7654	7989
Travel Time (hr)	1115.0	1108.1	1169.9	1024.5	986.6	1369.5	1179.5
Total Delay (hr)	879.0	866.9	931.1	781.0	739.8	1140.2	940.4
Total Stops	29412	31118	29848	30844	32173	31419	31901
Fuel Used (gal)	502.5	507.5	517.9	488.1	485.4	551.4	519.3

Summary of All Intervals

Run Number	8	9	Avg
Start Time	4:50	4:50	4:50
End Time	6:00	6:00	6:00
Total Time (min)	70	70	70
Time Recorded (min)	60	60	60
# of Intervals	5	5	5
# of Recorded Intervals	4	4	4
Vehs Entered	11286	11319	11169
Vehs Exited	10678	10756	10655
Starting Vehs	614	621	667
Ending Vehs	1222	1184	1173
Travel Distance (mi)	7982	8077	8006
Travel Time (hr)	1013.3	1058.0	1113.8
Total Delay (hr)	774.0	816.2	874.3
Total Stops	30001	31268	30889
Fuel Used (gal)	481.9	495.2	505.5

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

No data recorded this interval.

Montano de El Dorado — Cumulative (2035) plus Project

SimTraffic Simulation Summary — PM Peak

Interval #1 Information

Start Time	5:00
End Time	5:15
Total Time (min)	15

Run Number	10	2	3	4	5	6	7
Vehs Entered	2919	2929	2887	2904	2931	2920	2935
Vehs Exited	2671	2680	2689	2713	2707	2703	2759
Starting Vehs	611	646	708	715	632	716	747
Ending Vehs	859	895	906	906	856	933	923
Travel Distance (mi)	2068	2082	2050	2072	2070	2039	2080
Travel Time (hr)	189.9	200.5	210.9	205.6	186.4	205.0	217.3
Total Delay (hr)	128.1	138.1	149.5	143.4	124.4	143.6	154.8
Total Stops	7011	7239	7097	7473	6851	7088	7530
Fuel Used (gal)	108.2	111.3	112.2	111.5	107.5	110.6	114.4

Interval #1 Information

Start Time	5:00
End Time	5:15
Total Time (min)	15

Run Number	8	9	Avg
Vehs Entered	2923	2930	2918
Vehs Exited	2761	2683	2707
Starting Vehs	614	621	667
Ending Vehs	776	868	881
Travel Distance (mi)	2090	2063	2068
Travel Time (hr)	170.3	188.3	197.1
Total Delay (hr)	107.5	126.6	135.1
Total Stops	6439	7023	7085
Fuel Used (gal)	104.8	107.5	109.8

Interval #2 Information

Start Time	5:15
End Time	5:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	10	2	3	4	5	6	7
Vehs Entered	2763	2985	2820	2770	2923	2669	2903
Vehs Exited	2706	2795	2715	2755	2818	2654	2738
Starting Vehs	859	895	906	906	856	933	923
Ending Vehs	916	1085	1011	921	961	948	1088
Travel Distance (mi)	2016	2113	2053	2026	2124	2005	2061
Travel Time (hr)	236.2	248.9	258.3	234.9	223.6	268.0	271.2
Total Delay (hr)	175.8	185.7	196.8	174.1	160.3	208.2	209.5
Total Stops	7019	7956	7586	7614	7729	7716	8310
Fuel Used (gal)	117.4	123.3	123.1	117.3	118.0	124.0	126.1

Interval #2 Information

Start Time	5:15
End Time	5:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	8	9	Avg
Vehs Entered	2897	2947	2853
Vehs Exited	2730	2826	2748
Starting Vehs	776	868	881
Ending Vehs	943	989	984
Travel Distance (mi)	2039	2087	2058
Travel Time (hr)	213.5	244.9	244.4
Total Delay (hr)	152.5	182.3	182.8
Total Stops	7513	7823	7697
Fuel Used (gal)	112.1	121.6	120.3

Montano de El Dorado — Cumulative (2035) plus Project

SimTraffic Simulation Summary — PM Peak

Interval #3 Information

Start Time	5:30
End Time	5:45
Total Time (min)	15

Run Number	10	2	3	4	5	6	7
Vehs Entered	2741	2714	2623	2878	2854	2677	2777
Vehs Exited	2620	2763	2646	2745	2736	2307	2762
Starting Vehs	916	1085	1011	921	961	948	1088
Ending Vehs	1037	1036	988	1054	1079	1318	1103
Travel Distance (mi)	1976	2008	1947	2066	2081	1787	2045
Travel Time (hr)	305.3	296.7	314.6	268.7	263.4	367.2	308.1
Total Delay (hr)	246.3	236.8	256.6	206.6	201.2	313.9	246.9
Total Stops	7723	8067	7650	8000	8468	7871	8366
Fuel Used (gal)	131.3	131.5	132.7	125.9	125.3	139.0	134.5

Interval #3 Information

Start Time	5:30
End Time	5:45
Total Time (min)	15

Run Number	8	9	Avg
Vehs Entered	2846	2828	2767
Vehs Exited	2659	2743	2666
Starting Vehs	943	989	984
Ending Vehs	1130	1074	1084
Travel Distance (mi)	1998	2073	1998
Travel Time (hr)	274.2	284.2	298.0
Total Delay (hr)	214.2	222.1	238.3
Total Stops	8028	8458	8068
Fuel Used (gal)	125.3	130.5	130.6

Interval #4 Information Recording

Start Time	5:45
End Time	6:00
Total Time (min)	15

Run Number	10	2	3	4	5	6	7
Vehs Entered	2690	2625	2689	2684	2794	2422	2468
Vehs Exited	2484	2529	2618	2597	2686	2455	2411
Starting Vehs	1037	1036	988	1054	1079	1318	1103
Ending Vehs	1243	1132	1059	1141	1187	1285	1160
Travel Distance (mi)	1837	1870	1939	1962	1994	1824	1803
Travel Time (hr)	383.7	362.1	386.1	315.3	313.4	529.3	382.8
Total Delay (hr)	328.8	306.3	328.2	257.0	253.8	474.5	329.1
Total Stops	7659	7856	7515	7757	9125	8744	7695
Fuel Used (gal)	145.6	141.5	149.9	133.3	134.6	177.8	144.4

Interval #4 Information Recording

Start Time	5:45
End Time	6:00
Total Time (min)	15

Run Number	8	9	Avg
Vehs Entered	2620	2614	2622
Vehs Exited	2528	2504	2532
Starting Vehs	1130	1074	1084
Ending Vehs	1222	1184	1173
Travel Distance (mi)	1855	1855	1882
Travel Time (hr)	355.2	340.6	374.3
Total Delay (hr)	299.8	285.2	318.1
Total Stops	8021	7964	8034
Fuel Used (gal)	139.8	135.7	144.7

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.3	0.2	0.3	0.2	0.1	0.3	0.0	0.0	0.0	1.0	3.0	0.1
Denied Del/Veh (s)	3.9	2.2	2.9	2.9	2.2	2.9	0.0	0.0	0.0	15.0	11.0	13.0
Total Delay (hr)	7.7	10.0	2.9	4.6	1.1	2.5	2.0	10.1	0.1	10.2	15.5	0.1
Total Del/Veh (s)	98.7	102.8	32.5	63.2	41.2	27.3	58.2	33.1	13.0	160.6	58.9	7.7
Stop Delay (hr)	6.5	8.4	2.5	4.1	0.9	2.1	1.8	7.5	0.1	9.4	11.7	0.0
Stop Del/Veh (s)	84.0	86.5	27.6	56.8	35.0	23.4	53.3	24.7	10.2	148.6	44.2	3.9

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	5.3
Denied Del/Veh (s)	4.7
Total Delay (hr)	66.7
Total Del/Veh (s)	58.7
Stop Delay (hr)	55.1
Stop Del/Veh (s)	48.5

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.7	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	4.6	2.6	3.7	0.2	0.0	0.0	0.0	1.8	0.2
Total Delay (hr)	2.1	5.6	0.0	6.9	9.1	0.8	29.8	5.1	0.7	0.4	33.8	0.4
Total Del/Veh (s)	77.9	148.3	3.0	134.1	132.6	128.9	104.4	16.4	8.1	129.2	88.7	13.0
Stop Delay (hr)	2.0	5.4	0.0	6.4	8.3	0.7	25.3	2.8	0.2	0.3	29.6	0.2
Stop Del/Veh (s)	74.1	141.9	0.0	124.5	121.6	120.1	88.7	9.0	2.4	122.3	77.7	8.9

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	1.2
Denied Del/Veh (s)	0.9
Total Delay (hr)	94.5
Total Del/Veh (s)	73.5
Stop Delay (hr)	81.3
Stop Del/Veh (s)	63.3

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.9	0.0	0.0	0.0	0.0	0.0	1.0
Denied Del/Veh (s)	8.1	0.3	0.0	0.0	0.0	0.0	0.7
Total Delay (hr)	12.1	0.1	11.5	1.2	3.1	12.0	39.9
Total Del/Veh (s)	103.1	0.7	20.1	7.3	48.9	32.4	28.8
Stop Delay (hr)	11.2	0.0	5.7	0.2	2.5	8.1	27.6
Stop Del/Veh (s)	96.2	0.0	9.9	1.0	39.1	21.8	19.9

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.2	0.0	0.0	8.4	1.4	93.2	0.0	0.6	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.6	0.2	0.2	388.2	493.8	422.4	0.4	1.1	0.4	0.0	0.0	0.0
Total Delay (hr)	6.7	0.6	1.2	12.8	1.0	64.7	0.6	65.5	1.5	19.5	14.7	0.1
Total Del/Veh (s)	57.1	55.8	78.0	920.2	578.4	469.4	158.5	124.7	35.8	119.8	50.9	4.2
Stop Delay (hr)	6.1	0.6	1.2	12.9	1.0	63.5	0.5	52.8	1.2	17.1	11.9	0.1
Stop Del/Veh (s)	52.0	52.3	77.0	926.5	579.6	461.2	139.7	100.5	28.6	105.0	41.3	2.5

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	103.7
Denied Del/Veh (s)	73.8
Total Delay (hr)	188.8
Total Del/Veh (s)	140.8
Stop Delay (hr)	168.8
Stop Del/Veh (s)	125.9

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Denied Delay (hr)	9.4	11.1	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	60.6	58.9	58.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	45.8	35.8	4.4	11.9	4.5	1.6	0.4	7.5	22.3	7.3	35.3	6.3
Total Del/Veh (s)	297.1	191.8	159.9	78.9	44.3	23.4	220.4	237.2	63.1	57.1	485.6	35.9
Stop Delay (hr)	41.1	30.1	3.8	10.8	3.8	1.4	0.4	7.4	19.9	7.0	34.5	4.4
Stop Del/Veh (s)	266.9	161.4	135.7	71.6	36.6	20.5	218.5	234.0	56.4	54.9	474.1	24.8

5: Latrobe Road & White Rock Road Performance by movement

Movement	SBR	All
Denied Delay (hr)	0.0	22.1
Denied Del/Veh (s)	0.0	14.7
Total Delay (hr)	0.7	184.0
Total Del/Veh (s)	12.3	121.6
Stop Delay (hr)	0.3	165.0
Stop Del/Veh (s)	5.4	109.0

6: Latrobe Rd & Driveway Performance by movement

Movement	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.7	0.0	0.0	0.0	0.7
Denied Del/Veh (s)	0.2	1.4	2.1	0.0	0.0	0.8
Total Delay (hr)	1.5	3.5	0.2	0.2	0.2	5.7
Total Del/Veh (s)	69.6	7.0	12.0	21.7	0.7	6.4
Stop Delay (hr)	1.6	2.0	0.1	0.2	0.0	3.9
Stop Del/Veh (s)	71.5	3.9	8.9	19.6	0.0	4.3

7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.7	0.4	0.4	0.1	0.1	0.1	2.3	0.2	0.3	0.0	0.0	0.0
Total Delay (hr)	6.7	0.2	0.6	0.1	0.2	0.1	0.4	5.2	0.1	0.3	2.8	0.5
Total Del/Veh (s)	60.6	55.7	55.7	52.0	57.1	21.7	61.0	14.8	13.4	65.9	9.4	12.0
Stop Delay (hr)	5.9	0.1	0.6	0.1	0.1	0.1	0.3	4.0	0.1	0.3	2.1	0.4
Stop Del/Veh (s)	53.9	48.0	50.0	49.7	53.5	20.6	57.9	11.2	10.4	63.4	7.0	9.1

7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.2
Total Delay (hr)	17.1
Total Del/Veh (s)	20.4
Stop Delay (hr)	14.1
Stop Del/Veh (s)	16.8

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	1.4	0.5	0.1	0.6
Denied Del/Veh (s)	0.2	0.1	0.1	0.0	0.0	0.0	84.6	74.4	79.1	11.7	12.7	9.1
Total Delay (hr)	5.8	7.1	0.3	2.4	19.2	3.2	16.3	0.3	0.5	5.3	0.7	5.1
Total Del/Veh (s)	79.7	25.9	12.9	116.1	84.2	65.3	478.2	41.6	31.2	114.9	91.3	75.2
Stop Delay (hr)	5.2	4.6	0.1	2.1	14.7	2.5	16.4	0.2	0.5	5.0	0.6	4.6
Stop Del/Veh (s)	72.6	16.8	7.4	99.3	64.2	50.0	480.1	37.4	29.6	107.5	82.4	68.7

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	6.2
Denied Del/Veh (s)	7.4
Total Delay (hr)	66.1
Total Del/Veh (s)	78.5
Stop Delay (hr)	56.5
Stop Del/Veh (s)	67.1

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.6	0.5	0.4	3.6	0.6	0.6	3.8	1.0	1.1
Total Delay (hr)	0.7	9.8	1.4	1.5	5.3	0.8	1.3	0.4	1.3	2.4	0.6	0.3
Total Del/Veh (s)	60.2	34.8	30.9	63.3	22.0	15.6	38.7	37.6	21.2	40.6	31.9	18.9
Stop Delay (hr)	0.6	5.5	0.8	1.4	3.1	0.5	1.1	0.4	1.1	2.1	0.5	0.3
Stop Del/Veh (s)	48.9	19.6	18.0	56.9	12.8	10.0	34.4	32.3	18.3	36.3	27.1	16.3

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.6
Denied Del/Veh (s)	0.7
Total Delay (hr)	25.9
Total Del/Veh (s)	30.2
Stop Delay (hr)	17.5
Stop Del/Veh (s)	20.4

Total Network Performance

Denied Delay (hr)	141.0
Denied Del/Veh (s)	43.4
Total Delay (hr)	733.3
Total Del/Veh (s)	223.2
Stop Delay (hr)	618.2
Stop Del/Veh (s)	188.1

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (ft)	159	175	890	812	224	897	186	242	324	334	339	121
Average Queue (ft)	85	153	480	300	148	158	77	95	162	184	191	14
95th Queue (ft)	153	216	951	820	236	689	152	189	277	297	312	74
Link Distance (ft)			1005	1005		1420			432	432	432	
Upstream Blk Time (%)			4	1		2			0	0	0	
Queuing Penalty (veh)			0	0		0			0	0	0	
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)	1	2	48		11		0	0	2		4	0
Queuing Penalty (veh)	2	8	134		45		1	0	2		1	0

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	B46	SB	SB	SB	SB	SB
Directions Served	T	L	T	T	T	R
Maximum Queue (ft)	2	125	910	887	767	122
Average Queue (ft)	0	120	500	414	261	12
95th Queue (ft)	2	152	943	896	648	64
Link Distance (ft)	321		1017	1017	1017	
Upstream Blk Time (%)			9	0	0	
Queuing Penalty (veh)			0	0	0	
Storage Bay Dist (ft)		100				200
Storage Blk Time (%)		55	26		2	0
Queuing Penalty (veh)		178	60		1	0

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	L	L	T	R	L	L	T	T	T	TR
Maximum Queue (ft)	312	370	149	175	701	175	564	658	647	518	486	354
Average Queue (ft)	95	191	75	142	431	36	454	476	414	168	155	64
95th Queue (ft)	213	334	136	222	759	125	639	706	765	455	404	209
Link Distance (ft)	874	874			695			632	632	632	632	632
Upstream Blk Time (%)					7			7	6	0	0	0
Queuing Penalty (veh)					0			37	34	1	0	1
Storage Bay Dist (ft)			150	150		150	550					
Storage Blk Time (%)			4	4	54	0	5	11				
Queuing Penalty (veh)			10	10	106	0	30	69				

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB	SB	SB	B46	B46	B46	B46
Directions Served	L	T	T	TR	R	T	T	T	T
Maximum Queue (ft)	224	419	408	414	397	478	450	456	407
Average Queue (ft)	34	388	363	362	221	276	246	177	110
95th Queue (ft)	154	427	428	448	498	532	509	434	357
Link Distance (ft)		321	321	321	321	432	432	432	432
Upstream Blk Time (%)		71	40	38	17	10	4	3	2
Queuing Penalty (veh)		274	154	148	66	39	16	10	7
Storage Bay Dist (ft)	200								
Storage Blk Time (%)		75							
Queuing Penalty (veh)		7							

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	843	424	200	590	584	559	425	158	506	660	644	572
Average Queue (ft)	254	156	126	220	152	137	41	65	141	274	195	139
95th Queue (ft)	760	429	243	579	467	389	230	136	447	690	609	509
Link Distance (ft)	1203			570	570	570	570			632	632	632
Upstream Blk Time (%)	5			4	1	0	0			8	4	2
Queuing Penalty (veh)	0			28	5	1	0			33	17	8
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)	11	7	9	8					0	12		
Queuing Penalty (veh)	23	14	55	49					0	28		

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	338
Average Queue (ft)	35
95th Queue (ft)	175
Link Distance (ft)	632
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	265	283	146	199	125	1348	1348	17	227	849	855	846
Average Queue (ft)	152	175	27	63	103	1180	1147	1	27	708	708	714
95th Queue (ft)	240	262	100	162	167	1621	1627	10	125	927	930	926
Link Distance (ft)			1363	1363		1321	1321			837	837	837
Upstream Blk Time (%)						66	31			3	3	4
Queuing Penalty (veh)						0	0			16	16	23
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)	0	0	0		40	60			0	62		
Queuing Penalty (veh)	0	0	0		162	48			0	7		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	837	337	350	642	581	536	329
Average Queue (ft)	548	275	322	474	288	241	44
95th Queue (ft)	958	414	410	787	560	452	178
Link Distance (ft)	837			570	570	570	570
Upstream Blk Time (%)	2			31	1	0	
Queuing Penalty (veh)	8			141	6	1	
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		4	18	31			
Queuing Penalty (veh)		13	66	202			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	UL	T	T
Maximum Queue (ft)	337	350	1796	1771	187	200	336	306	246	270	356	354
Average Queue (ft)	285	342	1325	1178	179	196	285	145	111	207	289	259
95th Queue (ft)	395	389	2174	2217	200	211	398	255	199	335	400	377
Link Distance (ft)			1751	1751			310	310	310		270	270
Upstream Blk Time (%)			36	14			14	0		10	34	17
Queuing Penalty (veh)			0	0			55	0		0	164	80
Storage Bay Dist (ft)	325	325			175	175				270		
Storage Blk Time (%)	7	33	31		10	38	1			10	34	
Queuing Penalty (veh)	24	111	172		18	69	6			33	41	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B80	B25	B25	B25	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	T	T	L	L	T
Maximum Queue (ft)	330	357	66	310	315	334	234	284	318	237	250	858
Average Queue (ft)	240	295	51	111	131	160	63	87	120	215	230	605
95th Queue (ft)	338	408	59	334	362	403	262	310	377	282	300	1128
Link Distance (ft)	270	270		245	245	245	342	342	342			837
Upstream Blk Time (%)	11	39		17	16	28	3	3	7			39
Queuing Penalty (veh)	52	185		111	100	177	16	16	48			158
Storage Bay Dist (ft)			25							225	225	
Storage Blk Time (%)		27	55							42	66	6
Queuing Penalty (veh)		125	178							96	153	17

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	857	862	78
Average Queue (ft)	372	309	14
95th Queue (ft)	946	857	56
Link Distance (ft)	837	837	
Upstream Blk Time (%)	3	1	
Queuing Penalty (veh)	13	2	
Storage Bay Dist (ft)			250
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Latrobe Rd & Driveway

Movement	WB	NB	NB	NB	SB	B25	B80
Directions Served	R	T	T	TR	L	T	T
Maximum Queue (ft)	233	191	242	267	81	6	6
Average Queue (ft)	69	26	48	71	27	0	0
95th Queue (ft)	190	164	236	304	63	6	6
Link Distance (ft)	505	477	477	477		245	270
Upstream Blk Time (%)	0	0	0	1			
Queuing Penalty (veh)	0	0	0	6			
Storage Bay Dist (ft)					250		
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	125	534	73	119	277	328	367	77	221	242	256
Average Queue (ft)	110	271	26	24	130	141	177	18	78	98	120
95th Queue (ft)	156	461	61	73	233	270	331	54	177	198	215
Link Distance (ft)		676	697		752	752	752		477	477	477
Upstream Blk Time (%)		0									
Queuing Penalty (veh)		0									
Storage Bay Dist (ft)	100			200				195			
Storage Blk Time (%)	8	50			2				0		
Queuing Penalty (veh)	20	99			0				0		

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	105	350	366	135	145	728	630	544	496	75	593
Average Queue (ft)	103	295	279	42	89	422	366	386	165	72	358
95th Queue (ft)	108	378	399	123	171	748	661	663	519	83	657
Link Distance (ft)		310	310			1477	1477	537	537		601
Upstream Blk Time (%)		11	6					33	12		11
Queuing Penalty (veh)		80	43					0	0		0
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	63	11	24	0	2	61				65	27
Queuing Penalty (veh)	341	33	19	0	6	44				171	46

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	164	395	406	145	316	319	125	276	124	284
Average Queue (ft)	52	238	247	78	186	176	80	123	102	122
95th Queue (ft)	136	382	389	144	280	273	135	231	144	257
Link Distance (ft)		1477	1477		738	738		553		304
Upstream Blk Time (%)										1
Queuing Penalty (veh)										0
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)		26		5	19		6	14	24	5
Queuing Penalty (veh)		11		22	17		15	16	32	10

Network Summary

Network wide Queuing Penalty: 5681

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	358	63	45	960	701	178
Future Volume (veh/h)	358	63	45	960	701	178
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	389	68	49	1043	762	193
Adj No. of Lanes	1	1	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	461	411	93	1751	1396	350
Arrive On Green	0.26	0.26	0.05	0.49	0.34	0.34
Sat Flow, veh/h	1774	1583	1774	3632	4224	1017
Grp Volume(v), veh/h	389	68	49	1043	636	319
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1695	1683
Q Serve(g_s), s	8.5	1.4	1.1	8.6	6.2	6.2
Cycle Q Clear(g_c), s	8.5	1.4	1.1	8.6	6.2	6.2
Prop In Lane	1.00	1.00	1.00			0.60
Lane Grp Cap(c), veh/h	461	411	93	1751	1166	579
V/C Ratio(X)	0.84	0.17	0.53	0.60	0.54	0.55
Avail Cap(c_a), veh/h	741	662	218	2870	2000	993
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	11.7	18.8	7.4	10.8	10.8
Incr Delay (d2), s/veh	2.6	0.1	1.7	0.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	1.3	0.6	4.1	2.8	2.9
LnGrp Delay(d),s/veh	16.9	11.7	20.5	7.5	10.9	11.1
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	457			1092	955	
Approach Delay, s/veh	16.1			8.1	11.0	
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		26.1		14.6	6.1	20.0		
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0		
Max Green Setting (Gmax), s		33.0		17.0	5.0	24.0		
Max Q Clear Time (g_c+I1), s		10.6		10.5	3.1	8.2		
Green Ext Time (p_c), s		6.4		0.2	0.0	5.8		

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	240	150	10	110	163	110	474	20	333	302	128
Future Volume (veh/h)	358	240	150	10	110	163	110	474	20	333	302	128
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	389	261	163	11	154	154	120	515	22	362	328	139
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	507	307	192	10	144	132	151	739	32	393	854	355
Arrive On Green	0.29	0.29	0.29	0.08	0.08	0.08	0.09	0.21	0.21	0.22	0.35	0.35
Sat Flow, veh/h	1774	1074	671	124	1733	1583	1774	3459	148	1774	2439	1014
Grp Volume(v), veh/h	389	0	424	165	0	154	120	263	274	362	236	231
Grp Sat Flow(s),veh/h/ln	1774	0	1744	1857	0	1583	1774	1770	1837	1774	1770	1684
Q Serve(g_s), s	19.3	0.0	22.0	8.0	0.0	8.0	6.4	13.2	13.2	19.2	9.6	9.9
Cycle Q Clear(g_c), s	19.3	0.0	22.0	8.0	0.0	8.0	6.4	13.2	13.2	19.2	9.6	9.9
Prop In Lane	1.00		0.38	0.07		1.00	1.00		0.08	1.00		0.60
Lane Grp Cap(c), veh/h	507	0	498	155	0	132	151	378	393	393	620	590
V/C Ratio(X)	0.77	0.00	0.85	1.07	0.00	1.17	0.80	0.70	0.70	0.92	0.38	0.39
Avail Cap(c_a), veh/h	684	0	672	155	0	132	277	538	559	406	667	635
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	0.0	32.4	44.0	0.0	44.0	43.1	34.9	34.9	36.6	23.4	23.5
Incr Delay (d2), s/veh	3.7	0.0	7.8	91.3	0.0	130.4	9.1	2.3	2.2	25.7	0.4	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	9.9	0.0	11.7	8.0	0.0	8.3	3.5	6.7	6.9	12.2	4.7	4.7
LnGrp Delay(d),s/veh	35.1	0.0	40.2	135.3	0.0	174.4	52.2	37.2	37.1	62.2	23.8	23.9
LnGrp LOS	D		D	F		F	D	D	D	E	C	C
Approach Vol, veh/h		813			319			657			829	
Approach Delay, s/veh		37.7			154.2			39.9			40.6	
Approach LOS		D			F			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	25.3	25.8		13.0	12.2	38.9		31.9
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	22.0	29.2		8.0	15.0	36.2		37.0
Max Q Clear Time (g_c+I1), s	21.2	15.2		10.0	8.4	11.9		24.0
Green Ext Time (p_c), s	0.1	5.3		0.0	0.1	6.7		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	53.4
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	949	50	73	732	123	30	0	53	73	0	40
Future Volume (veh/h)	70	949	50	73	732	123	30	0	53	73	0	40
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	76	1032	54	79	796	134	33	0	58	79	0	43
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	1679	88	100	1745	781	43	0	76	121	0	108
Arrive On Green	0.05	0.49	0.49	0.06	0.49	0.49	0.07	0.00	0.07	0.07	0.00	0.07
Sat Flow, veh/h	1774	3422	179	1774	3539	1583	597	0	1050	1774	0	1583
Grp Volume(v), veh/h	76	534	552	79	796	134	91	0	0	79	0	43
Grp Sat Flow(s),veh/h/ln	1774	1770	1831	1774	1770	1583	1648	0	0	1774	0	1583
Q Serve(g_s), s	2.2	11.4	11.4	2.3	7.6	2.4	2.8	0.0	0.0	2.2	0.0	1.3
Cycle Q Clear(g_c), s	2.2	11.4	11.4	2.3	7.6	2.4	2.8	0.0	0.0	2.2	0.0	1.3
Prop In Lane	1.00		0.10	1.00		1.00	0.36		0.64	1.00		1.00
Lane Grp Cap(c), veh/h	96	869	899	100	1745	781	119	0	0	121	0	108
V/C Ratio(X)	0.79	0.61	0.61	0.79	0.46	0.17	0.77	0.00	0.00	0.65	0.00	0.40
Avail Cap(c_a), veh/h	219	1005	1040	161	1894	847	955	0	0	161	0	144
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.2	9.6	9.6	24.1	8.6	7.3	23.6	0.0	0.0	23.5	0.0	23.1
Incr Delay (d2), s/veh	5.5	1.0	0.9	5.3	0.2	0.1	3.8	0.0	0.0	2.2	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	1.2	5.7	5.9	1.2	3.7	1.1	1.4	0.0	0.0	1.2	0.0	0.6
LnGrp Delay(d),s/veh	29.7	10.6	10.5	29.4	8.8	7.4	27.4	0.0	0.0	25.8	0.0	24.0
LnGrp LOS	C	B	B	C	A	A	C			C		C
Approach Vol, veh/h		1162			1009			91			122	
Approach Delay, s/veh		11.8			10.2			27.4			25.1	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	31.2		7.2	6.4	31.1		7.0
Change Period (Y+Rc), s	3.5	5.7		3.5	3.5	5.7		3.5
Max Green Setting (Gmax), s	6.4	27.7		30.0	4.7	29.4		4.7
Max Q Clear Time (g_c+I1), s	4.2	9.6		4.8	4.3	13.4		4.2
Green Ext Time (p_c), s	0.0	13.2		0.3	0.0	12.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	902	143	160	553	0	325	20	440	0	30	50
Future Volume (veh/h)	30	902	143	160	553	0	325	20	440	0	30	50
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	980	155	174	601	0	353	22	478	0	33	54
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	1236	195	202	1782	0	380	24	512	2	53	86
Arrive On Green	0.02	0.40	0.40	0.11	0.50	0.00	0.21	0.34	0.34	0.00	0.08	0.08
Sat Flow, veh/h	1774	3063	484	1774	3632	0	1774	70	1524	1774	637	1042
Grp Volume(v), veh/h	33	566	569	174	601	0	353	0	500	0	0	87
Grp Sat Flow(s),veh/h/ln	1774	1770	1777	1774	1770	0	1774	0	1594	1774	0	1679
Q Serve(g_s), s	2.1	31.1	31.2	10.7	11.3	0.0	21.7	0.0	33.7	0.0	0.0	5.6
Cycle Q Clear(g_c), s	2.1	31.1	31.2	10.7	11.3	0.0	21.7	0.0	33.7	0.0	0.0	5.6
Prop In Lane	1.00		0.27	1.00		0.00	1.00		0.96	1.00		0.62
Lane Grp Cap(c), veh/h	41	714	718	202	1782	0	380	0	536	2	0	139
V/C Ratio(X)	0.80	0.79	0.79	0.86	0.34	0.00	0.93	0.00	0.93	0.00	0.00	0.63
Avail Cap(c_a), veh/h	110	714	718	233	1782	0	432	0	816	48	0	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	53.9	29.0	29.0	48.3	16.5	0.0	42.8	0.0	35.6	0.0	0.0	49.2
Incr Delay (d2), s/veh	12.1	8.8	8.8	21.7	0.5	0.0	23.8	0.0	10.1	0.0	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	1.1	16.8	16.9	6.4	5.6	0.0	13.1	0.0	16.2	0.0	0.0	2.7
LnGrp Delay(d),s/veh	66.0	37.8	37.8	70.0	17.0	0.0	66.6	0.0	45.7	0.0	0.0	51.0
LnGrp LOS	E	D	D	E	B		E		D			D
Approach Vol, veh/h		1168			775			853			87	
Approach Delay, s/veh		38.6			28.9			54.3			51.0	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.2	50.8	28.1	13.8	7.2	61.9	0.0	41.9
Change Period (Y+Rc), s	5.6	6.0	4.4	4.6	4.6	6.0	4.6	4.6
Max Green Setting (Gmax), s	14.6	44.8	27.0	33.0	6.9	53.5	3.0	56.8
Max Q Clear Time (g_c+I1), s	12.7	33.2	23.7	7.6	4.1	13.3	0.0	35.7
Green Ext Time (p_c), s	0.0	9.0	0.1	1.6	0.0	21.6	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	1673	10	0	1050
Future Vol, veh/h	0	10	1673	10	0	1050
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	1818	11	0	1141

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	915	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	275	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	275	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	275	-
HCM Lane V/C Ratio	-	-	0.04	-
HCM Control Delay (s)	-	-	18.6	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Montano de El Dorado — Cumulative (2035) Conditions
15: Silva Valley Pkwy & US-50 WB Ramps — PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	612	10	420	0	1263	40	0	560	490
Future Volume (veh/h)	0	0	0	612	10	420	0	1263	40	0	560	490
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	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				673	0	457	0	1373	0	0	609	533
Adj No. of Lanes				2	0	1	0	2	1	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				1187	0	530	0	1789	800	0	1789	800
Arrive On Green				0.33	0.00	0.33	0.00	0.67	0.00	0.00	0.51	0.51
Sat Flow, veh/h				3548	0	1583	0	3632	1583	0	3632	1583
Grp Volume(v), veh/h				673	0	457	0	1373	0	0	609	533
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1770	1583	0	1770	1583
Q Serve(g_s), s				7.8	0.0	13.5	0.0	13.1	0.0	0.0	5.1	12.6
Cycle Q Clear(g_c), s				7.8	0.0	13.5	0.0	13.1	0.0	0.0	5.1	12.6
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1187	0	530	0	1789	800	0	1789	800
V/C Ratio(X)				0.57	0.00	0.86	0.00	0.77	0.00	0.00	0.34	0.67
Avail Cap(c_a), veh/h				1277	0	570	0	1789	800	0	1789	800
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.84	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				13.7	0.0	15.6	0.0	6.2	0.0	0.0	7.4	9.2
Incr Delay (d2), s/veh				0.5	0.0	12.3	0.0	2.7	0.0	0.0	0.5	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.8	0.0	7.6	0.0	6.6	0.0	0.0	2.6	6.3
LnGrp Delay(d),s/veh				14.2	0.0	27.8	0.0	8.9	0.0	0.0	7.9	13.6
LnGrp LOS				B		C		A			A	B
Approach Vol, veh/h					1130			1373			1142	
Approach Delay, s/veh					19.7			8.9			10.6	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		29.3				29.3		20.7
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		24.0				24.0		18.0
Max Q Clear Time (g_c+I1), s		15.1				14.6		15.5
Green Ext Time (p_c), s		7.8				8.2		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	630	0	40	0	0	0	19	673	685	0	972	200
Future Volume (veh/h)	630	0	40	0	0	0	19	673	685	0	972	200
Number	7	4	14				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	0	1863				1900	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	685	0	43				21	732	0	0	1057	0
Adj No. of Lanes	2	0	1				0	3	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				2	2	2	0	2	2
Cap, veh/h	825	0	379				108	2814	935	0	3002	935
Arrive On Green	0.24	0.00	0.24				0.59	0.59	0.00	0.00	0.59	0.00
Sat Flow, veh/h	3442	0	1583				52	4766	1583	0	5253	1583
Grp Volume(v), veh/h	685	0	43				274	479	0	0	1057	0
Grp Sat Flow(s),veh/h/ln	1721	0	1583				1733	1543	1583	0	1695	1583
Q Serve(g_s), s	9.4	0.0	1.1				0.0	3.8	0.0	0.0	5.4	0.0
Cycle Q Clear(g_c), s	9.4	0.0	1.1				3.5	3.8	0.0	0.0	5.4	0.0
Prop In Lane	1.00		1.00				0.08		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	825	0	379				1100	1821	935	0	3002	935
V/C Ratio(X)	0.83	0.00	0.11				0.25	0.26	0.00	0.00	0.35	0.00
Avail Cap(c_a), veh/h	895	0	412				1100	1821	935	0	3002	935
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	0.90	0.00
Uniform Delay (d), s/veh	18.0	0.0	14.9				4.9	5.0	0.0	0.0	5.3	0.0
Incr Delay (d2), s/veh	6.3	0.0	0.1				0.5	0.4	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	5.2	0.0	0.5				1.9	1.7	0.0	0.0	2.5	0.0
LnGrp Delay(d),s/veh	24.3	0.0	15.0				5.5	5.3	0.0	0.0	5.4	0.0
LnGrp LOS	C		B				A	A			A	
Approach Vol, veh/h		728						753			1057	
Approach Delay, s/veh		23.8						5.4			5.4	
Approach LOS		C						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		34.0		16.0		34.0		
Change Period (Y+Rc), s		4.5		4.0		4.5		
Max Green Setting (Gmax), s		28.5		13.0		28.5		
Max Q Clear Time (g_c+I1), s		5.8		11.4		7.4		
Green Ext Time (p_c), s		13.8		0.5		13.1		

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	75	1838	47	45	1333
Future Vol, veh/h	0	75	1838	47	45	1333
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	-	-	250	-
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	82	1998	51	49	1449

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	1025	0	0	2049	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	5.34	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	0	200	-	-	118	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	200	-	-	118	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	34.9	0	1.8
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	200	118	-
HCM Lane V/C Ratio	-	-	0.408	0.415	-
HCM Control Delay (s)	-	-	34.9	55.6	-
HCM Lane LOS	-	-	D	F	-
HCM 95th %tile Q(veh)	-	-	1.8	1.8	-

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_AM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	Latrobe Road from White Rock to Golden Foothills
Units:	U.S. Customary

Direction 1: NB

LOS and Performance Measures

Flow rate, v_p	1625	pc/h/ln
Capacity, C	6288	pc/h/ln
Speed, S	54.8	mi/h
Density, D	9.9	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1465	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	55.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	54.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	54.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	54.8	mi/h
Capacity, c	2096	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	2096	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1465	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	542	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	542	pc/h/ln
Free-Flow Speed, FFS	55.0	mi/h
Capacity, c	2096	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	54.8	mi/h
Density, D	9.9	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	1465	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	531	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.85	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:23:17

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_AM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	Latrobe Road from White Rock to Golden Foothills
Units:	U.S. Customary

Direction 2: SB

LOS and Performance Measures

Flow rate, v_p	2214	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	44.8	mi/h
Density, D	16.5	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	0.3	access points/mi
Demand Volume, V	1996	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	44.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	44.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	44.8	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1996	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	738	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	738	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	44.8	mi/h
Density, D	16.5	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1996	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	723	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	3.01	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:23:57

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_AM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	644	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.2	mi/h
Density, D	5.0	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	581	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	581	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	215	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	215	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	5.0	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	581	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	211	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.38	
Bicycle LOS	B	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:36:11

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_AM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	White Rock Road from Latrobe to Post
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1582	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.4	mi/h
Density, D	12.1	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	1426	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1426	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	527	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	527	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	12.1	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1426	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	517	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.84	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:30:44

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_AM_WR2.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	White Rock Road from Post to Valley View
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	517	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.2	mi/h
Density, D	4.0	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	466	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	466	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	172	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	172	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	4.0	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	466	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	169	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.27	
Bicycle LOS	B	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 16:51:35

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_AM_WR2.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	AM
Project Description:	White Rock Road from Post to Valley View
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1626	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.4	mi/h
Density, D	12.5	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	1466	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1466	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	542	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	542	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	12.5	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1466	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	531	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.85	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 16:52:01

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_PM_Latrobe.xhm	
Analyst:		
Agency:		
Jurisdiction:		
Date:	7/14/2017	
Analysis Year:	2017	
Time Period Analyzed:	PM	
Project Description:	Latrobe Road from White Rock to Golden Foothills	
Units:	U.S. Customary	

Direction 1: NB

LOS and Performance Measures

Flow rate, v_p	2102	pc/h/ln
Capacity, C	6288	pc/h/ln
Speed, S	54.8	mi/h
Density, D	12.8	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1895	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	55.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	54.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	54.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	54.8	mi/h
Capacity, c	2096	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	2096	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1895	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	701	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	701	pc/h/ln
Free-Flow Speed, FFS	55.0	mi/h
Capacity, c	2096	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	54.8	mi/h
Density, D	12.8	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1895	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	687	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.98	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:39:55

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_PM_Latrobe.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	Latrobe Road from White Rock to Golden Foothills
Units:	U.S. Customary

Direction 2: SB

LOS and Performance Measures

Flow rate, v_p	1035	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	44.8	mi/h
Density, D	7.7	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Divided	
Access Point Density	0.3	access points/mi
Demand Volume, V	933	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Divided	
Median Type Adjustment, fM	0.0	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	44.8	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	44.8	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	44.8	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	933	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	345	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	345	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	44.8	mi/h
Density, D	7.7	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	933	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	338	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.62	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:40:18

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_PM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	White Rock Road from Lartrobe to Post
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	1616	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.2	mi/h
Density, D	12.5	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1457	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1457	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	539	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	539	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	12.5	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1457	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	528	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.85	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:42:51

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_PM_WR1.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	White Rock Road from Lartrobe to Post
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1314	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.4	mi/h
Density, D	10.1	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	1185	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1185	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	438	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	438	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	10.1	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	1185	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	429	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.74	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 11:43:08

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_PM_WR2.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	White Rock Road from Post to Valley View
Units:	U.S. Customary

Direction 1: EB

LOS and Performance Measures

Flow rate, v_p	1463	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.2	mi/h
Density, D	11.3	pc/mi/ln
Level of Service, LOS	B	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	1.0	access points/mi
Demand Volume, V	1319	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane Width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	1.0	access points/mi
Access Point Density Adjustment, fA	0.3	mi/h
Free-Flow Speed, FFS	43.2	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.2	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.2	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1319	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	488	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	488	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.2	mi/h
Density, D	11.3	pc/mi/ln
Level of service, LOS	B	

Bicycle Level of Service

Hourly Directional Volume, V	1319	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	478	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.80	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 16:52:59

HCS7 Multilane Highway Segments Text Report

MULTILANE HIGHWAY SEGMENT ANALYSIS

File Name:	CumulativePP_PM_WR2.xhm
Analyst:	
Agency:	
Jurisdiction:	
Date:	7/14/2017
Analysis Year:	2017
Time Period Analyzed:	PM
Project Description:	White Rock Road from Post to Valley View
Units:	U.S. Customary

Direction 2: WB

LOS and Performance Measures

Flow rate, v_p	1161	pc/h/ln
Capacity, C	5700	pc/h/ln
Speed, S	43.4	mi/h
Density, D	8.9	pc/mi/ln
Level of Service, LOS	A	

Step 1: Input Data

Number of Lanes, N	3	ln
Lane Width	12	ft
Segment Length	-	ft
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Median Type	Undivided	
Access Point Density	0.0	access points/mi
Demand Volume, V	1047	veh/h
Peak Hour Factor, PHF	0.92	
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%

Step 2: Estimate and Adjust FFS

Estimating FFS		
Measured or Base FFS	Base	
Base Free-Flow Speed, BFFS	45.0	mi/h
Lane width	12	ft
Lane Width Adjustment, fLW	0.0	mi/h
Right-Side Lateral Clearance, LCR	6	ft
Left-Side Lateral Clearance, LCL	6	ft
Total Lateral Clearance, TLC	12.00	ft
Total Lateral Clearance Adjustment, fTLC	0.0	mi/h
Median Type	Undivided	
Median Type Adjustment, fM	1.6	mi/h
Access Point Density	0.0	access points/mi
Access Point Density Adjustment, fA	0.0	mi/h
Free-Flow Speed, FFS	43.4	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	43.4	mi/h

Step 3: Estimate and Adjust Capacity

Adjusted Free-flow Speed, FFSadj	43.4	mi/h
Capacity, c	1900	pc/h/ln

Capacity Adjustments		
Driver Population	All Familiar	
Capacity Adjustment Factor, CAF	1.000	
Adjusted Capacity, cadj	1900	pc/h/ln

Step 4: Adjust Demand Volume

Demand Volume, V	1047	veh/h
Peak Hour Factor, PHF	0.92	
Number of Lanes, N	3	ln
Terrain Type	Level	
Percent Grade	-	%
Grade Length	-	mi
Percent Total Trucks	2.00	%
Percent Single-Unit Trucks, SUT	-	%
Percent Tractor-Trailers, TT	-	%
Proportion of Total Trucks, PT	0.0200	
Heavy Vehicle PCE, ET	2.000	
Heavy Vehicle Adjustment, fHV	0.980	
Demand Adjustment Factor, DAF	1.000	
Demand Flow Rate, v_p	387	pc/h/ln

Steps 5 and 6: Estimate Speed and Density and Determine LOS

Demand Flow Rate, v_p	387	pc/h/ln
Free-Flow Speed, FFS	45.0	mi/h
Capacity, c	1900	pc/h/ln
Breakpoint, BP	1400	pc/h/ln
Density at Capacity, Dc	45	pc/mi/ln
Mean Speed under Base Conditions, S	43.4	mi/h
Density, D	8.9	pc/mi/ln
Level of service, LOS	A	

Bicycle Level of Service

Hourly Directional Volume, V	1047	veh
Peak Hour Factor, PHF	0.92	
Number of Directional Lanes, N	3	ln
Directional Demand Flow Rate in Outside Lane, vOL	379	veh/ln
Percent of Segment with Occupied On-Highway Parking, %OHP	0	
Paved Shoulder Width, Ws	6	ft
Effective Width as a Function of Traffic Volume, Wv	18	ft
Average Effective Width of Outside Lane, We	24	ft
Posted Speed Limit, Sp	50	mi/h
Effective Speed Factor, St	4.62	
Percentage of Heavy Vehicles, HV	0.0200	
Pavement Condition Rating, P	4	
Bicycle Level of Service Score, BLOS	2.68	
Bicycle LOS	C	

This Multilane Highway Segment text report was created in HCS™ Multilane Version 7.5 on 9/13/2018 16:53:20

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

	Segment Inputs				Cumulative (2035) plus Project Conditions													
					Flow Inputs		AM LOS Performance Measures						PM LOS Performance Measures					
		Length	Number of Lanes	Interchange Density	AM Peak	PM Peak	V_p	FFS		S	D	LOS	V_p	FFS		S	D	LOS
		(ft)	(N)	(I/mi)	(veh/h)	(veh/h)	(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)		(pc/h/ln)	(mi/h)		(mi/h)	(pc/mi/ln)	
EB	West of Latrobe Rd SB Off Ramp	6690	3	0.33	3,108	3,835	1137.35	74.12	75	74.7912	15.207	B	1403.388	74.12	75	73.1987	19.2	C
EB	Latrobe Rd NB Off Ramp to Latrobe Rd On Ramp	1990	3	0.50	1,671	3,075	611.489	73.6	75	73.3291	8.339	A	1125.272	73.6	75	74.8263	15.038	B
EB	Silva Valley Pkwy SB/NB Off Ramp to Silva Valley Pkwy NB/SB On Ramp	2375	3	0.50	2,077	3,364	760.062	73.6	75	74.3627	10.221	A	1231.029	73.6	75	74.4091	16.544	B
EB	East of Silva Valley Pkwy NB/SB On Ramp	3400	3	0.50	2,490	4,249	911.196	73.6	75	74.9127	12.163	B	1554.888	73.6	75	71.5915	21.719	C
WB	Silva Valley Pkwy NB/SB Off Ramp to Silva Valley Pkwy SB/NB On Ramp	2350	3	0.50	2,976	2,571	1089.04	73.6	75	74.9122	14.538	B	940.837	73.6	75	74.9613	12.551	B
WB	El Dorado Hills Blvd Off Ramp to El Dorado Hills Blvd On Ramp	3565	3	0.50	3,720	2,853	1361.3	73.6	75	73.5549	18.507	C	1044.033	73.6	75	74.9785	13.924	B
Univeral	Weaving Segment	5500	2	0.33	4,294	3,613							1983.223	74.13	75	64.2983	30.844	D
		3425	3	0.50	4,186	3,111							1138.446	73.6	75	74.7878	15.222	B

PHF 0.92

(P_T) 2%

f_{HV} 0.99009901

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

		Cumulative (2035) plus Project Conditions																																	
		Segment Inputs			AM Flow Inputs			AM LOS Performance Measures												PM Flow Inputs			PM LOS Performance Measures													
		Number of Lanes	Number of Ramp Lanes	Length of Acceleration Lane (L_a)	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	v_R/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	v_R/S_{FR}	P_{FM}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
		(N)		(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/h)	(pc/h)			(pc/h/ln)					(pc/mi/ln)		(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/hr)	(pc/h)			(pc/h/ln)					(pc/mi/ln)	
EB	Latrobe Rd On Ramp	3	1	110	2367	1671	696	2599	1834	764	52	0.5806	1065.1	7200	385	799	1065	0.3609	18.701	B	4034	3075	959	4429	3376	1053	96	0.5806	1959.9	7200	708	1470	1960	0.6151	27.8	C
	Silva Valley SB On Ramp	3	1	110	2277	2077	200	2500	2280	220	65	0.5806	1323.8	7200	478	993	1324	0.3472	16.723	B	3564	3364	200	3913	3693	220	106	0.5806	2144.1	7200	774	1608	2144	0.5434	23.121	C
	Silva Valley NB On Ramp	3	1	550	2490	2277	213	2734	2500	234	71	0.5929	1482.1	7200	509	1112	1482	0.3797	15.303	B	4249	3564	685	4665	3913	752	112	0.5929	2319.8	7200	796	1740	2320	0.6479	25.641	C
WB	El Dorado Hills Blvd On Ramp	3	1	795	4870	3720	1150	5346	4084	1263	117	0.5998	2449.4	7200	817	1837	2449	0.7426	28.862	D	4418	2853	1565	4850	3132	1718	89	0.5998	1878.5	7200	627	1409	1879	0.6736	27.754	C
	Silva Valley SB On Ramp	3	1	800	4186	3006	1180	4596	3300	1295	94	0.5999	1979.7	7200	660	1485	1980	0.6383	25.409	C	3111	2611	500	3415	2866	549	82	0.5999	1719.6	7200	573	1290	1720	0.4744	17.901	B
	Silva Valley NB On Ramp	3	1	110	3006	2976	30	3300	3267	33	93	0.5806	1896.8	7200	685	1423	1897	0.4583	19.822	B	2611	2571	40	2866	2823	44	81	0.5806	1638.7	7200	592	1229	1639	0.3981	17.889	B

Universal Inputs

Length	1500	(ft)
S_{FF}	70	(mi/h)
S_{FR}	35	(mi/h)
PHF	0.92	
(P_T)	2%	
F_{HV}	0.99009901	

Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

	Segment Inputs				AM Flow Inputs			AM LOS Performance Measures										PM Flow Inputs			PM LOS Performance Measures									
								Cumulative (2035) plus Project Conditions																					
	Number of Lanes	Number of Ramp Lanes	L_{EQ}	Length of Deceleration Lane (L_D)	Downstream Volume	Upstream Volume	Ramp Volume	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	v_D	v_F	v_R	P_{FD}	v_{12}	Capacity	v_3		v_{12a}	v/c	D	LOS
	(N)		(ft)	(ft)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)			(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)		(pc/h/ln)						(pc/mi/ln)	
EB	Latrobe SB Off Ramp	3	1	441	140	1891	3108	1217	241.522	3412	1336.1	0.436	2241.2	7200	585	1681	2241	0.4739	22.266	C	3415	3835	420	373.261	4210.2	461.09	0.436	2095.7	7200	1057	1572	2096	0.5847	21.015	C
	Latrobe NB Off Ramp	3	1	-	140	1671	1891	220	-	2076	241.52	0.697	1520.1	7200	556	1140	1520	0.2883	16.065	B	3075	3415	340	-	3749.1	373.26	0.6491	2564.5	7200	1185	1923	2565	0.5207	25.047	C
	Silva Valley SB Off Ramp	3	1	-	150	2077	2367	290	-	2598.6	318.37	0.6804	1869.8	7200	364	1402	1870	0.3609	18.982	B	3364	4034	670	-	4428.6	735.54	0.6154	3008.5	7200	1420	2256	3008	0.6151	28.775	D
WB	El Dorado Hills Blvd Off Ramp	3	1	-	190	3720	4186	466	-	4595.5	511.59	0.6216	3050.1	7200	1545	2288	3050	0.6383	28.773	D	2853	3111	258	-	3415.3	283.24	0.6616	2355.4	7200	1060	1767	2355	0.4744	22.798	C
	Silva Valley NB Off Ramp	3	1	-	150	2976	4299	1323	-	4719.6	1452.4	0.5752	3331.7	7200	1388	2499	3332	0.6555	31.554	D	2571	3613	1042	-	3966.4	1143.9	0.6082	2860.6	7200	1106	2145	2861	0.5509	27.503	C

Universal Inputs:

L_{eng}	1500	(ft)
S_{hr}	70	(mi/h)
S_{fw}	35	(mi/h)
PHF	0.92	
(P_T)	2%	
f_{HV}	0.99009901	

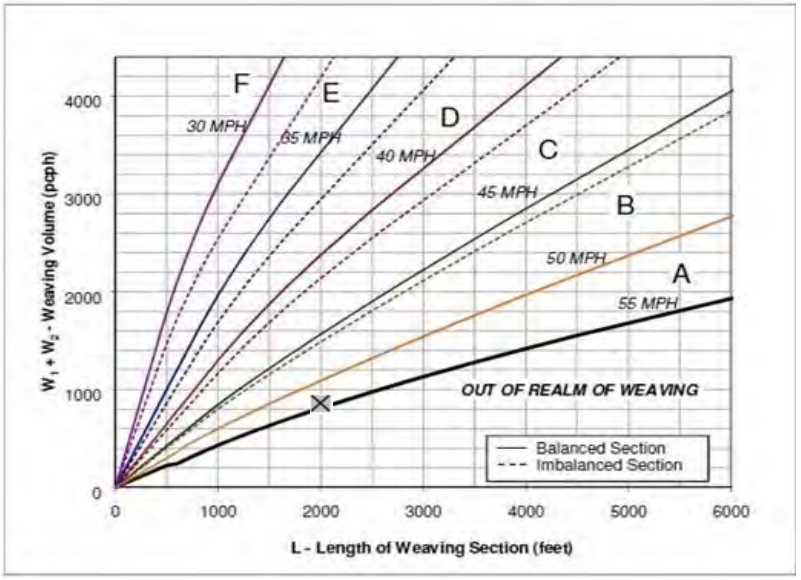
Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) plus Project Conditons (AM)

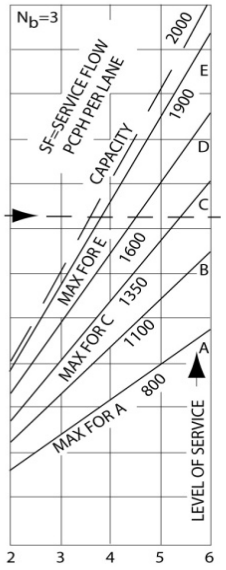
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	2,367	Volume (vph)	696	Volume (vph)	290
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	2,414	Volume (pcph)	703	Volume (pcph)	293

W1 + W2	996
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (Sw, mph)	55.0
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	604
Level of Service (LOS)	A



Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS



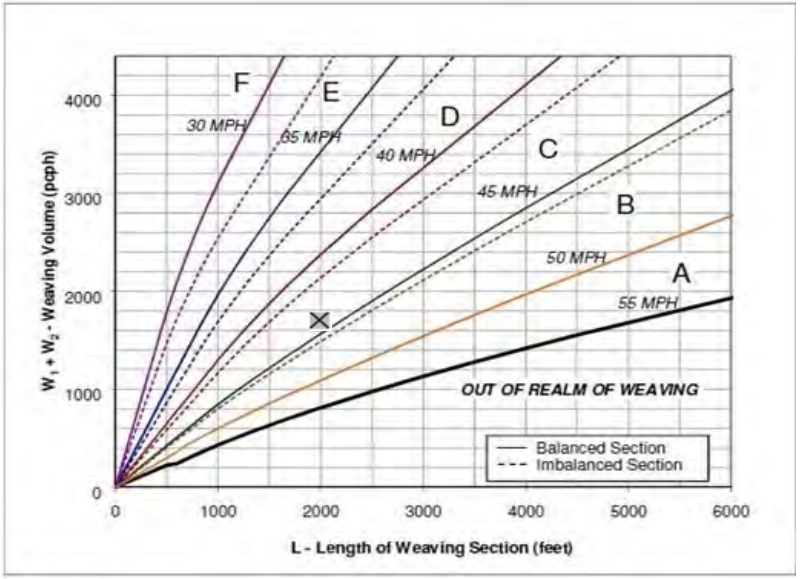
Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) plus Project Conditons (PM)

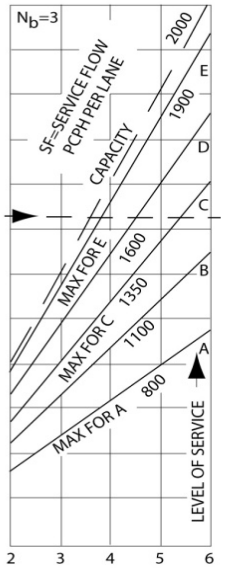
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,034	Volume (vph)	959	Volume (vph)	670
Truck Percentage	4%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,115	Volume (pcph)	969	Volume (pcph)	677

W1 + W2	1,645
In between	
Speed 1	40
Speed 2	45
Interpolated Weaving Speed (Sw, mph)	45.0
Weaving Intensity Factor (k)	1.60
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,130
Level of Service (LOS)	C



Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS



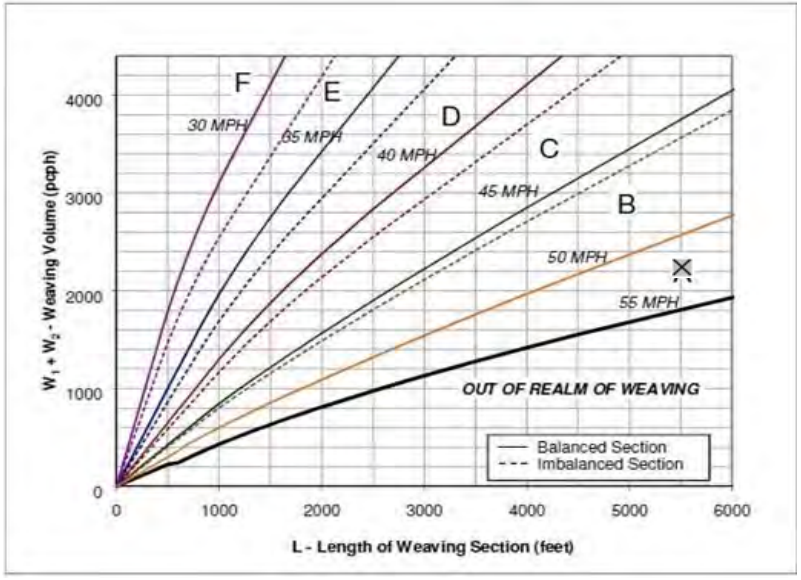
Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

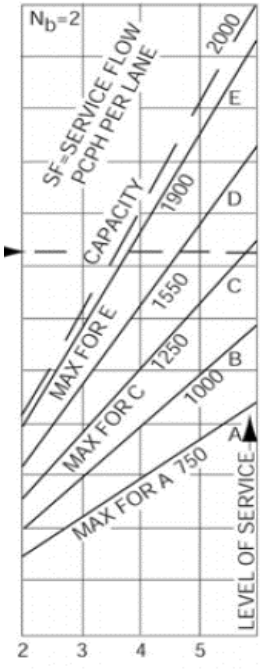
WB US-50, Bass Lake On-Ramp to Silva Valley Off-Ramp, Cumulative (2035) plus Project Conditons (AM)

Number of Entering Mainline Lanes	Nb	2
Number of Lanes in Weaving Section	N	3
Length of Weaving Section (feet)	L	5500

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,299	Volume (vph)	785	Volume (vph)	1,323
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,342	Volume (pcph)	793	Volume (pcph)	1,336

W1 + W2	2,129
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (Sw, mph)	54.0
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,447
Level of Service (LOS)	D





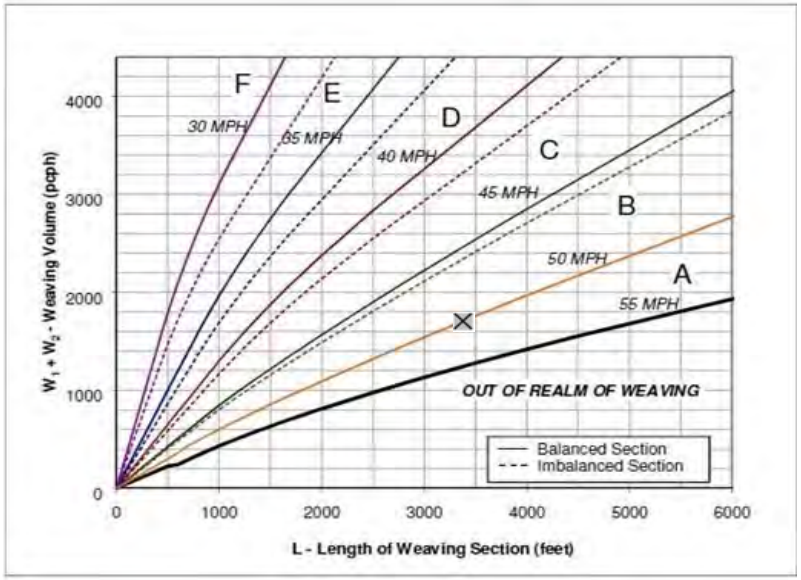
Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

WB US-50, East of El Dorado Hills Blvd Off Ramp, Cumulative (2035) plus Project Conditons (AM)

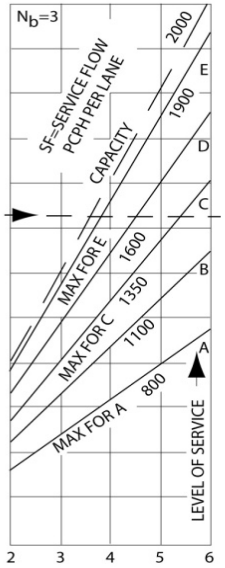
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,186	Volume (vph)	1,180	Volume (vph)	466
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,228	Volume (pcph)	1,192	Volume (pcph)	471

W1 + W2	1,662
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	50.0
Weaving Intensity Factor (k)	1.40
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,104
Level of Service (LOS)	C



Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS



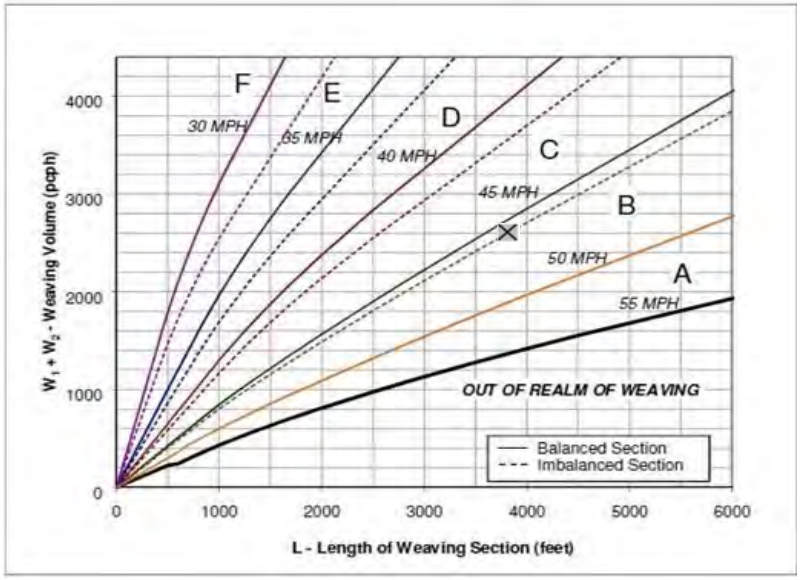
Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

WB US-50, West of El Dorado Hills On Ramp, Cumulative (2035) plus Project Conditons (AM)

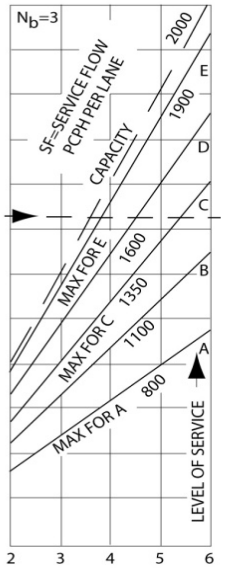
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3775

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,870	Volume (vph)	1,150	Volume (vph)	1,340
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,919	Volume (pcph)	1,162	Volume (pcph)	1,353

W1 + W2	2,515
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	45.0
Weaving Intensity Factor (k)	1.65
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,418
Level of Service (LOS)	D



Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS



Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

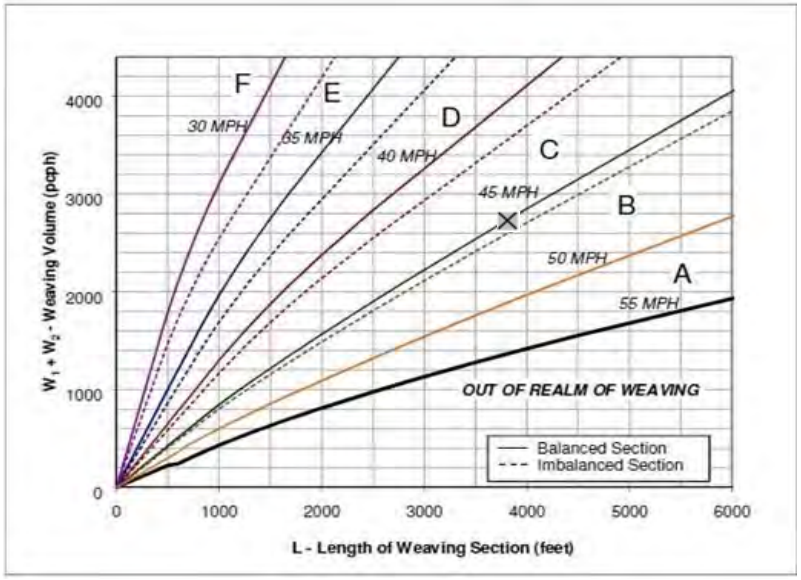
WB US-50, West of El Dorado Hills On Ramp, Cumulative (2035) plus Project Conditons (PM)

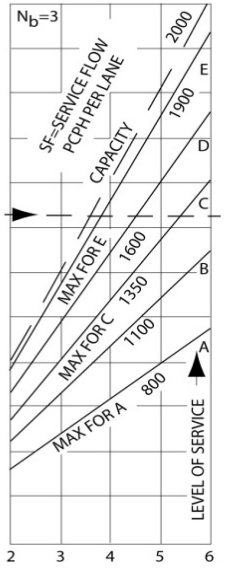
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3775

Nb=NUMBER OF BASIC LANES ON APPROACH
SEE CHART FOR DEFINITION OF OTHER TERMS

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,418	Volume (vph)	1,565	Volume (vph)	1,100
Truck Percentage	2%	Truck Percentage	2%	Truck Percentage	2%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	4,462	Volume (pcph)	1,581	Volume (pcph)	1,111

W1 + W2	2,692
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	45.0
Weaving Intensity Factor (k)	1.20
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,171
Level of Service (LOS)	C





Appendix H

Analysis Worksheets for Mitigated Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	24	5	9	42	202	9	330	4	141	411	423
Future Volume (veh/h)	108	24	5	9	42	202	9	330	4	141	411	423
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	86	99	6	10	181	147	9	347	4	152	442	455
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.80	0.80	0.80	0.86	0.86	0.86	0.95	0.95	0.95	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	178	11	10	173	156	21	1185	14	175	738	661
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.01	0.33	0.33	0.10	0.42	0.42
Sat Flow, veh/h	1774	1739	105	97	1761	1583	1774	3584	41	1774	1770	1583
Grp Volume(v), veh/h	86	0	105	191	0	147	9	171	180	152	442	455
Grp Sat Flow(s),veh/h/ln	1774	0	1844	1858	0	1583	1774	1770	1855	1774	1770	1583
Q Serve(g_s), s	2.3	0.0	2.8	5.0	0.0	4.7	0.3	3.6	3.6	4.3	9.9	11.9
Cycle Q Clear(g_c), s	2.3	0.0	2.8	5.0	0.0	4.7	0.3	3.6	3.6	4.3	9.9	11.9
Prop In Lane	1.00		0.06	0.05		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	182	0	189	183	0	156	21	585	613	175	738	661
V/C Ratio(X)	0.47	0.00	0.56	1.04	0.00	0.94	0.43	0.29	0.29	0.87	0.60	0.69
Avail Cap(c_a), veh/h	1292	0	1343	183	0	156	175	1017	1067	175	1017	910
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	21.7	22.9	0.0	22.8	24.9	12.6	12.6	22.6	11.5	12.1
Incr Delay (d2), s/veh	1.9	0.0	2.5	78.7	0.0	55.2	13.5	0.3	0.3	34.6	0.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.5	6.5	0.0	4.4	0.2	1.8	1.9	3.7	4.9	5.4
LnGrp Delay(d),s/veh	23.4	0.0	24.2	101.7	0.0	78.0	38.4	12.9	12.9	57.2	12.3	13.4
LnGrp LOS	C		C	F		E	D	B	B	E	B	B
Approach Vol, veh/h		191			338			360			1049	
Approach Delay, s/veh		23.9			91.4			13.5			19.3	
Approach LOS		C			F			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	9.0	22.1		10.0	4.6	26.5		9.7
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	5.0	29.2		5.0	5.0	29.2		37.0
Max Q Clear Time (g_c+I1), s	6.3	5.6		7.0	2.3	13.9		4.8
Green Ext Time (p_c), s	0.0	9.0		0.0	0.0	7.3		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

Notes

Montano de El Dorado — Existing Plus Project Conditions - MIT

9: Latrobe Rd & Golden Foothill Pkwy/Clubview Dr — PM PEAK

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	34	9	3	17	124	3	527	3	178	345	104
Future Volume (veh/h)	408	34	9	3	17	124	3	527	3	178	345	104
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	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	580	0	0	0	0	182	4	659	4	207	401	121
Adj No. of Lanes	2	1	0	0	1	2	1	2	0	1	2	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.80	0.80	0.80	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	785	412	0	0	153	260	10	1101	7	146	1027	307
Arrive On Green	0.22	0.00	0.00	0.00	0.00	0.08	0.01	0.31	0.31	0.08	0.38	0.38
Sat Flow, veh/h	3548	1863	0	0	1863	3167	1774	3607	22	1774	2688	802
Grp Volume(v), veh/h	580	0	0	0	0	182	4	323	340	207	262	260
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1863	1583	1774	1770	1859	1774	1770	1721
Q Serve(g_s), s	9.3	0.0	0.0	0.0	0.0	3.4	0.1	9.4	9.4	5.0	6.5	6.7
Cycle Q Clear(g_c), s	9.3	0.0	0.0	0.0	0.0	3.4	0.1	9.4	9.4	5.0	6.5	6.7
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.01	1.00		0.47
Lane Grp Cap(c), veh/h	785	412	0	0	153	260	10	540	567	146	676	658
V/C Ratio(X)	0.74	0.00	0.00	0.00	0.00	0.70	0.42	0.60	0.60	1.42	0.39	0.39
Avail Cap(c_a), veh/h	2159	1133	0	0	153	260	146	850	893	146	850	826
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	0.0	0.0	0.0	0.0	27.2	30.1	18.0	18.0	27.9	13.6	13.7
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.0	0.0	8.0	26.8	1.1	1.0	223.8	0.4	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	4.7	0.0	0.0	0.0	0.0	1.8	0.1	4.7	5.0	11.5	3.2	3.2
LnGrp Delay(d),s/veh	23.4	0.0	0.0	0.0	0.0	35.2	56.9	19.0	19.0	251.7	14.0	14.1
LnGrp LOS	C					D	E	B	B	F	B	B
Approach Vol, veh/h		580			182			667			729	
Approach Delay, s/veh		23.4			35.2			19.2			81.5	
Approach LOS		C			D			B			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	23.9		10.0	4.3	28.5		18.0
Change Period (Y+Rc), s	4.0	5.3		5.0	4.0	5.3		4.5
Max Green Setting (Gmax), s	5.0	29.2		5.0	5.0	29.2		37.0
Max Q Clear Time (g_c+I1), s	7.0	11.4		5.4	2.1	8.7		11.3
Green Ext Time (p_c), s	0.0	7.1		0.0	0.0	7.6		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	42.7
HCM 2010 LOS	D

Notes

Montano de El Dorado — Near Term (2025) Plus Project Conditions - MIT

SimTraffic Simulation Summary — AM Peak

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	8865	8677	8526	8871	8610	8624	8750
Vehs Exited	8750	8579	8452	8704	8557	8453	8620
Starting Vehs	435	417	435	401	399	424	466
Ending Vehs	550	515	509	568	452	595	596
Travel Distance (mi)	5848	5756	5659	5828	5723	5609	5758
Travel Time (hr)	728.1	913.0	942.4	786.4	824.4	965.8	996.5
Total Delay (hr)	547.8	735.5	767.7	607.0	647.8	792.5	818.5
Total Stops	18328	18167	17313	19508	17419	18148	19252
Fuel Used (gal)	353.7	393.4	395.7	368.1	371.9	401.4	412.0

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	8570	8686	8749	8693
Vehs Exited	8494	8628	8589	8580
Starting Vehs	385	416	430	423
Ending Vehs	461	474	590	529
Travel Distance (mi)	5693	5748	5713	5733
Travel Time (hr)	754.2	703.4	895.6	851.0
Total Delay (hr)	578.6	526.6	720.1	674.2
Total Stops	17613	18178	19228	18314
Fuel Used (gal)	356.6	344.5	388.5	378.6

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2249	2193	2120	2256	2090	2128	2247
Vehs Exited	2211	2153	2106	2185	2082	2041	2203
Starting Vehs	435	417	435	401	399	424	466
Ending Vehs	473	457	449	472	407	511	510
Travel Distance (mi)	1471	1447	1408	1456	1390	1376	1477
Travel Time (hr)	120.3	149.5	157.0	122.1	135.1	138.1	159.5
Total Delay (hr)	74.8	104.7	113.3	77.3	92.2	95.7	113.7
Total Stops	4491	4520	4231	4331	4119	4085	4755
Fuel Used (gal)	74.8	80.8	80.5	74.8	75.8	75.4	83.8

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2250	2123	2198	2179
Vehs Exited	2149	2090	2127	2132
Starting Vehs	385	416	430	423
Ending Vehs	486	449	501	472
Travel Distance (mi)	1432	1405	1414	1428
Travel Time (hr)	120.2	123.3	146.4	137.1
Total Delay (hr)	75.9	80.1	102.9	93.1
Total Stops	4234	4285	4468	4348
Fuel Used (gal)	73.8	72.9	79.1	77.2

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2274	2240	2307	2325	2249	2241	2246
Vehs Exited	2227	2173	2243	2248	2140	2232	2150
Starting Vehs	473	457	449	472	407	511	510
Ending Vehs	520	524	513	549	516	520	606
Travel Distance (mi)	1513	1469	1509	1560	1475	1479	1476
Travel Time (hr)	157.4	201.9	220.9	168.4	195.6	215.2	222.4
Total Delay (hr)	110.9	156.7	174.5	120.6	150.1	169.4	176.9
Total Stops	4773	4565	4568	5106	4494	4625	4823
Fuel Used (gal)	84.9	92.8	98.3	89.0	91.9	97.1	97.8

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2242	2250	2279	2260
Vehs Exited	2179	2173	2221	2199
Starting Vehs	486	449	501	472
Ending Vehs	549	526	559	533
Travel Distance (mi)	1474	1472	1488	1491
Travel Time (hr)	173.4	167.6	205.7	192.9
Total Delay (hr)	128.0	122.3	160.0	146.9
Total Stops	4685	4724	5328	4767
Fuel Used (gal)	87.2	85.4	95.0	91.9

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2091	2140	2081	2205	2225	2127	2141
Vehs Exited	2152	2146	2049	2101	2233	2124	2148
Starting Vehs	520	524	513	549	516	520	606
Ending Vehs	459	518	545	653	508	523	599
Travel Distance (mi)	1375	1428	1362	1408	1475	1403	1433
Travel Time (hr)	200.1	262.8	255.6	224.4	237.4	279.6	286.0
Total Delay (hr)	157.4	218.7	213.6	181.2	192.1	236.1	241.6
Total Stops	4094	4514	4221	4957	4664	4705	5074
Fuel Used (gal)	89.3	106.2	102.2	97.0	101.8	109.0	110.7

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2059	2199	2108	2137
Vehs Exited	2121	2174	2138	2136
Starting Vehs	549	526	559	533
Ending Vehs	487	551	529	534
Travel Distance (mi)	1423	1442	1405	1415
Travel Time (hr)	208.1	194.8	249.7	239.8
Total Delay (hr)	164.4	150.4	206.5	196.2
Total Stops	4557	4860	4531	4610
Fuel Used (gal)	93.7	90.3	102.4	100.3

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2251	2104	2018	2085	2046	2128	2116
Vehs Exited	2160	2107	2054	2170	2102	2056	2119
Starting Vehs	459	518	545	653	508	523	599
Ending Vehs	550	515	509	568	452	595	596
Travel Distance (mi)	1489	1411	1381	1404	1382	1349	1373
Travel Time (hr)	250.3	298.9	309.0	271.5	256.2	332.9	328.6
Total Delay (hr)	204.8	255.4	266.4	228.0	213.4	291.3	286.2
Total Stops	4970	4568	4293	5114	4142	4733	4600
Fuel Used (gal)	104.6	113.6	114.8	107.3	102.5	119.9	119.6

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2019	2114	2164	2106
Vehs Exited	2045	2191	2103	2112
Starting Vehs	487	551	529	534
Ending Vehs	461	474	590	529
Travel Distance (mi)	1364	1429	1406	1399
Travel Time (hr)	252.4	217.7	293.8	281.1
Total Delay (hr)	210.3	173.8	250.7	238.0
Total Stops	4137	4309	4901	4573
Fuel Used (gal)	101.9	95.9	111.9	109.2

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	34.0	1.8
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.3	0.3	0.0	0.0	0.0	78.8	77.7	79.8
Total Delay (hr)	1.0	2.1	1.1	1.2	1.8	1.3	12.4	3.8	0.0	3.5	13.9	0.6
Total Del/Veh (s)	76.8	99.1	26.3	43.6	52.6	35.4	322.2	18.1	11.7	76.0	32.5	28.8
Stop Delay (hr)	1.0	1.9	1.0	1.2	1.5	1.1	12.2	2.3	0.0	3.3	9.5	0.5
Stop Del/Veh (s)	71.2	90.8	24.6	40.7	45.9	31.5	317.2	11.0	8.8	70.3	22.2	22.7

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	39.6
Denied Del/Veh (s)	42.7
Total Delay (hr)	42.7
Total Del/Veh (s)	46.4
Stop Delay (hr)	35.4
Stop Del/Veh (s)	38.5

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.2	1.3	0.5	3.6	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	0.9	0.7	0.4	2.0	3.1	0.6	5.3	1.9	0.2	0.7	21.1	2.9
Total Del/Veh (s)	23.9	22.9	3.9	61.4	72.2	43.3	34.1	9.2	5.8	82.3	59.9	19.9
Stop Delay (hr)	0.8	0.6	0.0	1.9	2.8	0.6	4.3	0.6	0.1	0.6	15.7	1.4
Stop Del/Veh (s)	21.4	19.0	0.0	56.6	66.1	39.4	27.3	2.9	2.1	70.6	44.5	9.5

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.1
Total Delay (hr)	39.8
Total Del/Veh (s)	34.4
Stop Delay (hr)	29.2
Stop Del/Veh (s)	25.2

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.5	0.0	0.0	0.0	0.0	0.0	0.6
Denied Del/Veh (s)	1.6	0.2	0.0	0.1	0.0	0.0	0.4
Total Delay (hr)	7.0	0.1	3.5	0.8	2.0	7.6	21.0
Total Del/Veh (s)	20.5	0.9	10.7	9.5	29.1	19.0	16.2
Stop Delay (hr)	3.1	0.0	1.3	0.3	1.5	3.4	9.6
Stop Del/Veh (s)	9.0	0.0	4.1	3.8	21.2	8.6	7.4

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	4.0	0.1	0.1	3.4	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.5	0.2	0.0	1.6	0.5	2.1	0.9	5.6	0.1	7.6	6.7	0.5
Total Del/Veh (s)	54.9	51.9	13.4	52.5	53.7	21.1	62.9	18.3	3.2	51.7	13.5	4.9
Stop Delay (hr)	0.4	0.1	0.0	1.4	0.4	1.9	0.9	3.4	0.0	6.5	3.2	0.2
Stop Del/Veh (s)	52.9	48.8	13.4	48.5	48.5	19.2	58.9	11.2	1.7	44.3	6.4	2.0

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.1
Total Delay (hr)	26.0
Total Del/Veh (s)	21.1
Stop Delay (hr)	18.5
Stop Del/Veh (s)	15.0

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.3	0.0	0.0	0.0	0.0	0.0	1.8	7.2	2.6	0.0	0.0	0.0
Denied Del/Veh (s)	3.5	0.5	0.4	0.0	0.0	0.0	54.1	30.0	30.9	0.0	0.0	0.0
Total Delay (hr)	8.0	1.6	0.4	10.1	4.1	0.3	15.0	5.3	0.5	1.8	8.4	1.4
Total Del/Veh (s)	102.4	45.2	18.0	84.5	50.1	8.4	428.3	22.6	5.8	54.0	24.0	10.1
Stop Delay (hr)	7.5	1.3	0.4	9.2	3.4	0.2	15.0	4.5	0.4	1.5	4.0	0.6
Stop Del/Veh (s)	96.5	38.7	16.1	76.9	40.8	6.7	429.3	19.3	5.5	46.0	11.3	4.5

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	11.9
Denied Del/Veh (s)	9.6
Total Delay (hr)	56.8
Total Del/Veh (s)	45.7
Stop Delay (hr)	48.1
Stop Del/Veh (s)	38.7

6: Latrobe Rd & Driveway Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.2	0.0	5.9	0.1	0.1	2.3	8.5
Total Del/Veh (s)	32.0	7.0	16.3	9.9	15.7	4.6	9.8
Stop Delay (hr)	0.2	0.0	4.6	0.0	0.1	0.5	5.4
Stop Del/Veh (s)	30.2	6.9	12.6	6.6	13.0	1.0	6.2

7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	2.3	0.0	0.0	0.0	2.4
Denied Del/Veh (s)	0.7	0.2	0.1	0.1	0.1	8.9	7.0	11.4	0.0	0.0	2.7
Total Delay (hr)	1.7	0.1	0.1	0.1	0.0	0.6	6.6	0.1	9.6	2.3	21.2
Total Del/Veh (s)	33.8	25.2	37.6	41.8	17.7	48.3	20.5	20.9	23.7	26.0	23.8
Stop Delay (hr)	1.6	0.1	0.1	0.1	0.0	0.5	5.4	0.0	5.7	1.4	15.0
Stop Del/Veh (s)	30.4	22.8	35.6	38.3	16.9	44.9	16.7	17.8	14.1	15.9	16.8

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	1.8	2.7	2.5	0.1	0.1	0.1	3.8	0.3	0.3
Total Delay (hr)	1.9	1.3	0.0	0.8	8.6	0.5	0.7	0.0	0.0	0.7	0.1	0.7
Total Del/Veh (s)	65.6	12.0	3.0	88.8	47.0	14.9	60.0	23.5	5.0	57.3	32.9	19.9
Stop Delay (hr)	1.8	1.0	0.0	0.8	7.3	0.5	0.7	0.0	0.0	0.6	0.1	0.6
Stop Del/Veh (s)	61.9	9.0	1.5	84.3	39.7	12.9	57.6	21.6	5.0	53.9	28.4	18.2

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.7
Denied Del/Veh (s)	1.5
Total Delay (hr)	15.6
Total Del/Veh (s)	34.7
Stop Delay (hr)	13.5
Stop Del/Veh (s)	30.2

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	28.3	234.8	26.8	0.2	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	772.4	797.5	803.8	3.8	0.6	0.9	4.0	0.2	0.3
Total Delay (hr)	0.6	1.3	0.1	2.6	25.0	2.7	1.6	0.2	0.3	0.4	0.1	0.2
Total Del/Veh (s)	38.2	12.6	8.1	122.7	145.6	136.9	34.3	24.6	10.0	31.2	29.7	19.6
Stop Delay (hr)	0.6	0.7	0.1	2.6	25.2	2.8	1.5	0.2	0.3	0.3	0.1	0.2
Stop Del/Veh (s)	35.0	7.4	5.7	122.1	147.1	143.6	31.1	20.6	8.0	29.1	26.3	19.5

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	290.2
Denied Del/Veh (s)	477.5
Total Delay (hr)	35.1
Total Del/Veh (s)	76.7
Stop Delay (hr)	34.6
Stop Del/Veh (s)	75.5

Total Network Performance

Denied Delay (hr)	345.6
Denied Del/Veh (s)	132.9
Total Delay (hr)	328.7
Total Del/Veh (s)	129.9
Stop Delay (hr)	254.9
Stop Del/Veh (s)	100.7

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	TR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	153	197	170	140	295	270	521	447	193	124	342	357
Average Queue (ft)	30	110	70	56	148	216	263	161	66	107	300	322
95th Queue (ft)	114	186	131	112	258	330	652	443	149	152	378	359
Link Distance (ft)		932	932	482	482		774	774	774		309	309
Upstream Blk Time (%)							0	0			19	37
Queuing Penalty (veh)							0	0			0	0
Storage Bay Dist (ft)	150					250				100		
Storage Blk Time (%)	0	6				46	1			20	27	
Queuing Penalty (veh)	0	2				122	1			157	47	

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	L	LT	TR	L	L	T	T	TR	L	T
Maximum Queue (ft)	116	127	174	263	175	247	250	114	142	136	225	654
Average Queue (ft)	55	58	63	155	103	151	148	51	55	63	73	374
95th Queue (ft)	95	104	162	234	194	229	231	96	109	107	230	624
Link Distance (ft)	1228	1228		621		646	646	646	646	646		774
Upstream Blk Time (%)												0
Queuing Penalty (veh)												1
Storage Bay Dist (ft)			150		150						200	
Storage Blk Time (%)			0	13	1						0	53
Queuing Penalty (veh)			0	24	2						0	16

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	637	521	224
Average Queue (ft)	329	242	162
95th Queue (ft)	590	462	256
Link Distance (ft)	774	774	
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			200
Storage Blk Time (%)		5	2
Queuing Penalty (veh)		26	9

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	R	L	T	T	T	T
Maximum Queue (ft)	324	310	173	204	244	208	155	204	155	293	247
Average Queue (ft)	213	159	54	84	111	67	70	94	71	75	71
95th Queue (ft)	302	276	128	161	209	147	124	164	129	177	159
Link Distance (ft)	1211		572	572	572			646	646	646	646
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)		450				275	575				
Storage Blk Time (%)					0	0					
Queuing Penalty (veh)					0	0					

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	20	78	42	25	124	232	195	66	72	163	232	274
Average Queue (ft)	1	25	10	2	85	108	81	17	28	48	84	120
95th Queue (ft)	11	62	34	15	140	199	152	47	62	120	176	221
Link Distance (ft)			778	778		526	526			839	839	839
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					6	11				0		
Queuing Penalty (veh)					13	11				0		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	39	302	306	336	334	331	278
Average Queue (ft)	9	173	189	140	160	152	58
95th Queue (ft)	26	257	269	263	273	276	162
Link Distance (ft)	839			572	572	572	572
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		0	0	0			
Queuing Penalty (veh)		0	0	1			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	260	305	235	174	183	191	199	335	114	278	374	274
Average Queue (ft)	152	205	63	72	158	171	164	225	37	265	322	109
95th Queue (ft)	277	309	159	141	212	220	248	404	86	320	453	222
Link Distance (ft)			372	372				315	315		278	278
Upstream Blk Time (%)			0					8	0	46	77	0
Queuing Penalty (veh)			0					49	0	0	255	1
Storage Bay Dist (ft)	325	325			175	175	175			275		
Storage Blk Time (%)	0	1	0		3	17	14	1		60	77	
Queuing Penalty (veh)	0	1	0		6	36	29	4		135	120	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B25	B25	SB	SB	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	L	L	T	T	T
Maximum Queue (ft)	200	144	56	344	316	480	508	82	233	385	393	320
Average Queue (ft)	97	39	37	243	92	223	202	29	38	147	162	27
95th Queue (ft)	174	114	59	447	295	549	534	70	125	317	331	162
Link Distance (ft)	278	278		243	243	461	461			839	839	839
Upstream Blk Time (%)	0			65	3	16	5					
Queuing Penalty (veh)	0			426	19	70	21					
Storage Bay Dist (ft)			25					225	225			
Storage Blk Time (%)		2	8							3		0
Queuing Penalty (veh)		6	18							3		0

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	199
Average Queue (ft)	33
95th Queue (ft)	118
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 6: Latrobe Rd & Driveway

Movement	WB	WB	NB	NB	SB	SB	SB	B25	B25	B80	B80
Directions Served	L	R	T	TR	L	T	T	T	T	T	T
Maximum Queue (ft)	54	42	334	369	48	272	277	6	9	19	20
Average Queue (ft)	16	10	108	124	10	53	75	0	0	1	1
95th Queue (ft)	42	33	379	400	36	177	214	7	4	17	18
Link Distance (ft)	262	262	486	486		461	461	243	243	278	278
Upstream Blk Time (%)			3	4			0				
Queuing Penalty (veh)			20	26			0				
Storage Bay Dist (ft)					250						
Storage Blk Time (%)						0					
Queuing Penalty (veh)						0					

Intersection: 7: Latrobe Rd & Golden Foothill Pkwy (N)/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	SB	SB
Directions Served	L	LTR	LTR	L	T	TR	T	TR
Maximum Queue (ft)	125	225	64	137	448	469	499	505
Average Queue (ft)	35	96	26	40	173	188	302	339
95th Queue (ft)	97	173	58	107	447	460	510	534
Link Distance (ft)		660	453		739	739	486	486
Upstream Blk Time (%)					4	5	1	2
Queuing Penalty (veh)					0	0	8	16
Storage Bay Dist (ft)	100			200				
Storage Blk Time (%)	1	12			8		19	
Queuing Penalty (veh)	1	11			3		0	

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	B20	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	T	L	TR	L	TR
Maximum Queue (ft)	104	209	153	55	144	294	191	1234	95	52	74	174
Average Queue (ft)	73	58	65	9	49	266	67	1059	37	13	38	67
95th Queue (ft)	118	150	121	37	130	284	150	1484	79	36	74	135
Link Distance (ft)		315	315			198	198	1217	216	216		410
Upstream Blk Time (%)						61	0	11				
Queuing Penalty (veh)						380	2	131				
Storage Bay Dist (ft)	80			110	120						50	
Storage Blk Time (%)	21	1	1		0	64					16	21
Queuing Penalty (veh)	42	1	0		1	33					23	8

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	110	143	165	145	425	419	124	266	81	70
Average Queue (ft)	41	56	77	118	388	388	85	75	28	24
95th Queue (ft)	85	114	134	206	407	405	133	188	61	56
Link Distance (ft)		1217	1217		368	368		331		245
Upstream Blk Time (%)					93	93		1		
Queuing Penalty (veh)					0	0		0		
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)	0	0		2	96		12	1	0	0
Queuing Penalty (veh)	0	0		8	127		16	2	0	0

Network Summary

Network wide Queuing Penalty: 2494

Montano de El Dorado TIS — Near Term (2025) plus Project - MIT

SimTraffic Simulation Summary — PM Peak

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	9905	9818	9612	9700	9923	9731	9752
Vehs Exited	9801	9680	9533	9730	9886	9692	9768
Starting Vehs	479	465	492	519	505	484	489
Ending Vehs	583	603	571	489	542	523	473
Travel Distance (mi)	7112	7064	6942	7007	7213	7091	6989
Travel Time (hr)	688.3	728.2	732.4	703.0	741.1	739.9	688.9
Total Delay (hr)	472.1	513.0	520.8	489.5	521.4	524.2	475.4
Total Stops	19453	19815	17895	19479	21519	19801	19238
Fuel Used (gal)	381.3	388.2	386.2	382.6	396.5	391.7	378.2

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	9681	9642	9916	9767
Vehs Exited	9581	9640	9754	9706
Starting Vehs	459	567	491	489
Ending Vehs	559	569	653	553
Travel Distance (mi)	6995	6997	7127	7054
Travel Time (hr)	758.9	716.2	719.1	721.6
Total Delay (hr)	546.2	503.3	502.5	506.8
Total Stops	19469	19304	20792	19673
Fuel Used (gal)	393.5	383.2	388.9	387.0

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2481	2452	2441	2362	2482	2331	2425
Vehs Exited	2403	2323	2368	2403	2455	2338	2392
Starting Vehs	479	465	492	519	505	484	489
Ending Vehs	557	594	565	478	532	477	522
Travel Distance (mi)	1769	1731	1764	1718	1809	1697	1739
Travel Time (hr)	148.6	139.0	149.1	136.4	138.8	133.5	137.0
Total Delay (hr)	95.0	86.3	95.2	84.1	83.7	81.8	84.2
Total Stops	4793	4527	4668	4537	5094	4283	4551
Fuel Used (gal)	89.7	86.1	89.4	85.6	88.5	84.2	85.9

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2379	2334	2450	2414
Vehs Exited	2356	2389	2434	2385
Starting Vehs	459	567	491	489
Ending Vehs	482	512	507	520
Travel Distance (mi)	1727	1720	1765	1744
Travel Time (hr)	143.8	137.9	135.8	140.0
Total Delay (hr)	91.3	85.5	82.0	86.9
Total Stops	4260	4515	4543	4583
Fuel Used (gal)	87.4	85.8	87.3	87.0

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2555	2535	2507	2614	2586	2557	2506
Vehs Exited	2561	2486	2540	2493	2485	2444	2497
Starting Vehs	557	594	565	478	532	477	522
Ending Vehs	551	643	532	599	633	590	531
Travel Distance (mi)	1845	1823	1809	1818	1862	1826	1802
Travel Time (hr)	175.7	188.1	178.5	164.0	180.6	184.6	164.9
Total Delay (hr)	119.5	132.7	123.6	108.7	124.2	129.5	110.1
Total Stops	5201	5283	4866	5127	5626	5399	5085
Fuel Used (gal)	98.1	100.1	97.9	94.9	100.0	99.8	94.9

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2571	2536	2579	2554
Vehs Exited	2404	2468	2461	2486
Starting Vehs	482	512	507	520
Ending Vehs	649	580	625	591
Travel Distance (mi)	1820	1801	1821	1823
Travel Time (hr)	186.4	166.5	170.8	176.0
Total Delay (hr)	131.5	111.7	115.6	120.7
Total Stops	5255	4904	5436	5216
Fuel Used (gal)	100.1	94.3	96.0	97.6

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2394	2441	2204	2417	2508	2465	2459
Vehs Exited	2397	2502	2316	2426	2498	2484	2388
Starting Vehs	551	643	532	599	633	590	531
Ending Vehs	548	582	420	590	643	571	602
Travel Distance (mi)	1723	1803	1645	1751	1789	1802	1730
Travel Time (hr)	173.4	202.7	186.5	193.1	201.9	205.5	190.8
Total Delay (hr)	120.8	147.8	136.2	139.7	147.4	150.3	137.6
Total Stops	4655	5306	3929	5134	5413	5093	5010
Fuel Used (gal)	93.8	102.8	94.7	99.5	102.2	103.5	97.8

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2376	2371	2449	2404
Vehs Exited	2448	2387	2539	2438
Starting Vehs	649	580	625	591
Ending Vehs	577	564	535	559
Travel Distance (mi)	1745	1721	1819	1753
Travel Time (hr)	208.7	194.5	194.7	195.2
Total Delay (hr)	155.3	142.1	139.1	141.6
Total Stops	5154	4838	5418	4995
Fuel Used (gal)	102.1	98.5	102.0	99.7

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2475	2390	2460	2307	2347	2378	2362
Vehs Exited	2440	2369	2309	2408	2448	2426	2491
Starting Vehs	548	582	420	590	643	571	602
Ending Vehs	583	603	571	489	542	523	473
Travel Distance (mi)	1775	1706	1724	1720	1753	1766	1718
Travel Time (hr)	190.6	198.5	218.3	209.5	219.8	216.3	196.2
Total Delay (hr)	136.8	146.3	165.8	157.0	166.2	162.7	143.4
Total Stops	4804	4699	4432	4681	5386	5026	4592
Fuel Used (gal)	99.7	99.2	104.2	102.5	105.7	104.1	99.5

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2355	2401	2438	2390
Vehs Exited	2373	2396	2320	2398
Starting Vehs	577	564	535	559
Ending Vehs	559	569	653	553
Travel Distance (mi)	1703	1754	1722	1734
Travel Time (hr)	220.0	217.2	217.8	210.4
Total Delay (hr)	168.0	164.0	165.7	157.6
Total Stops	4800	5047	5395	4886
Fuel Used (gal)	103.9	104.6	103.6	102.7

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0
Denied Del/Veh (s)	1.5	0.3	0.2	1.4	0.8	1.4	0.0	0.0	0.0	1.5	0.3	1.3
Total Delay (hr)	1.6	2.0	0.6	1.7	0.6	1.1	1.7	9.2	0.1	3.1	5.8	0.0
Total Del/Veh (s)	33.1	34.9	9.8	34.3	34.3	12.4	44.5	26.7	9.1	53.9	23.1	4.4
Stop Delay (hr)	1.3	1.6	0.5	1.5	0.5	0.9	1.5	6.4	0.1	2.7	3.6	0.0
Stop Del/Veh (s)	28.2	27.5	8.0	30.1	29.5	10.2	39.4	18.4	5.9	45.8	14.4	2.9

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.5
Total Delay (hr)	27.7
Total Del/Veh (s)	26.5
Stop Delay (hr)	20.6
Stop Del/Veh (s)	19.8

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.7	0.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	2.0	2.7	0.1	3.3	3.1	0.7	23.4	4.2	0.6	0.5	14.5	0.3
Total Del/Veh (s)	65.8	91.2	3.3	63.4	66.2	58.5	75.7	11.7	6.7	92.8	47.5	5.6
Stop Delay (hr)	1.9	2.5	0.0	3.0	2.8	0.6	19.1	1.9	0.2	0.5	12.0	0.2
Stop Del/Veh (s)	62.6	85.7	0.0	58.1	59.8	54.8	61.9	5.3	1.9	88.9	39.4	4.1

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	55.2
Total Del/Veh (s)	42.2
Stop Delay (hr)	44.7
Stop Del/Veh (s)	34.2

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.2	0.1	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.9	0.4	0.0	0.0	0.0	0.0	0.2
Total Delay (hr)	5.3	0.1	7.6	1.0	1.9	5.0	20.9
Total Del/Veh (s)	29.4	1.0	12.7	6.1	31.1	15.7	14.2
Stop Delay (hr)	4.2	0.0	3.1	0.1	1.4	2.1	10.9
Stop Del/Veh (s)	23.3	0.0	5.2	0.5	22.9	6.7	7.4

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.0	0.0	9.6	1.1	88.3	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.0	0.1	0.2	469.1	386.8	438.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	6.0	0.6	0.3	2.1	0.3	33.9	0.1	17.2	0.3	20.4	5.6	0.0
Total Del/Veh (s)	55.8	49.5	17.5	136.2	142.4	213.6	91.7	33.4	6.9	115.8	18.1	1.4
Stop Delay (hr)	5.5	0.5	0.3	2.0	0.3	33.8	0.0	9.1	0.2	18.2	3.8	0.0
Stop Del/Veh (s)	50.8	46.0	16.5	130.8	135.4	212.7	79.3	17.7	4.3	103.6	12.3	0.6

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	99.2
Denied Del/Veh (s)	70.7
Total Delay (hr)	86.8
Total Del/Veh (s)	63.2
Stop Delay (hr)	73.8
Stop Del/Veh (s)	53.7

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.1	0.4	0.3	0.0	0.0	0.0	0.2	0.1	0.4	0.0	0.0	0.0
Total Delay (hr)	10.1	7.8	1.1	7.2	3.5	0.8	2.6	13.7	3.6	5.8	8.4	0.5
Total Del/Veh (s)	76.2	50.7	40.0	75.2	41.6	12.0	88.7	37.8	29.7	83.1	39.9	8.5
Stop Delay (hr)	8.9	6.1	0.9	6.7	3.0	0.6	2.5	11.7	3.3	5.3	6.3	0.3
Stop Del/Veh (s)	67.5	39.8	33.7	69.7	35.9	9.2	85.2	32.4	27.1	75.7	30.0	4.6

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.2
Total Delay (hr)	65.0
Total Del/Veh (s)	46.0
Stop Delay (hr)	55.6
Stop Del/Veh (s)	39.3

6: Latrobe Rd/Latrobe Dr Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	0.5	0.2	4.7	0.1	0.6	1.1	7.2
Total Del/Veh (s)	22.5	10.3	9.7	10.2	25.1	3.5	8.4
Stop Delay (hr)	0.5	0.2	2.5	0.1	0.5	0.4	4.1
Stop Del/Veh (s)	19.8	9.7	5.1	5.9	22.5	1.3	4.8

7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.6	0.4	0.3	0.1	0.1	0.1	2.2	0.3	0.4	0.0	0.0	0.0
Total Delay (hr)	4.8	0.1	0.3	0.2	0.2	0.1	0.2	5.0	0.0	0.4	4.0	0.5
Total Del/Veh (s)	53.2	54.5	44.9	74.2	78.6	30.3	80.5	12.3	10.7	73.7	13.9	13.2
Stop Delay (hr)	4.3	0.1	0.2	0.2	0.2	0.1	0.2	3.6	0.0	0.4	2.9	0.3
Stop Del/Veh (s)	47.9	47.3	40.3	71.7	74.5	29.1	77.4	8.9	8.3	71.0	10.1	9.6

7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.2
Total Delay (hr)	15.7
Total Del/Veh (s)	18.6
Stop Delay (hr)	12.5
Stop Del/Veh (s)	14.9

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	28.5	4.0	35.3
Denied Del/Veh (s)	0.3	0.2	0.3	1.7	0.4	0.3	0.1	0.1	0.2	567.0	555.1	578.4
Total Delay (hr)	4.5	6.4	0.1	1.4	8.4	1.9	1.1	0.3	0.4	10.3	1.0	8.8
Total Del/Veh (s)	61.5	23.9	10.7	73.3	46.0	39.8	65.8	46.7	18.9	269.1	188.7	185.5
Stop Delay (hr)	4.1	4.6	0.0	1.3	6.3	1.5	1.1	0.3	0.3	10.0	0.9	8.4
Stop Del/Veh (s)	55.8	17.2	6.7	65.7	34.6	31.6	62.6	42.7	18.0	261.0	178.5	178.3

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	68.1
Denied Del/Veh (s)	90.7
Total Delay (hr)	44.7
Total Del/Veh (s)	61.0
Stop Delay (hr)	39.0
Stop Del/Veh (s)	53.3

Total Network Performance

Denied Delay (hr)	168.5
Denied Del/Veh (s)	60.1
Total Delay (hr)	338.4
Total Del/Veh (s)	118.7
Stop Delay (hr)	263.7
Stop Del/Veh (s)	92.5

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (ft)	83	172	230	138	190	136	174	240	296	296	310	239
Average Queue (ft)	35	74	113	62	98	37	81	101	162	179	180	30
95th Queue (ft)	69	140	194	108	166	86	143	186	255	265	271	110
Link Distance (ft)			1241	1241		1429			468	468	468	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)		0	3		0		0	0	1		2	0
Queuing Penalty (veh)		0	6		1		0	1	1		1	0

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	B46	B46	B46	SB	SB	SB	SB	SB
Directions Served	T	T	T	L	T	T	T	R
Maximum Queue (ft)	5	2	5	124	351	299	229	32
Average Queue (ft)	0	0	0	113	187	118	76	7
95th Queue (ft)	5	2	5	146	319	235	171	23
Link Distance (ft)	229	229	229		1017	1017	1017	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)				100				200
Storage Blk Time (%)				24	15		0	
Queuing Penalty (veh)				73	31		0	

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	L	L	T	R	L	L	T	T	T	TR
Maximum Queue (ft)	151	234	144	174	398	175	568	649	576	465	404	291
Average Queue (ft)	72	122	72	107	170	49	430	440	284	138	125	59
95th Queue (ft)	128	205	130	192	327	131	611	658	651	339	277	179
Link Distance (ft)	1240	1240			1644			628	628	628	628	628
Upstream Blk Time (%)								4	3	0		
Queuing Penalty (veh)								19	17	0		
Storage Bay Dist (ft)			150	150		150	550					
Storage Blk Time (%)			0	1	14	0	4	6				
Queuing Penalty (veh)			0	2	30	0	25	34				

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB	SB	SB	B46	B46	B46	B46
Directions Served	L	T	T	TR	R	T	T	T	T
Maximum Queue (ft)	207	314	294	289	250	215	186	90	7
Average Queue (ft)	28	266	204	172	62	52	22	4	0
95th Queue (ft)	136	350	298	273	181	172	111	32	5
Link Distance (ft)		229	229	229	229	468	468	468	468
Upstream Blk Time (%)	0	27	6	3	1				
Queuing Penalty (veh)	0	89	20	10	2				
Storage Bay Dist (ft)	200								
Storage Blk Time (%)		35							
Queuing Penalty (veh)		7							

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	312	244	200	470	410	397	187	118	109	396	262	134
Average Queue (ft)	141	96	137	140	80	92	19	49	32	150	50	22
95th Queue (ft)	333	265	236	359	264	252	119	101	77	381	226	128
Link Distance (ft)	1203			557	557	557	557			628	628	628
Upstream Blk Time (%)				1	1	0				0		
Queuing Penalty (veh)				9	6	1				0		
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)	2	1	7	2						0		
Queuing Penalty (veh)	5	2	40	13						0		

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	96
Average Queue (ft)	9
95th Queue (ft)	76
Link Distance (ft)	628
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	LT	R	R	L	T	T	T	R
Maximum Queue (ft)	240	270	63	110	592	604	594	24	564	555	535	315
Average Queue (ft)	139	158	21	45	535	577	550	2	260	255	280	42
95th Queue (ft)	216	239	52	90	749	606	621	14	478	485	504	165
Link Distance (ft)			1636	1636	562	562	562		838	838	838	838
Upstream Blk Time (%)					46	92	17		0			
Queuing Penalty (veh)					0	0	0		0			
Storage Bay Dist (ft)	350	350						225				
Storage Blk Time (%)									10			
Queuing Penalty (veh)									0			

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R
Maximum Queue (ft)	332	350	620	490	400	70
Average Queue (ft)	273	295	407	187	122	4
95th Queue (ft)	370	404	719	440	281	38
Link Distance (ft)			557	557	557	557
Upstream Blk Time (%)			12	0	0	
Queuing Penalty (veh)			53	1	0	
Storage Bay Dist (ft)	325	325				
Storage Blk Time (%)	3	10	18			
Queuing Penalty (veh)	12	38	112			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	314	326	356	338	186	199	271	187	146	255	326	317
Average Queue (ft)	183	206	212	212	137	151	80	75	57	98	192	189
95th Queue (ft)	316	335	344	309	204	214	204	146	118	202	299	294
Link Distance (ft)			1586	1586			310	310	310		267	267
Upstream Blk Time (%)							1	0		0	2	2
Queuing Penalty (veh)							2	0		0	9	7
Storage Bay Dist (ft)	400	400			175	175				270		
Storage Blk Time (%)	0	1	0		2	11	0			0	2	
Queuing Penalty (veh)	1	3	1		3	15	1			0	2	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B80	B25	B25	B25	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	T	T	L	L	T
Maximum Queue (ft)	300	343	63	81	123	202	2	21	64	184	202	230
Average Queue (ft)	190	216	49	4	9	26	0	1	3	95	100	117
95th Queue (ft)	291	359	60	44	77	136	2	18	48	170	182	207
Link Distance (ft)	267	267		242	242	242	475	475	475			838
Upstream Blk Time (%)	1	10			0	1						
Queuing Penalty (veh)	5	46			0	5						
Storage Bay Dist (ft)			25							225	225	
Storage Blk Time (%)		23	30							0	0	0
Queuing Penalty (veh)		100	95							0	0	1

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	225	233	150
Average Queue (ft)	128	136	17
95th Queue (ft)	211	214	86
Link Distance (ft)	838	838	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			250
Storage Blk Time (%)		0	0
Queuing Penalty (veh)		0	0

Intersection: 6: Latrobe Rd/Latrobe Dr

Movement	WB	WB	NB	NB	NB	SB	SB	SB	SB	B25	B80
Directions Served	L	R	T	T	TR	L	T	T	T	T	T
Maximum Queue (ft)	101	88	264	275	331	110	146	157	167	5	4
Average Queue (ft)	50	35	108	127	172	53	35	46	62	0	0
95th Queue (ft)	90	68	216	247	309	97	107	121	139	3	4
Link Distance (ft)	431	431	336	336	336		475	475	475	242	267
Upstream Blk Time (%)			0	0	0						
Queuing Penalty (veh)			0	0	1						
Storage Bay Dist (ft)						200					
Storage Blk Time (%)							0				
Queuing Penalty (veh)							0				

Intersection: 7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	125	429	85	68	281	327	338	98	266	300	319
Average Queue (ft)	91	211	31	12	131	134	165	21	118	135	152
95th Queue (ft)	154	365	71	46	239	260	297	68	245	267	290
Link Distance (ft)		670	530		581	581	581		336	336	336
Upstream Blk Time (%)									0	0	0
Queuing Penalty (veh)									0	0	1
Storage Bay Dist (ft)	100			200				195			
Storage Blk Time (%)	5	36			2				2		
Queuing Penalty (veh)	10	60			0				0		

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	104	350	370	123	145	426	425	128	140	75	539
Average Queue (ft)	101	268	254	13	81	249	271	53	46	73	507
95th Queue (ft)	116	375	387	71	158	377	390	106	103	80	538
Link Distance (ft)		310	310			692	692	520	520		491
Upstream Blk Time (%)		9	5								88
Queuing Penalty (veh)		52	31								0
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	46	14	27	0	2	36				86	11
Queuing Penalty (veh)	222	36	6	0	7	26				205	20

Network Summary

Network wide Queuing Penalty: 1640

Montano de El Dorado — Cumulative (2035) plus Project Conditions - MIT

SimTraffic Simulation Summary — AM Peak

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	10405	10266	10496	10236	10512	10475	10464
Vehs Exited	10428	10196	10423	9849	10199	10413	10356
Starting Vehs	580	498	558	545	530	509	505
Ending Vehs	557	568	631	932	843	571	613
Travel Distance (mi)	8771	8640	8820	8418	8654	8855	8787
Travel Time (hr)	682.2	672.1	672.0	710.6	747.0	645.8	637.2
Total Delay (hr)	416.2	409.3	404.2	455.4	484.2	376.7	370.3
Total Stops	23929	22843	23634	23725	24177	22864	22575
Fuel Used (gal)	416.3	412.1	416.4	412.5	428.6	411.8	407.4

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	10307	10414	10544	10410
Vehs Exited	9911	10221	10399	10236
Starting Vehs	484	490	533	524
Ending Vehs	880	683	678	691
Travel Distance (mi)	8495	8765	8837	8704
Travel Time (hr)	776.2	640.5	765.0	694.9
Total Delay (hr)	518.9	374.7	496.6	430.7
Total Stops	26191	23018	26004	23897
Fuel Used (gal)	428.5	408.3	437.9	418.0

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2589	2612	2622	2524	2592	2634	2576
Vehs Exited	2508	2507	2538	2516	2475	2538	2494
Starting Vehs	580	498	558	545	530	509	505
Ending Vehs	661	603	642	553	647	605	587
Travel Distance (mi)	2167	2167	2199	2137	2122	2179	2168
Travel Time (hr)	160.3	145.2	149.6	132.0	145.7	142.7	133.5
Total Delay (hr)	94.5	79.2	82.8	67.3	81.1	76.3	68.0
Total Stops	5898	5585	5693	4901	5169	5379	4998
Fuel Used (gal)	100.1	97.7	99.4	94.5	96.1	97.1	95.1

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2539	2499	2659	2584
Vehs Exited	2437	2487	2618	2514
Starting Vehs	484	490	533	524
Ending Vehs	586	502	574	594
Travel Distance (mi)	2121	2132	2220	2161
Travel Time (hr)	147.8	133.3	145.6	143.6
Total Delay (hr)	83.5	68.6	78.4	78.0
Total Stops	5425	5035	5592	5369
Fuel Used (gal)	96.4	94.7	99.4	97.1

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2771	2648	2741	2742	2690	2761	2728
Vehs Exited	2702	2538	2703	2522	2499	2656	2600
Starting Vehs	661	603	642	553	647	605	587
Ending Vehs	730	713	680	773	838	710	715
Travel Distance (mi)	2238	2193	2289	2175	2165	2308	2238
Travel Time (hr)	174.2	180.6	160.1	152.5	185.7	168.5	159.2
Total Delay (hr)	106.2	113.9	90.4	86.3	120.1	98.5	91.4
Total Stops	6673	6260	5845	5718	6175	6280	5892
Fuel Used (gal)	105.4	106.6	104.7	98.8	106.3	107.8	103.2

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2790	2772	2705	2736
Vehs Exited	2554	2625	2452	2587
Starting Vehs	586	502	574	594
Ending Vehs	822	649	827	745
Travel Distance (mi)	2202	2293	2142	2224
Travel Time (hr)	194.8	157.8	201.8	173.5
Total Delay (hr)	128.1	88.4	136.7	106.0
Total Stops	6914	6007	6809	6255
Fuel Used (gal)	109.3	104.1	109.4	105.6

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2501	2505	2556	2576	2603	2546	2591
Vehs Exited	2613	2499	2478	2618	2707	2674	2681
Starting Vehs	730	713	680	773	838	710	715
Ending Vehs	618	719	758	731	734	582	625
Travel Distance (mi)	2199	2132	2084	2206	2205	2233	2199
Travel Time (hr)	179.4	181.7	174.8	195.5	200.1	167.3	168.7
Total Delay (hr)	112.7	117.0	111.5	128.8	133.1	99.3	101.6
Total Stops	5869	5674	5872	6891	6436	5715	5776
Fuel Used (gal)	107.1	105.4	102.2	110.1	111.9	104.6	104.1

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2531	2614	2574	2559
Vehs Exited	2507	2592	2644	2601
Starting Vehs	822	649	827	745
Ending Vehs	846	671	757	699
Travel Distance (mi)	2130	2201	2265	2185
Travel Time (hr)	199.8	166.8	209.2	184.3
Total Delay (hr)	135.2	99.8	140.4	117.9
Total Stops	6861	5811	7108	6206
Fuel Used (gal)	108.4	103.5	116.0	107.3

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2544	2501	2577	2394	2627	2534	2569
Vehs Exited	2605	2652	2704	2193	2518	2545	2581
Starting Vehs	618	719	758	731	734	582	625
Ending Vehs	557	568	631	932	843	571	613
Travel Distance (mi)	2167	2148	2249	1899	2161	2135	2181
Travel Time (hr)	168.2	164.6	187.5	230.6	215.5	167.3	175.8
Total Delay (hr)	102.8	99.2	119.4	173.0	150.0	102.5	109.2
Total Stops	5489	5324	6224	6215	6397	5490	5909
Fuel Used (gal)	103.6	102.5	110.0	109.2	114.3	102.4	105.0

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2447	2529	2606	2530
Vehs Exited	2413	2517	2685	2542
Starting Vehs	846	671	757	699
Ending Vehs	880	683	678	691
Travel Distance (mi)	2042	2139	2211	2133
Travel Time (hr)	233.8	182.5	208.4	193.4
Total Delay (hr)	172.1	117.8	141.1	128.7
Total Stops	6991	6165	6495	6067
Fuel Used (gal)	114.4	106.0	113.2	108.0

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.0
Denied Del/Veh (s)	1.8	0.3	0.2	1.4	0.6	1.4	0.0	0.0	0.0	1.4	0.4	1.0
Total Delay (hr)	0.8	1.3	0.6	1.5	1.5	0.4	3.2	3.7	0.0	3.3	11.2	0.3
Total Del/Veh (s)	39.5	38.7	13.5	33.1	27.7	8.9	66.0	17.1	6.5	61.6	25.5	9.2
Stop Delay (hr)	0.7	1.1	0.5	1.3	1.2	0.3	3.0	2.5	0.0	2.8	6.2	0.2
Stop Del/Veh (s)	35.2	32.2	11.8	29.0	22.6	7.0	61.4	11.4	4.7	51.5	14.2	5.1

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.5
Total Delay (hr)	27.9
Total Del/Veh (s)	26.7
Stop Delay (hr)	19.9
Stop Del/Veh (s)	19.0

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	0.7	0.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.1	2.0	0.2	1.4	3.2	0.5	16.8	2.6	0.2	0.1	11.2	0.4
Total Del/Veh (s)	36.5	54.0	3.6	40.3	52.5	39.7	103.5	11.4	5.2	44.6	26.8	3.9
Stop Delay (hr)	1.0	1.8	0.0	1.2	2.8	0.4	15.3	1.0	0.1	0.1	7.9	0.2
Stop Del/Veh (s)	33.8	48.9	0.0	35.1	46.2	36.2	94.4	4.3	1.1	41.7	18.9	1.9

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	39.6
Total Del/Veh (s)	33.3
Stop Delay (hr)	31.8
Stop Del/Veh (s)	26.7

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	4.7	0.0	0.0	0.0	0.0	0.0	4.7
Denied Del/Veh (s)	13.2	0.2	0.0	0.0	0.0	0.0	3.3
Total Delay (hr)	12.7	0.0	3.9	0.7	1.4	7.9	26.6
Total Del/Veh (s)	36.2	0.5	10.4	5.8	17.4	17.8	18.7
Stop Delay (hr)	8.4	0.0	1.3	0.0	0.9	3.5	14.1
Stop Del/Veh (s)	24.0	0.0	3.5	0.2	10.7	8.0	9.9

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.1	0.9	0.9	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.6	0.1	0.1	21.2	7.0	2.0	0.9	12.6	0.2	7.5	19.3	2.4
Total Del/Veh (s)	40.5	40.4	23.6	557.2	558.3	17.8	62.7	34.8	8.6	45.9	38.0	20.5
Stop Delay (hr)	0.6	0.1	0.1	21.3	7.0	1.6	0.7	7.8	0.2	6.1	13.5	1.7
Stop Del/Veh (s)	38.4	37.3	23.4	559.7	559.8	14.3	52.7	21.5	6.2	37.4	26.6	14.9

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.1
Total Delay (hr)	73.9
Total Del/Veh (s)	53.6
Stop Delay (hr)	60.8
Stop Del/Veh (s)	44.1

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.6	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	12.9	3.4	1.3	10.0	6.5	0.5	10.7	12.0	1.5	4.5	29.5	22.5
Total Del/Veh (s)	149.2	76.6	45.3	51.1	40.2	10.9	197.8	43.1	17.4	124.0	90.3	126.1
Stop Delay (hr)	12.1	3.0	1.2	8.7	5.2	0.4	10.4	10.7	1.2	4.0	22.6	19.9
Stop Del/Veh (s)	140.1	67.3	41.0	44.5	32.1	8.8	192.4	38.3	14.9	109.6	69.1	111.8

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.1
Total Delay (hr)	115.4
Total Del/Veh (s)	75.9
Stop Delay (hr)	99.5
Stop Del/Veh (s)	65.5

6: Latrobe Rd/Latrobe Dr Performance by movement

Movement	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.1	0.3	0.1	0.0	0.0	0.1
Total Delay (hr)	0.2	1.6	0.0	0.1	0.8	2.7
Total Del/Veh (s)	33.5	3.9	2.2	14.6	1.5	2.8
Stop Delay (hr)	0.2	0.9	0.0	0.1	0.0	1.2
Stop Del/Veh (s)	33.2	2.2	0.4	12.5	0.0	1.2

7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.7	0.2	0.3	0.1	0.2	0.1	1.7	0.2	0.2	0.1	0.0	0.1
Total Delay (hr)	3.2	0.2	0.2	0.2	0.2	0.0	0.7	2.4	0.0	0.2	6.9	1.6
Total Del/Veh (s)	52.7	53.0	42.7	63.6	61.4	12.7	67.0	8.3	5.5	68.6	15.3	15.8
Stop Delay (hr)	2.9	0.1	0.2	0.2	0.2	0.0	0.7	1.6	0.0	0.2	4.2	0.9
Stop Del/Veh (s)	48.4	47.8	39.6	61.3	57.2	11.9	63.4	5.6	3.8	65.0	9.3	8.8

7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	15.8
Total Del/Veh (s)	16.9
Stop Delay (hr)	11.3
Stop Del/Veh (s)	12.0

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.5	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	3.4	0.3	0.3
Total Delay (hr)	3.6	2.7	0.1	1.1	16.4	1.7	1.4	0.2	0.1	0.7	0.2	1.5
Total Del/Veh (s)	88.2	23.4	6.4	81.0	47.9	30.9	99.0	46.9	9.4	60.2	49.1	34.5
Stop Delay (hr)	3.4	2.0	0.0	0.9	9.4	0.9	1.3	0.2	0.1	0.7	0.2	1.4
Stop Del/Veh (s)	83.2	17.9	3.6	62.9	27.6	16.4	95.9	43.7	9.2	56.4	44.0	32.6

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	29.5
Total Del/Veh (s)	44.7
Stop Delay (hr)	20.5
Stop Del/Veh (s)	31.0

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	2.5	15.6	2.0	0.2	0.0	0.0	0.1	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	44.7	43.7	44.6	3.6	0.7	0.7	3.9	0.4	0.3
Total Delay (hr)	1.0	3.1	0.4	6.5	29.8	3.4	1.7	0.4	0.5	0.5	0.2	0.2
Total Del/Veh (s)	56.9	31.1	21.9	117.6	84.6	74.4	34.2	33.8	12.7	28.2	27.5	15.1
Stop Delay (hr)	0.9	2.2	0.3	5.5	21.8	2.5	1.5	0.3	0.4	0.5	0.1	0.2
Stop Del/Veh (s)	50.4	21.4	15.4	99.2	61.9	56.3	30.2	28.8	10.3	25.9	24.4	14.2

13: Valley View Pkwy/Vine St & White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	20.4
Denied Del/Veh (s)	28.1
Total Delay (hr)	47.6
Total Del/Veh (s)	65.6
Stop Delay (hr)	36.2
Stop Del/Veh (s)	49.8

Total Network Performance

Denied Delay (hr)	26.3
Denied Del/Veh (s)	9.0
Total Delay (hr)	404.3
Total Del/Veh (s)	133.2
Stop Delay (hr)	304.7
Stop Del/Veh (s)	100.4

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (ft)	44	97	158	129	172	183	105	244	248	202	204	33
Average Queue (ft)	12	41	73	60	87	91	41	133	83	97	105	6
95th Queue (ft)	37	78	132	106	150	154	80	232	187	178	187	26
Link Distance (ft)			1180	1180		1429			469	469	469	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)			1		0	0		2			0	
Queuing Penalty (veh)			1		1	0		6			0	

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (ft)	124	426	357	324	178
Average Queue (ft)	112	240	188	164	36
95th Queue (ft)	149	374	300	274	109
Link Distance (ft)		1017	1017	1017	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100				200
Storage Blk Time (%)	25	25		1	0
Queuing Penalty (veh)	130	48		2	0

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	L	L	T	R	L	L	T	T	T	TR
Maximum Queue (ft)	112	200	88	168	367	165	439	448	398	290	210	93
Average Queue (ft)	50	102	30	74	156	46	285	287	131	68	70	26
95th Queue (ft)	91	173	69	161	298	128	471	480	380	180	145	70
Link Distance (ft)	1070	1070			1644			626	626	626	626	626
Upstream Blk Time (%)									0			
Queuing Penalty (veh)									0			
Storage Bay Dist (ft)			150	150		150	550					
Storage Blk Time (%)				0	12	0	0	1				
Queuing Penalty (veh)				0	18	0	0	2				

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB	SB	SB	B46	B46	B46	B46
Directions Served	L	T	T	TR	R	T	T	T	T
Maximum Queue (ft)	72	289	264	284	234	34	35	82	13
Average Queue (ft)	6	181	159	166	72	3	1	4	0
95th Queue (ft)	52	295	267	276	203	32	16	47	7
Link Distance (ft)		229	229	229	229	469	469	469	469
Upstream Blk Time (%)	0	5	2	3	0				
Queuing Penalty (veh)	0	22	8	13	2				
Storage Bay Dist (ft)	200								
Storage Blk Time (%)		9							
Queuing Penalty (veh)		1							

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	600	383	199	334	190	202	66	103	155	289	327	365
Average Queue (ft)	282	232	80	65	42	63	2	41	40	75	62	80
95th Queue (ft)	747	399	175	199	123	144	31	85	83	226	221	230
Link Distance (ft)	1203			556	556	556	556			626	626	626
Upstream Blk Time (%)	4			0						0	0	0
Queuing Penalty (veh)	0			0						0	0	0
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)	4	3	2	1						0		
Queuing Penalty (veh)	23	20	5	2						0		

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	262
Average Queue (ft)	61
95th Queue (ft)	186
Link Distance (ft)	626
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	LT	R	R	L	L	T	T	T
Maximum Queue (ft)	57	67	34	40	1150	1016	647	56	229	536	514	526
Average Queue (ft)	16	29	7	10	688	331	118	18	44	214	206	232
95th Queue (ft)	46	61	26	32	1225	1028	540	48	158	434	434	458
Link Distance (ft)			2013	2013	1390	1390	1390			837	837	837
Upstream Blk Time (%)					2	2	0					
Queuing Penalty (veh)					0	0	0					
Storage Bay Dist (ft)	350	350						225	225			
Storage Blk Time (%)									0	10		
Queuing Penalty (veh)									0	5		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	289	300	329	531	535	574	572
Average Queue (ft)	35	158	199	265	292	320	249
95th Queue (ft)	146	256	334	545	573	602	621
Link Distance (ft)	837			556	556	556	556
Upstream Blk Time (%)				2	2	5	7
Queuing Penalty (veh)				13	15	37	47
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		0	0	5			
Queuing Penalty (veh)		0	2	32			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	305	324	438	343	187	200	337	326	120	271	354	348
Average Queue (ft)	169	197	191	135	168	187	285	196	50	226	267	159
95th Queue (ft)	326	348	611	367	233	254	420	338	100	327	429	300
Link Distance (ft)			1341	1341			311	311	311		271	271
Upstream Blk Time (%)							16	1		27	44	4
Queuing Penalty (veh)							79	4		0	166	14
Storage Bay Dist (ft)	325	325			175	175				270		
Storage Blk Time (%)	1	13	0		8	32	9			28	44	
Queuing Penalty (veh)	1	10	1		22	91	63			68	91	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B80	B25	B25	B25	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	T	T	L	L	T
Maximum Queue (ft)	321	335	63	316	298	290	270	227	184	221	250	850
Average Queue (ft)	148	140	45	146	96	65	88	57	28	64	153	504
95th Queue (ft)	272	302	63	386	300	245	359	280	183	154	296	940
Link Distance (ft)	271	271		242	242	242	485	485	485			837
Upstream Blk Time (%)	3	6		27	8	2	7	1	0			2
Queuing Penalty (veh)	11	24		132	37	11	33	4	0			14
Storage Bay Dist (ft)			25							225	225	
Storage Blk Time (%)		26	7							0	1	29
Queuing Penalty (veh)		78	16							0	3	37

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	873	864	275
Average Queue (ft)	608	669	266
95th Queue (ft)	1025	1066	324
Link Distance (ft)	837	837	
Upstream Blk Time (%)	4	14	
Queuing Penalty (veh)	24	90	
Storage Bay Dist (ft)			250
Storage Blk Time (%)		26	58
Queuing Penalty (veh)		167	227

Intersection: 6: Latrobe Rd/Latrobe Dr

Movement	WB	NB	NB	NB	SB	SB	SB	B25	B25	B80	B80	B80
Directions Served	R	T	T	TR	L	T	T	T	T	T	T	T
Maximum Queue (ft)	60	126	114	113	46	5	26	11	12	20	24	5
Average Queue (ft)	18	23	19	12	11	0	1	0	0	1	1	0
95th Queue (ft)	62	158	135	110	37	6	13	5	7	20	22	5
Link Distance (ft)	262	488	488	488		485	485	242	242	271	271	271
Upstream Blk Time (%)		0	0	0								
Queuing Penalty (veh)		1	1	1								
Storage Bay Dist (ft)					200							
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	125	293	86	98	188	198	217	98	427	453	472
Average Queue (ft)	80	132	30	40	77	80	99	14	203	221	245
95th Queue (ft)	145	228	66	86	143	157	192	62	407	435	472
Link Distance (ft)		1299	1059		1680	1680	1680		488	488	488
Upstream Blk Time (%)										0	0
Queuing Penalty (veh)										0	1
Storage Bay Dist (ft)	100			200				195			
Storage Blk Time (%)	2	23			0				8		
Queuing Penalty (veh)	3	24			0				1		

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	104	303	305	126	145	756	598	126	69	75	276
Average Queue (ft)	91	151	121	24	51	404	292	52	20	40	108
95th Queue (ft)	123	295	240	85	135	727	542	110	50	82	211
Link Distance (ft)		311	311			1512	1512	619	619		554
Upstream Blk Time (%)		1	0								
Queuing Penalty (veh)		4	1								
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	42	7	7	0	0	43				15	39
Queuing Penalty (veh)	86	10	3	0	2	22				25	16

Intersection: 13: Valley View Pkwy/Vine St & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	152	222	230	145	795	778	124	266	100	96
Average Queue (ft)	54	96	109	130	657	643	92	101	43	37
95th Queue (ft)	117	182	196	175	939	943	140	211	85	76
Link Distance (ft)		1512	1512		743	743		566		338
Upstream Blk Time (%)					39	23				
Queuing Penalty (veh)					0	0				
Storage Bay Dist (ft)	140			120			100		100	
Storage Blk Time (%)	0	4		23	46		12	4	1	0
Queuing Penalty (veh)	1	3		150	94		21	7	1	0

Network Summary

Network wide Queuing Penalty: 2450

Montano de El Dorado TIS — Cumulative (2035) Plus Project Conditions - MIT

SimTraffic Simulation Summary — PM Peak

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	10565	10463	10388	10530	10552	10614	10582
Vehs Exited	10234	10221	10160	10354	10310	10190	10271
Starting Vehs	542	659	694	555	602	542	541
Ending Vehs	873	901	922	731	844	966	852
Travel Distance (mi)	7469	7448	7353	7482	7458	7463	7500
Travel Time (hr)	993.3	1230.8	1130.0	913.8	975.6	1176.3	1105.8
Total Delay (hr)	767.6	1005.0	906.6	687.2	749.6	950.6	879.3
Total Stops	26948	31503	30452	25402	25882	29314	27752
Fuel Used (gal)	464.0	516.7	489.2	444.8	458.1	505.2	491.1

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	10545	10464	10458	10513
Vehs Exited	10283	10106	10109	10221
Starting Vehs	593	588	540	583
Ending Vehs	855	946	889	880
Travel Distance (mi)	7428	7327	7364	7429
Travel Time (hr)	1008.0	1056.5	1085.6	1067.6
Total Delay (hr)	782.5	833.9	862.8	842.5
Total Stops	28254	28068	27829	28144
Fuel Used (gal)	464.3	472.9	481.3	478.8

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Montano de El Dorado TIS — Cumulative (2035) Plus Project Conditions - MIT

SimTraffic Simulation Summary — PM Peak

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2592	2645	2625	2567	2487	2606	2611
Vehs Exited	2451	2511	2562	2526	2450	2481	2524
Starting Vehs	542	659	694	555	602	542	541
Ending Vehs	683	793	757	596	639	667	628
Travel Distance (mi)	1826	1848	1861	1814	1770	1826	1854
Travel Time (hr)	176.8	208.7	184.4	161.1	167.6	191.1	180.5
Total Delay (hr)	121.3	152.4	127.5	106.0	113.9	135.7	124.4
Total Stops	5594	6742	6268	5111	5269	5592	5654
Fuel Used (gal)	98.2	105.7	100.6	93.9	94.1	101.3	99.7

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2698	2620	2576	2601
Vehs Exited	2576	2516	2469	2507
Starting Vehs	593	588	540	583
Ending Vehs	715	692	647	678
Travel Distance (mi)	1879	1836	1781	1830
Travel Time (hr)	175.9	183.4	167.5	179.7
Total Delay (hr)	118.8	127.9	113.3	124.1
Total Stops	5828	5795	5371	5720
Fuel Used (gal)	98.9	100.0	94.4	98.7

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2835	2754	2800	2775	2882	2879	2797
Vehs Exited	2682	2574	2542	2598	2656	2605	2628
Starting Vehs	683	793	757	596	639	667	628
Ending Vehs	836	973	1015	773	865	941	797
Travel Distance (mi)	1968	1887	1874	1915	1975	1943	1937
Travel Time (hr)	245.7	289.0	243.4	205.2	229.9	272.4	245.5
Total Delay (hr)	186.6	231.8	186.5	147.3	170.1	213.9	187.4
Total Stops	7043	8024	7835	6176	6693	7536	6814
Fuel Used (gal)	118.6	125.7	113.9	107.0	113.3	124.0	117.3

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2799	2850	2730	2807
Vehs Exited	2663	2703	2487	2612
Starting Vehs	715	692	647	678
Ending Vehs	851	839	890	868
Travel Distance (mi)	1930	1961	1860	1925
Travel Time (hr)	232.6	241.4	252.1	245.7
Total Delay (hr)	174.5	182.0	195.8	187.6
Total Stops	7206	7350	7162	7178
Fuel Used (gal)	113.9	117.5	116.3	116.8

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2591	2641	2519	2640	2566	2588	2681
Vehs Exited	2612	2564	2536	2611	2636	2593	2525
Starting Vehs	836	973	1015	773	865	941	797
Ending Vehs	815	1050	998	802	795	936	953
Travel Distance (mi)	1842	1885	1825	1867	1861	1874	1860
Travel Time (hr)	275.1	344.3	333.4	264.8	281.1	332.0	318.9
Total Delay (hr)	219.3	287.0	278.0	208.0	224.6	275.2	262.4
Total Stops	7082	8724	8351	7045	6905	8238	7806
Fuel Used (gal)	121.3	138.2	133.3	119.5	123.9	135.3	132.0

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2554	2542	2547	2587
Vehs Exited	2527	2502	2550	2564
Starting Vehs	851	839	890	868
Ending Vehs	878	879	887	894
Travel Distance (mi)	1813	1789	1839	1846
Travel Time (hr)	288.8	281.4	314.5	303.4
Total Delay (hr)	233.7	226.9	258.9	247.4
Total Stops	7773	7421	7528	7686
Fuel Used (gal)	122.9	120.4	130.7	127.8

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2547	2423	2444	2548	2617	2541	2493
Vehs Exited	2489	2572	2520	2619	2568	2511	2594
Starting Vehs	815	1050	998	802	795	936	953
Ending Vehs	873	901	922	731	844	966	852
Travel Distance (mi)	1832	1828	1792	1886	1853	1820	1849
Travel Time (hr)	295.7	388.9	368.8	282.7	297.1	380.8	361.0
Total Delay (hr)	240.4	333.7	314.7	225.9	241.1	325.8	305.1
Total Stops	7229	8013	7998	7070	7015	7948	7478
Fuel Used (gal)	125.9	147.0	141.4	124.4	126.8	144.6	142.1

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	2494	2452	2605	2518
Vehs Exited	2517	2385	2603	2536
Starting Vehs	878	879	887	894
Ending Vehs	855	946	889	880
Travel Distance (mi)	1806	1740	1884	1829
Travel Time (hr)	310.7	350.2	351.6	338.7
Total Delay (hr)	255.5	297.2	294.8	283.4
Total Stops	7447	7502	7768	7545
Fuel Used (gal)	128.5	135.0	139.8	135.6

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.9	1.1	1.0	0.1	0.0	0.1	0.0	0.0	0.0	1.7	6.0	0.3
Denied Del/Veh (s)	12.0	12.0	10.5	1.5	0.9	1.5	0.0	0.0	0.0	27.3	21.7	27.8
Total Delay (hr)	9.3	11.8	2.9	4.4	1.1	2.0	2.0	10.3	0.1	12.6	18.9	0.1
Total Del/Veh (s)	116.5	124.8	31.0	57.5	40.9	20.6	53.8	33.0	12.5	197.4	69.6	10.3
Stop Delay (hr)	8.1	10.1	2.3	3.9	0.9	1.6	1.8	7.6	0.0	11.8	14.7	0.1
Stop Del/Veh (s)	101.1	107.1	25.0	50.1	33.9	16.0	48.6	24.4	9.6	185.1	53.9	4.9

1: El Dorado Hills Blvd & Saratoga Way/Park Drive Performance by movement

Movement	All
Denied Delay (hr)	11.4
Denied Del/Veh (s)	9.8
Total Delay (hr)	75.5
Total Del/Veh (s)	64.5
Stop Delay (hr)	62.8
Stop Del/Veh (s)	53.7

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.7	0.4	0.7	0.4	0.1	0.1	0.0	0.8	0.5
Total Delay (hr)	1.9	5.4	0.0	8.1	11.5	1.0	34.8	4.3	0.5	0.3	30.7	0.6
Total Del/Veh (s)	72.5	142.6	3.1	159.3	164.6	170.5	112.1	13.3	5.9	103.0	77.0	18.5
Stop Delay (hr)	1.8	5.1	0.0	7.5	10.6	0.9	29.4	2.2	0.1	0.3	26.9	0.5
Stop Del/Veh (s)	69.1	136.2	0.0	146.8	150.9	158.4	94.9	6.9	1.5	98.3	67.4	16.0

2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way Performance by movement

Movement	All
Denied Delay (hr)	0.6
Denied Del/Veh (s)	0.4
Total Delay (hr)	99.2
Total Del/Veh (s)	73.4
Stop Delay (hr)	85.4
Stop Del/Veh (s)	63.2

3: Latrobe Road & US 50 EB Ramps Performance by movement

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.9	0.3	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	2.7	0.1	11.9	1.3	2.4	8.0	26.3
Total Del/Veh (s)	23.2	0.7	19.4	6.9	37.2	20.5	18.0
Stop Delay (hr)	2.1	0.0	6.0	0.1	1.8	4.1	14.3
Stop Del/Veh (s)	18.3	0.0	9.9	0.8	28.6	10.5	9.7

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.0	0.0	15.1	1.7	148.5	0.0	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.0	0.1	0.2	656.7	600.2	653.5	0.1	0.2	0.2	0.0	0.0	0.0
Total Delay (hr)	6.8	0.6	0.3	2.2	0.2	35.4	0.5	35.9	0.6	23.9	6.2	0.0
Total Del/Veh (s)	57.3	51.1	18.3	136.6	140.4	222.6	116.2	66.2	14.3	132.7	20.6	1.8
Stop Delay (hr)	6.2	0.6	0.3	2.1	0.2	35.3	0.4	24.8	0.4	21.4	4.4	0.0
Stop Del/Veh (s)	51.9	47.5	17.4	131.1	133.1	221.9	100.1	45.8	9.7	119.0	14.4	0.8

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	165.5
Denied Del/Veh (s)	112.4
Total Delay (hr)	112.6
Total Del/Veh (s)	79.5
Stop Delay (hr)	96.0
Stop Del/Veh (s)	67.8

5: Latrobe Road & White Rock Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	3.2	4.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	20.7	21.1	22.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	34.7	18.1	2.2	12.8	3.7	0.6	4.7	21.7	8.1	6.0	9.5	0.8
Total Del/Veh (s)	223.7	96.5	74.4	96.6	37.7	9.5	141.0	57.2	61.3	89.0	46.1	12.3
Stop Delay (hr)	31.1	14.2	1.8	11.9	3.1	0.4	4.6	19.0	7.8	5.5	7.2	0.5
Stop Del/Veh (s)	200.5	76.0	60.8	89.6	31.1	6.4	136.6	50.1	58.7	81.1	35.0	8.1

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	7.9
Denied Del/Veh (s)	5.2
Total Delay (hr)	122.9
Total Del/Veh (s)	79.3
Stop Delay (hr)	107.0
Stop Del/Veh (s)	69.0

6: Latrobe Rd/Latrobe Dr Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	2.5	0.0	0.0	0.0	2.5
Denied Del/Veh (s)	0.1	0.1	4.8	3.5	0.0	0.0	2.7
Total Delay (hr)	0.5	0.2	7.3	0.2	0.6	1.2	10.1
Total Del/Veh (s)	22.2	13.4	14.1	17.9	25.4	3.4	10.8
Stop Delay (hr)	0.5	0.2	4.7	0.2	0.6	0.5	6.5
Stop Del/Veh (s)	19.6	12.7	9.0	13.3	23.1	1.4	7.0

7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.7	0.4	0.5	0.1	0.1	0.2	3.3	0.5	0.4	0.0	0.0	0.0
Total Delay (hr)	6.2	0.2	0.6	0.2	0.2	0.1	0.4	7.0	0.1	0.4	4.1	0.7
Total Del/Veh (s)	52.9	54.8	47.2	66.1	70.0	32.2	80.1	19.6	21.9	72.8	13.5	15.5
Stop Delay (hr)	5.4	0.2	0.5	0.2	0.2	0.1	0.4	5.5	0.1	0.4	3.2	0.5
Stop Del/Veh (s)	46.3	47.7	41.5	63.5	65.8	31.2	76.6	15.3	17.9	69.9	10.3	11.8

7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.3
Total Delay (hr)	20.1
Total Del/Veh (s)	23.3
Stop Delay (hr)	16.5
Stop Del/Veh (s)	19.1

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.4	0.1	0.0	0.0	0.0	32.0	3.6	44.8
Denied Del/Veh (s)	0.3	0.1	0.2	3.5	1.8	1.6	0.2	0.1	0.2	636.9	617.9	632.0
Total Delay (hr)	5.1	8.4	0.1	2.1	17.0	3.3	2.3	0.3	0.4	9.7	0.8	10.1
Total Del/Veh (s)	67.4	27.9	14.2	102.2	74.4	65.8	131.7	43.9	21.6	277.2	202.5	202.1
Stop Delay (hr)	4.7	6.1	0.1	1.9	13.3	2.7	2.2	0.3	0.4	9.6	0.8	9.9
Stop Del/Veh (s)	61.4	20.5	9.7	90.4	58.1	53.3	128.1	40.3	20.7	273.3	196.9	199.6

12: Driveway/Post St & White Rock Road/White Rock Rd Performance by movement

Movement	All
Denied Delay (hr)	81.0
Denied Del/Veh (s)	96.4
Total Delay (hr)	59.5
Total Del/Veh (s)	73.1
Stop Delay (hr)	51.9
Stop Del/Veh (s)	63.7

Total Network Performance

Denied Delay (hr)	269.3
Denied Del/Veh (s)	87.5
Total Delay (hr)	573.2
Total Del/Veh (s)	185.9
Stop Delay (hr)	469.0
Stop Del/Veh (s)	152.1

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (ft)	161	175	993	816	223	684	210	203	289	310	328	107
Average Queue (ft)	89	160	571	330	162	163	92	101	169	186	192	13
95th Queue (ft)	163	213	1142	975	244	594	175	180	251	272	285	63
Link Distance (ft)			1241	1241		1429			468	468	468	
Upstream Blk Time (%)			9	3								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)	0	3	52		12	0	0	0	0		2	0
Queuing Penalty (veh)	2	10	148		49	0	1	1	1		0	0

Intersection: 1: El Dorado Hills Blvd & Saratoga Way/Park Drive

Movement	B46	SB	SB	SB	SB	SB
Directions Served	T	L	T	T	T	R
Maximum Queue (ft)	5	125	955	940	816	167
Average Queue (ft)	0	122	614	536	381	15
95th Queue (ft)	5	139	1109	1095	904	75
Link Distance (ft)	229		1017	1017	1017	
Upstream Blk Time (%)			21	6	0	
Queuing Penalty (veh)			0	0	0	
Storage Bay Dist (ft)		100				200
Storage Blk Time (%)		55	29		2	0
Queuing Penalty (veh)		180	67		1	0

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	L	L	T	R	L	L	T	T	T	TR
Maximum Queue (ft)	231	336	158	174	923	175	575	687	697	612	508	162
Average Queue (ft)	79	186	73	146	552	40	507	553	467	202	168	41
95th Queue (ft)	172	333	139	226	979	135	658	772	865	527	431	109
Link Distance (ft)	1240	1240			1644			628	628	628	628	628
Upstream Blk Time (%)								21	17	0	0	
Queuing Penalty (veh)								116	93	3	1	
Storage Bay Dist (ft)			150	150		150	550					
Storage Blk Time (%)			2	3	63	0	15	29				
Queuing Penalty (veh)			4	8	126	0	90	176				

Intersection: 2: El Dorado Hills Blvd & US-50 WB Ramps/Saratoga Way

Movement	SB	SB	SB	SB	SB	B46	B46	B46	B46
Directions Served	L	T	T	TR	R	T	T	T	T
Maximum Queue (ft)	223	330	309	320	308	494	486	473	462
Average Queue (ft)	30	301	288	287	223	324	287	215	165
95th Queue (ft)	151	319	330	339	403	574	564	500	455
Link Distance (ft)		229	229	229	229	468	468	468	468
Upstream Blk Time (%)	0	72	50	54	33	6	2	1	1
Queuing Penalty (veh)	0	286	197	213	132	25	8	3	3
Storage Bay Dist (ft)	200								
Storage Blk Time (%)	0	73							
Queuing Penalty (veh)	0	7							

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	199	189	200	581	534	393	221	121	196	438	461	339
Average Queue (ft)	88	56	174	270	164	124	26	55	47	238	127	84
95th Queue (ft)	177	144	241	566	408	272	136	102	197	497	412	309
Link Distance (ft)	1203			557	557	557	557			628	628	628
Upstream Blk Time (%)				2	0	0				1	0	0
Queuing Penalty (veh)				13	1	0				5	1	0
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)			22	7					0	2		
Queuing Penalty (veh)			133	40					0	5		

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	243
Average Queue (ft)	34
95th Queue (ft)	165
Link Distance (ft)	628
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	TR	LT	R	R	L	L	T	T	T
Maximum Queue (ft)	292	312	211	109	592	607	593	18	249	796	813	797
Average Queue (ft)	157	179	25	41	562	580	555	1	29	466	479	493
95th Queue (ft)	243	261	108	82	684	593	622	9	135	886	890	880
Link Distance (ft)			1636	1636	562	562	562			838	838	838
Upstream Blk Time (%)					50	96	19			2	2	2
Queuing Penalty (veh)					0	0	0			8	9	9
Storage Bay Dist (ft)	350	350						225	225			
Storage Blk Time (%)	0	0	0							33		
Queuing Penalty (veh)	0	0	1							4		

Intersection: 4: Latrobe Road & Town Center Blvd

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	698	337	350	638	509	404	44
Average Queue (ft)	205	295	321	482	193	138	5
95th Queue (ft)	637	368	398	747	464	315	24
Link Distance (ft)	838			557	557	557	557
Upstream Blk Time (%)	0			17	0	0	
Queuing Penalty (veh)	1			81	2	0	
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)		3	15	27			
Queuing Penalty (veh)		12	56	179			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	T	T
Maximum Queue (ft)	337	350	1497	1472	187	200	330	295	112	267	354	354
Average Queue (ft)	299	326	849	647	179	193	252	98	44	166	267	260
95th Queue (ft)	397	406	1682	1512	207	221	414	227	95	309	394	384
Link Distance (ft)			1586	1586			310	310	310		267	267
Upstream Blk Time (%)			11	5			17	0		4	19	15
Queuing Penalty (veh)			0	0			63	0		0	94	71
Storage Bay Dist (ft)	325	325			175	175				270		
Storage Blk Time (%)	6	40	7		16	46	2			4	19	
Queuing Penalty (veh)	22	138	41		31	87	8			13	22	

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	B80	B80	B80	B25	B25	B25	SB	SB	SB
Directions Served	T	T	R	T	T	T	T	T	T	L	L	T
Maximum Queue (ft)	333	353	63	254	315	322	248	350	413	204	233	250
Average Queue (ft)	244	307	50	86	126	187	46	108	157	99	123	141
95th Queue (ft)	332	406	57	272	341	423	222	389	489	174	211	225
Link Distance (ft)	267	267		241	241	241	475	475	475			838
Upstream Blk Time (%)	9	45		4	6	32	0	0	3			
Queuing Penalty (veh)	45	220		29	42	206	0	1	22			
Storage Bay Dist (ft)			25							225	225	
Storage Blk Time (%)		26	52							0	1	1
Queuing Penalty (veh)		124	176							0	1	1

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	247	253	206
Average Queue (ft)	152	160	30
95th Queue (ft)	223	230	114
Link Distance (ft)	838	838	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			250
Storage Blk Time (%)		0	0
Queuing Penalty (veh)		0	0

Intersection: 6: Latrobe Rd/Latrobe Dr

Movement	WB	WB	NB	NB	NB	SB	SB	SB	SB	B25	B25	B80
Directions Served	L	R	T	T	TR	L	T	T	T	T	T	T
Maximum Queue (ft)	102	76	302	343	359	116	123	135	168	2	2	14
Average Queue (ft)	47	35	138	166	222	55	41	54	62	0	0	0
95th Queue (ft)	85	68	269	316	374	100	99	112	137	2	2	7
Link Distance (ft)	431	431	336	336	336	475	475	475	475	241	241	267
Upstream Blk Time (%)			0	0	5							
Queuing Penalty (veh)			2	2	26							
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 7: Latrobe Dr & Golden Foothill Pkwy/Monte Verde Dr

Movement	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	125	546	90	117	364	386	420	98	270	306	326
Average Queue (ft)	100	294	29	22	155	165	199	24	119	131	153
95th Queue (ft)	159	509	70	70	302	328	371	67	225	250	279
Link Distance (ft)		670	530		581	581	581		336	336	336
Upstream Blk Time (%)		0			0	0	1			0	0
Queuing Penalty (veh)		0			0	0	0			0	1
Storage Bay Dist (ft)	100			200				195			
Storage Blk Time (%)	7	43			4				2		
Queuing Penalty (veh)	17	87			1				0		

Intersection: 12: Driveway/Post St & White Rock Road/White Rock Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	105	353	386	135	145	680	658	204	141	75	542
Average Queue (ft)	101	303	310	16	83	435	425	79	47	73	509
95th Queue (ft)	114	381	411	79	160	667	647	189	105	81	530
Link Distance (ft)		310	310			692	692	520	520		491
Upstream Blk Time (%)		14	12			3	2				93
Queuing Penalty (veh)		101	89			0	0				0
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	48	16	34	0	3	55				77	29
Queuing Penalty (veh)	268	48	11	0	13	41				208	51

Network Summary

Network wide Queuing Penalty: 4936

Appendix I

Traffic Signal Warrant Worksheets

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 6	No / No	??? / ???
# 14	No / No	??? / ???

```
Default Scenario           Wed Feb 3, 2016 15:17:49                  Page 3-1
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
******************************************************************************
Intersection #6
******************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  1  0    1  0  2  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  762    32    19 1494     0     0    0     0     0    0    13
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.0
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=13]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2320]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace
a rigorous and complete traffic signal warrant analysis by the responsible
jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

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Default Scenario Wed Feb 3, 2016 15:17:49 Page 3-2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1 0	0	1 0	2 0	0	0 0	0 0	0	0 0	0 0	1
Initial Vol:	0	762	32	19	1494	0	0	0	0	0	0	13

Major Street Volume: 2307
Minor Approach Volume: 13
Minor Approach Volume Threshold: -3 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

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```
Default Scenario           Wed Feb 3, 2016 15:17:50                  Page 3-3
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
******************************************************************************
Intersection #14
******************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  0  1  0    0  0  1  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  270     4     0  569     0     0    0     0     0    0     3
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             10.3
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=846]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
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signal warrant (such as the 4-hour or 8-hour warrants).

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```

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Default Scenario Wed Feb 3, 2016 15:17:51 Page 3-4

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 1 0 0			0 0 0 0 0			0 0 0 0 1		
Initial Vol:	0	270	4	0	569	0	0	0	0	0	0	3

Major Street Volume: 843
Minor Approach Volume: 3
Minor Approach Volume Threshold: 265

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Default Scenario Wed Feb 3, 2016 15:13:47 Page 2-1

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 14	No / No	??? / ???

Default Scenario Wed Feb 3, 2016 15:13:47 Page 3-1

Peak Hour Delay Signal Warrant Report

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	654	0	0	316	0	0	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

SIGNAL WARRANT DISCLAIMER

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```
Default Scenario           Wed Feb 3, 2016 15:13:47                  Page 3-2
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #14
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  0  0    0  0  1  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  654     0     0  316     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             970
Minor Approach Volume:           0
Minor Approach Volume Threshold: 228
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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```

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Default Scenario Wed Feb 3, 2016 15:11:45 Page 2-1

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 14	No / No	??? / ???

```
Default Scenario           Wed Feb 3, 2016 15:11:45                  Page 3-1
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #14
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  0  1  0    0  0  1  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  267     4     0  564     0     0    0     0     0    0     3
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             10.3
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=838]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
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```

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Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 1 0 0			0 0 0 0 0			0 0 0 0 1		
Initial Vol:	0	267	4	0	564	0	0	0	0	0	0	3

Major Street Volume: 835
Minor Approach Volume: 3
Minor Approach Volume Threshold: 267

SIGNAL WARRANT DISCLAIMER

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Default Scenario Wed Feb 3, 2016 15:20:37 Page 2-1

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 6	No / No	??? / ???
# 14	No / No	??? / ???

```
Default Scenario           Wed Feb 3, 2016 15:20:37                  Page 3-1
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
******************************************************************************
Intersection #6
******************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  1  0    1  0  2  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1561    49    47  828     0     0    0     0     0    0    55
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             18.1
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=55]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2540]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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a traffic signal in the future.  Intersections that exceed this warrant
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```

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Default Scenario Wed Feb 3, 2016 15:20:37 Page 3-2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1	0	1 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	1561	49	47	828	0	0	0	0	0	0	55

Major Street Volume: 2485
Minor Approach Volume: 55
Minor Approach Volume Threshold: -29 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

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Default Scenario Wed Feb 3, 2016 15:20:38 Page 3-3

Peak Hour Delay Signal Warrant Report

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	670	0	0	330	0	0	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

SIGNAL WARRANT DISCLAIMER

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```
Default Scenario           Wed Feb 3, 2016 15:20:38                  Page 3-4
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                Peak Hour Volume Signal Warrant Report [Urban]
********************************************************************************
Intersection #14
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  0  0    0  0  1  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  670     0     0  330     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Major Street Volume:             1000
Minor Approach Volume:           0
Minor Approach Volume Threshold: 219
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
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```

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Default Scenario Wed Jul 19, 2017 08:24:19 Page 2-1

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 6	No / No	??? / ???
# 14	No / No	??? / ???

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```
Default Scenario           Wed Jul 19, 2017 08:24:19                Page 3-1
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #6
*******************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    1  0  3  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0  960    27    17 1520     0     0    0     0    19    0    13
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             39.5
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=32]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2556]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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```

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Default Scenario Wed Jul 19, 2017 08:24:19 Page 3-2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 960		27	17 1520		0	0	0	0	19	0	13

Major Street Volume: 2524
Minor Approach Volume: 32
Minor Approach Volume Threshold: -34 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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```
Default Scenario           Wed Jul 19, 2017 08:24:19                Page 3-3
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #14
*******************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  1  0    0  0  2  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  393    10     0  884     0     0    0     0     0    0    10
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              9.6
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1297]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
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```

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Default Scenario Wed Jul 19, 2017 08:24:19 Page 3-4

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1	0	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	393	10	0	884	0	0	0	0	0	0	10

Major Street Volume: 1287
Minor Approach Volume: 10
Minor Approach Volume Threshold: 198

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Default Scenario Wed Jul 19, 2017 08:21:18 Page 2-1

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 6	No / No	??? / ???
# 14	No / No	??? / ???

Default Scenario Wed Jul 19, 2017 08:21:18 Page 3-1

Peak Hour Delay Signal Warrant Report

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1670		0	0 1000		0	0	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1670		0	0 1000		0	0	0	0	0	0	0

Major Street Volume: 2670
Minor Approach Volume: 0
Minor Approach Volume Threshold: -54 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

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```
Default Scenario           Wed Jul 19, 2017 08:21:18                Page 3-3
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #14
*******************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  1  0    0  0  2  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  820    10     0  520     0     0    0     0     0    0    10
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.5
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1360]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
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```

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Default Scenario Wed Jul 19, 2017 08:21:18 Page 3-4

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1	0	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	820	10	0	520	0	0	0	0	0	0	10

Major Street Volume: 1350
Minor Approach Volume: 10
Minor Approach Volume Threshold: 181

SIGNAL WARRANT DISCLAIMER

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Default Scenario Wed Jul 19, 2017 08:22:37 Page 2-1

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 6	No / No	??? / ???
# 14	No / No	??? / ???

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Default Scenario Wed Jul 19, 2017 08:22:37 Page 3-1

Peak Hour Delay Signal Warrant Report

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 960		0	0 1520		0	0 0		0	0 0		0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 960		0	0 1520		0	0	0	0	0	0	0

Major Street Volume: 2480
Minor Approach Volume: 0
Minor Approach Volume Threshold: -28 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

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Default Scenario           Wed Jul 19, 2017 08:22:37                Page 3-3
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #14
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  1  0    0  0  2  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  390    10     0  880     0     0    0     0     0    0    10
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              9.6
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1290]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
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```

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Default Scenario Wed Jul 19, 2017 08:22:37 Page 3-4

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1	0	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	390	10	0	880	0	0	0	0	0	0	10

Major Street Volume: 1280
Minor Approach Volume: 10
Minor Approach Volume Threshold: 200

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Default Scenario Wed Jul 19, 2017 08:12:49 Page 2-1

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 6	Yes / Yes	??? / ???
# 14	No / No	??? / ???

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```
Default Scenario           Wed Jul 19, 2017 08:12:49                Page 3-1
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
******************************************************************************
Intersection #6
******************************************************************************
Base Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    1  0  3  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0 1670    47    45 1000     0     0    0     0    47    0    53
ApproachDel:    xxxxxx           xxxxxx           xxxxxx            560.0
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=15.6]
   SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=100]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2862]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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a traffic signal in the future.  Intersections that exceed this warrant
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```

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Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1670		47	45 1000		0	0	0	0	47	0	53

Major Street Volume: 2762
Minor Approach Volume: 100
Minor Approach Volume Threshold: -65 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

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```
Default Scenario           Wed Jul 19, 2017 08:12:49                Page 3-3
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #14
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  1  0    0  0  2  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  833    10     0  532     0     0    0     0     0    0    10
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.6
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1385]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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```

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Default Scenario Wed Jul 19, 2017 08:12:49 Page 3-4

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1	0	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	833	10	0	532	0	0	0	0	0	0	10

Major Street Volume: 1375
Minor Approach Volume: 10
Minor Approach Volume Threshold: 175

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Default Scenario Wed Jul 19, 2017 08:30:05 Page 2-1

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 6	No / No	??? / ???
# 14	No / No	??? / ???

```
Default Scenario           Wed Jul 19, 2017 08:30:05                Page 3-1
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #6
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    1  0  3  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0 1150    27    17 1560     0     0    0     0    19    0    13
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             59.0
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=32]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2786]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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```

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Default Scenario Wed Jul 19, 2017 08:30:05 Page 3-2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1150		27	17 1560		0	0	0	0	19	0	13

Major Street Volume: 2754
Minor Approach Volume: 32
Minor Approach Volume Threshold: -64 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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```
Default Scenario           Wed Jul 19, 2017 08:30:05                Page 3-3
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
*******************************************************************************
Intersection #14
*******************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  1  0    0  0  2  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  793    10     0 1754     0     0    0     0     0    0    10
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.4
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2567]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
-------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
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a traffic signal in the future.  Intersections that exceed this warrant
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```

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Default Scenario Wed Jul 19, 2017 08:30:05 Page 3-4

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1	0	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	793	10	0	1754	0	0	0	0	0	0	10

Major Street Volume: 2557
Minor Approach Volume: 10
Minor Approach Volume Threshold: -39 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Default Scenario Wed Jul 19, 2017 08:37:45 Page 2-1

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 6	No / No	??? / ???
# 14	No / No	??? / ???

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Default Scenario           Wed Jul 19, 2017 08:37:45                Page 3-1
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #6
********************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    1  0  3  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0 1770     0     0 1220     0     0    0     0     0    0     0
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
------------|---------------||---------------||---------------||---------------|
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
are probably more likely to meet one or more of the other volume based
signal warrant (such as the 4-hour or 8-hour warrants).

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jurisdiction.  Consideration of the other signal warrants, which is beyond
the scope of this software, may yield different results.
```

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Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1770		0	0 1220		0	0	0	0	0	0	0

Major Street Volume: 2990
Minor Approach Volume: 0
Minor Approach Volume Threshold: -93 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

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Peak Hour Delay Signal Warrant Report

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1	0	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0 1640		10	0 1020		0	0	0	0	0	0	10
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			18.0		

Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2680]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1	0	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	1640	10	0	1020	0	0	0	0	0	0	10

Major Street Volume: 2670
Minor Approach Volume: 10
Minor Approach Volume Threshold: -54 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Default Scenario Wed Jul 19, 2017 08:31:36 Page 2-1

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 6	No / No	??? / ???
# 14	No / No	??? / ???

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Default Scenario Wed Jul 19, 2017 08:31:36 Page 3-1

Peak Hour Delay Signal Warrant Report

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1150		0	0 1560		0	0	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Default Scenario Wed Jul 19, 2017 08:31:36 Page 3-2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1150		0	0 1560		0	0	0	0	0	0	0

Major Street Volume: 2710
Minor Approach Volume: 0
Minor Approach Volume Threshold: -59 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Default Scenario           Wed Jul 19, 2017 08:31:36                Page 3-3
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
******************************************************************************
Intersection #14
******************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  1  0    0  0  2  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0  790    10     0 1750     0     0    0     0     0    0    10
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             11.4
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2560]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
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signal warrant (such as the 4-hour or 8-hour warrants).

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```

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Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1	0	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	790	10	0	1750	0	0	0	0	0	0	10

Major Street Volume: 2550
Minor Approach Volume: 10
Minor Approach Volume Threshold: -38 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 6	Yes / Yes	??? / ???
# 14	No / No	??? / ???

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```
Default Scenario           Wed Jul 19, 2017 08:10:38                Page 3-1
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
********************************************************************************
Intersection #6
********************************************************************************
Base Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  2  1  0    1  0  3  0  0    0  0  0  0  0    0  0  1! 0  0
Initial Vol:    0 1770    47    45 1220     0     0    0     0    47    0    53
ApproachDel:    xxxxxx           xxxxxx           xxxxxx            880.2
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=24.5]
   SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=100]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3182]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
--------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
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```

Default Scenario Wed Jul 19, 2017 08:10:38 Page 3-2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	1	0	1 0 3	0	0	0 0 0	0	0	0 0 1!	0	0
Initial Vol:	0 1770		47	45 1220		0	0	0	0	47	0	53

Major Street Volume: 3082
Minor Approach Volume: 100
Minor Approach Volume Threshold: -103 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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```
Default Scenario           Wed Jul 19, 2017 08:10:38                Page 3-3
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                     Peak Hour Delay Signal Warrant Report
******************************************************************************
Intersection #14
******************************************************************************
Base Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Lanes:        0  0  1  1  0    0  0  2  0  0    0  0  0  0  0    0  0  0  0  1
Initial Vol:    0 1653    10     0 1033     0     0    0     0     0    0    10
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             18.2
------------|---------------||---------------||---------------||---------------|
Approach[westbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2706]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.
------------------------------------------------------------------------------
SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an
"indicator" of the likelihood of an unsignalized intersection warranting
a traffic signal in the future.  Intersections that exceed this warrant
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```

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Default Scenario Wed Jul 19, 2017 08:10:38 Page 3-4

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	1	0	0 0 2	0	0	0 0 0	0	0	0 0 0	0	1
Initial Vol:	0	1653	10	0	1033	0	0	0	0	0	0	10

Major Street Volume: 2696
Minor Approach Volume: 10
Minor Approach Volume Threshold: -57 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER

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Z15-0002/P15-0006/PD15-0004/S17-0015
EXHIBIT M - TRANSPORTATION IMPACT STUDY (TIS)

Appendix J

Drive-Through Restaurant Queuing

Time	120 Harding Blvd Drive Thru Queue (single)	3994 Foothills Blvd Drive Thru Queue (dual)	7850 Lichen Dr Drive Thru Queue (dual)
06:00 AM	1	1	1
06:15 AM	2	2	3
06:30 AM	3	1	6
06:45 AM	1	3	6
07:00 AM	5	4	3
07:15 AM	4	6	5
07:30 AM	1	7	3
07:45 AM	5	6	10
08:00 AM	3	1	7
08:15 AM	2	7	0
08:30 AM	4	9	11
08:45 AM	3	10	5
09:00 AM	0	6	3
09:15 AM	1	4	7
09:30 AM	2	3	4
09:45 AM	2	1	3
10:00 AM	3	2	9
10:15 AM	2	1	3
10:30 AM	2	5	2
10:45 AM	5	4	2
11:00 AM	6	1	2
11:15 AM	10	8	2
11:30 AM	10	4	3
11:45 AM	7	1	11
12:00 PM	7	2	10
12:15 PM	13	4	7
12:30 PM	8	10	3
12:45 PM	5	11	4
01:00 PM	7	5	12
01:15 PM	3	8	2
01:30 PM	2	11	9
01:45 PM	12	4	0

Source: Kimley-Horn and Associates, Inc. December 12, 2016